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How to cite this thesis
LEARNING MATERIAL SUPPLY CHAIN PRACTICES
AT PUBLIC SCHOOLS IN LIMPOPO

by

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in
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in the
FACULTY OF MANAGEMENT
at the
UNIVERSITY OF JOHANNESBURG

Supervisor: MR T. MBARA

MAY 2013
DECLARATION

I, Kwinda Tshifhiwa Phanuel, do hereby declare that this minor dissertation is my original work and that I have accurately reported and acknowledged all the sources, and I also declare that this document has not previously been submitted in its entity or in part at any university with a view to obtaining an academic qualification.

Signature ___________________________________________ Date __________________________

T.P. Kwinda
ABSTRACT

More than fifteen years have gone by since the fall of the apartheid regime in South Africa (SA) in 1994. From 1994, it became critical for every institution of the government to work towards the transformation of the public sector. The ultimate aim of this transformation has been to bring about a better life for all. However, the pace at which improvement in the general life of people from the historically disadvantaged communities is moving slowly. The best weapon that can be employed to ensure that life is improved is through the provision of quality education. There is a serious need for an improvement in the educational system of our country which is counted among the lowest in the world in terms of literacy and mathematics. This situation is continuing to prevail despite the fact that South Africa has some of the best infrastructure in the world.

The researcher has undertaken this study with the assumption that the Supply Chain Management (SCM) plays a critical role in the improvement of service delivery and cost reduction as well as inventory reduction. Initially, the SCM was applied in the private sector only where the focus is on profitability. However, for the past few years, the SCM has been overlapping into the public sector. The SA government is amongst the first to adopt SCM as a tool to improve service delivery and to reduce costs. The focus of the SCM in the SA public sector is efficiency, effectiveness and the economic use of resources in the context of development and equity. There are many potential benefits that can be gained in the public sector when SCM is implemented effectively. These benefits include improved service delivery, inventory reduction and cost reduction.

The Department of Basic Education (DoBE) is investing heavily towards the improvement of the standard of education in the country. Despite this, there are still learners who attend schools without all the necessary textbooks, the basic source of information for learning. The shortage of books prevails even in Limpopo Province which is one of the poorest provinces in SA. As a poor province, learners in Limpopo do not have easy access to other sources of information such as the internet and only very few schools in Limpopo Province have libraries. These
learners rely on the textbooks to get information and therefore the failure to provide adequate textbooks to these learners leaves them with nothing to depend on for their studies. Consequently, their performance at schools is affected to the point that they may fail at the end of the school year.

The focus of this research is to analyse the supply chain of learning materials to public schools in Limpopo Province. The main emphasis of the research is on:

- the efficiency of the supply chain of learning materials to public schools;
- the effectiveness of the supply chain of learning materials to schools in Limpopo Province.

The purpose is to gain a better understanding of the extent to which the SCM of the supply of books to public schools was being implemented in the Limpopo DoBE. The researcher made use of three public schools, the district officials, the provincial officials and the supplier (publishing company) to assess the implementation of the SCM in the supply of learning materials to schools in Limpopo Province. The researcher, in order to gather reliable information, interviewed ten learners from each of the three schools, one administrator and a principal from each school, Vhembe District officials, provincial officials and the manager of a publishing company. It then became clear that little has been done in terms of the implementation of the SCM in the Limpopo DoBE.

This research informed the researcher that there are not enough books for learners at schools. Shortage of books is one of the major factors that contribute towards the dismal performance of learners in Limpopo Province. The learners are the end-users of the books supplied to schools therefore the schools are seen as the customers. Failure to provide books to schools and ultimately to learners is an indication of the failure of the Limpopo Province learning materials supply chain. It can be concluded that the level of customer service of the LTSM supply chain is very low. The factors that render the learning materials supply chain to be ineffective are: books that are delivered to schools may deviate from the quantity ordered; in certain instances schools receive titles that are different from what they had ordered and in certain schools books may not be supplied at all although the schools have ordered them using the requisition forms.
The Limpopo Provincial Department of Education is also faced with the problem of inefficiency in the LTSM supply chain. The inefficiency is so high that the learning materials budget is exhausted before the end of the financial year. Because of this, in the 2011/2012 financial year, it became difficult for the department to purchase books in late 2011 for use in early 2012. The supply chain of learning materials is so costly that, in the 2011/2012 financial year, it incurred unexpected expenditure worth over a million rand. This is caused by purchasing books at higher prices, the failure to monitor the performance of the suppliers, the lack of effective resources for communication and service providers charging higher prices, among other reasons.

The issue around the failure to deliver books to schools in Limpopo Province has become a critical point of discussion in SA. In this dissertation, the researcher has endeavoured to make recommendations that could assist the Limpopo DoBE to bring about improvement in the supply chain of learning materials. This improvement can lead to efficiency through cost reduction, and also to effectiveness through reliability.
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I would like to acknowledge the following people for their support in making this project complete:

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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBBEE</td>
<td>Broad-Based Black Economic Empowerment</td>
</tr>
<tr>
<td>BEE</td>
<td>Black Economic Empowerment</td>
</tr>
<tr>
<td>CAPS</td>
<td>Curriculum Assessment Policy Statement</td>
</tr>
<tr>
<td>CDs</td>
<td>Compact Discs</td>
</tr>
<tr>
<td>CFO</td>
<td>Chief Financial Officer</td>
</tr>
<tr>
<td>DDG</td>
<td>Deputy Director-General</td>
</tr>
<tr>
<td>DG</td>
<td>Director-General</td>
</tr>
<tr>
<td>DoBE</td>
<td>Department of Basic Education</td>
</tr>
<tr>
<td>DVDs</td>
<td>Digital Versatile Discs</td>
</tr>
<tr>
<td>FET</td>
<td>Further Education and Training</td>
</tr>
<tr>
<td>GEAR</td>
<td>Growth, Employment and Redistribution</td>
</tr>
<tr>
<td>GET</td>
<td>General Education and Training</td>
</tr>
<tr>
<td>HDI</td>
<td>Historically Disadvantaged Individuals</td>
</tr>
<tr>
<td>HOD</td>
<td>Head of Department</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>LTSM</td>
<td>Learning and Teaching Support Materials</td>
</tr>
<tr>
<td>MFMA</td>
<td>Municipality Finance Management Act</td>
</tr>
<tr>
<td>MTEF</td>
<td>Medium-Term Expenditure Framework</td>
</tr>
<tr>
<td>NCS</td>
<td>National Curriculum Statement</td>
</tr>
<tr>
<td>PFMA</td>
<td>Public Finance Management Act</td>
</tr>
<tr>
<td>PPPFA</td>
<td>Preferential Procurement Policy Framework Act</td>
</tr>
<tr>
<td>RDP</td>
<td>Reconstruction and Development Programme</td>
</tr>
<tr>
<td>RSA</td>
<td>Republic of South Africa</td>
</tr>
<tr>
<td>SA</td>
<td>South Africa</td>
</tr>
<tr>
<td>SASA</td>
<td>South African Schools Act</td>
</tr>
<tr>
<td>SC</td>
<td>Supply Chain</td>
</tr>
<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
</tr>
<tr>
<td>SGB</td>
<td>School Governing Body</td>
</tr>
<tr>
<td>SLA</td>
<td>Service Level Agreement</td>
</tr>
<tr>
<td>SMMEs</td>
<td>Small, Medium and Micro Enterprises</td>
</tr>
<tr>
<td>VECO</td>
<td>Venda College</td>
</tr>
</tbody>
</table>
CHAPTER 1: INTRODUCTION TO THE STUDY

1.1 BACKGROUND

The democratic government that took power in South Africa (SA) in 1994 inherited an education system that was, by then, politically fragmented. At that time, there were sixteen departments of education that were geographically, ethnically and racially based. Therefore the government had an enormous task of bringing together all these fragmented departments of education into a single National Department of Education. Included in this new National Department of Basic Education (DoBE) were the education systems of the former black national states or homelands that were incorporated into the national fold (Mashau, Steyn, van der Walt & Wolhuter, 2008:415).

These former homelands were historically disadvantaged in terms of, amongst others, infrastructural development. Provinces that had large historical homelands include Kwazulu-Natal, Eastern Cape and Limpopo. These provinces are predominantly rural and are described as poor (Chisholm, 2004:1). Limpopo Province is situated in the northern part of South Africa. It includes the former homelands of Venda, Lebowa, Gazankulu and a previous white area (Mashau et al. 2008:421).

According to Section 29(1)(a) of the Constitution of the Republic of South Africa (RSA), everyone has the right to basic education. The denial of access to education is deemed a denial of the full enjoyment of other rights such as the right to dignity, the right to equality and the inter-related rights to food and healthcare, all of which enable individuals to develop their full potential to participate meaningfully in society (Veriava & Coomans, 2005: 595).

With the attainment of democracy in South Africa in 1994, it became imperative for the country to establish a quality, equitable and democratic educational system. During the stages of transition, emphasis was placed on the distribution of resource inputs (Sayed & Motala, 2009:1). According to the studies that were reviewed for this dissertation, there is a very close relationship between academic performance and school inputs. The availability of textbooks
and other learning materials at schools plays a vital role in the academic performance of the learners. There is a higher level of probability that learners who can access textbooks perform better at school. Comparatively speaking, learners who attend well-resourced schools, in terms of textbooks, tend to achieve better compared to their counterparts who attend schools that are not adequately resourced (Barrett, Ali, Clegg, Hinostroza, Lowe, Nikel, Novelli, Oduro, Pillay, Tikly & Yu, 2008:22).

According to the studies, one of the most cost-effective ways to improve academic performance of learners is to provide quality textbooks. Access to and availability of textbooks is a significant predictor of academic achievement. There is an identified link between learner achievement and textbooks. Textbook has been regarded as one of the most important resources used by teachers for teaching and learning (Ciascai & Haiduc, 2011:1). The textbook does not only facilitate teaching, but also develop the child’s attraction to books, and the habit of using them to widen his/her field of knowledge and seek information (Seguin, 1989:10).

In spite of these roles of textbooks, currently the shortage of textbooks at public schools is one of the persistent problems in the South African education system. This problem is encountered due to a lack of timely delivery of textbooks to schools, recording and storage of textbooks, retrieval of textbooks, purchase of textbooks and requisitions of these books (Themana & Mabasa, 2002:275). The reason behind these is that the SA public sector is still characterised by poor implementation of Supply Chain Management practices, a lack of skills and capacity in the implementation of Supply Chain Management (Migiro & Ambe, 2008:231).

It is the responsibility of the state to fund public schools. The funding of the public schools in SA can be classified into two categories, namely, personnel expenditure and non-personnel expenditure. The non-personnel expenditure is often referred to as the school allocation. The school allocation covers a wide range of items which include stationery, maintenance as well as services like electricity which can be referred to as the running costs of the schools. Besides these items, the school allocation also covers support learning materials like textbooks which are the only items directly related to learning (Sayed & Motala, 2009:2).
SA is faced with rising costs of education. One of the most substantial factors to the rise in the cost of education is the cost of textbooks. The rise in the cost of textbooks can be attributed primarily to inadequate competition in the production of textbooks, inappropriate high quality standards, cost relating to inefficient distribution, and poor retrieval rates in school. Another cause lies in the fact that as these books play a very crucial role in the promotion of learning, publishers tends to increase their prices as a result of the always increasing demand of the books (Storer & Teljeur, 2003: 33). Books that are used in SA are expensive due to the quality of the paper used as well as the methods that are used to bind books. It may be more cost-effective to turn to textbooks that are made of lower quality paper, printing and binding as is the case in many other developing countries of the same level as SA. While these steps may lead to the reduction in the prices of the textbooks by about 20%, the quality of textbooks will ultimately be compromised on the basis of costs. It must, however, be remembered that better quality textbooks last longer (Pillay, 2006: 9-10).

Most schools have systems for recording the delivery of textbooks, but these systems are not efficient or systematic. According to Casey (2010), the Western Cape Department of Education in SA has provided guidelines and training on textbook retrieval to schools. Although many schools already have textbook retrieval programmes, some are not successful in retrieving textbooks from learners at the end of the year (Casey, 2010). Once they are delivered to the school, the textbooks are distributed to the learners at the beginning of the year with the anticipation that these books will be returned to the school at the end of the year. However, not all of these books are retrieved at the end of the year. Of the books that are returned, some are so badly damaged that they can no longer be used. This is caused by poor management of the distribution and retrieval of textbooks. (Chisholm, 2004:12).

Most provinces do not have effective methods to retrieve books from learners. The inability to recover textbooks that are not returned by the learners at the end of the year has become a significant cost aspect to the Provincial Departments of Education. In 2001, only 1% of learner
books were returned in Limpopo, 55% of the textbooks were returned in Mpumalanga and the Gauteng Department of Education had 90% of textbooks returned (Pillay, 2006:11).

1.2 SUPPLY CHAIN MANAGEMENT

South Africa, like most of other countries in the world, has, for quite some time, been applying Supply Chain Management (SCM) as a means to manage procurement and logistics (Ambe & Badenhorst-Weiss, 2011:73). The concept of supply chain management and that of purchasing and procurement both refer to the integration of related functions to provide effective and efficient materials and services to organisations (Leenders, Johnson, Flynn & Fearon, 2006:4).

All stages that are involved in satisfying the needs of customers form a supply chain. Included in this chain are manufacturers, suppliers, transporters, warehouses, retailers and customers. Supply chain management integrates and manages the flow and control of materials. It is effective when there is operational sharing of information within the chain. Therefore suppliers, customers and third-party service providers need to share information so that there can be a more efficient, effective and competitive channel. There are three parts of the supply chain:

- **Upstream** supply chain which is composed of the entity’s first suppliers and their suppliers.
- **Internal** supply chain in which the supplies are processed into outputs and then finally distributed out as goods and services.
- **Downstream** supply chain which involves delivery of the final product to the customer (Matthee, 2005:55).

Recently, there has been an increasing interest in the concept of SCM in the public sector (Ambe & Badenhorst-Weiss, 2011:73). Public procurement covers the supply to public institutions and agencies which include publicly owned entities. There are different types of public agencies and institutions (Leenders et al, 2006:399). The Department of Education, together with its various sections, forms part of the public agencies. In the education sector, the
focus of supply chain management is to streamline the chain through which learning materials are delivered to students at schools (Ambe & Badenhorst-Weiss, 2011:74).

1.3 BRIEF REVIEW OF PUBLIC SECTOR SUPPLY CHAIN SETUP

The public sector supply chain can be inbound, outbound or fully integrated. Inbound supply chain is concerned with the delivery of goods and services into the organisation to support its operational objectives (Office of Government Commerce, 2005:6). The SCM in the public sector differs from one department to the other. In the education sector, the SCM is focused on streamlining the chain through which teaching and learning materials are delivered to students (Migiro & Ambe, 2008:23).

In SA, it is the National DoBE, working together with its Provincial Departments of Education that provides basic education for the public. During the early years of their schooling, young children are encouraged to read as many books as possible. However, an excellent culture of reading is difficult to reach when a shortage of textbooks exists in schools. This situation is made worse by lack of libraries which provide reading materials for the learners (Baatjie, 2003:5).

Limpopo Province is, for the most part, historically disadvantaged. This province is predominantly rural and has suffered from inequality in terms of infrastructure development. Classrooms are often overcrowded, thus posing a serious challenge to the teachers. More instructional materials like textbooks have to be provided. Each learner has to be able to access learning aids but often there are too few textbooks for the learners. The effects of this include competition amongst the learners for the learning materials which leads ultimately to poor academic performance especially among those who do not get the materials. Adequate supplies of textbooks can lead to better performance as these textbooks can help learners to study effectively.

In a South African study on the causes of poor performance by learners, Legotlo, Maaga, Sebeko, van der Westhuizen, Mosoge, Nieuwoudt & Steyn (2002) found that a lack of resources,
textbooks in particular, was identified to be the major contributing factor towards poor performance and inadequate achievement by learners at schools. It was found that, in many schools, not all the learners had all the required textbooks. In some schools, learners had to share the few copies of textbooks that were available. Without textbooks, learners depended on the notes provided by educators for their learning. This lack of textbooks always results in insufficient commitment towards learning on the part of learners. The learners also failed to do their normal school work mainly due to lack of adequate textbooks, resulting ultimately in poor academic performance (Legotlo et al, 2002:115).

The National DoBE in SA is made up of three major levels, namely the national, the provincial and the district (area) branches. One of the core functions in these three levels of the Department of Education is the prescription, procurement, distribution and maintenance of the Learning and Teaching Support Materials (LTSM). According to the Policy for Procurement, Supply, Maintenance and Retrieval of Learning and Teaching Support Materials (2011), the following table can be used to show the various stages that are involved in the process of procurement, distribution, maintenance and retrieval of learning and teaching support materials, yearly timeframe and responsibilities over a period of three years.
Table 1.1: Distribution of Learning and Teaching Support Materials

<table>
<thead>
<tr>
<th>Process</th>
<th>Time Frame</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of curriculum needs</td>
<td>November year 1</td>
<td>Curriculum</td>
</tr>
<tr>
<td>Provisioning of budget</td>
<td>December year 1</td>
<td>Chief Financial Officer</td>
</tr>
<tr>
<td>Completion of requisition from schools</td>
<td>March year 2</td>
<td>Director: Supply Chain Management</td>
</tr>
<tr>
<td>Screening of data received</td>
<td>May year 2</td>
<td>Curriculum</td>
</tr>
<tr>
<td>Capturing and compilation of requisition data</td>
<td>June year 2</td>
<td>Director: Supply Chain Management</td>
</tr>
<tr>
<td>Registration of service providers</td>
<td>January-June Year 2</td>
<td>Chief Financial Officer</td>
</tr>
<tr>
<td>Place orders for textbooks and stationery</td>
<td>July Year 2</td>
<td>Director: Supply Chain management</td>
</tr>
<tr>
<td>Receive and distribute textbooks and monitor and verify supply to schools</td>
<td>Oct/November Year 2</td>
<td>Director: Supply Chain Management</td>
</tr>
<tr>
<td>Report on distribution and shortages in delivery and address discrepancies</td>
<td>November Year 2</td>
<td>Districts, Curriculum Supply Chain</td>
</tr>
<tr>
<td>Receive invoices and submissions</td>
<td>December Year 2</td>
<td>Director: Supply Chain Management</td>
</tr>
<tr>
<td>Payments of claims</td>
<td>January Year 3</td>
<td>Chief Financial Officer</td>
</tr>
<tr>
<td>Distribution of books to learners</td>
<td>January Year 3</td>
<td>Schools, Districts</td>
</tr>
<tr>
<td>Retrieval of textbooks</td>
<td>November Year 3</td>
<td>Schools, Districts, Systems and Planning</td>
</tr>
<tr>
<td>Overall accountability and reporting</td>
<td>Ongoing</td>
<td>Head of Department</td>
</tr>
</tbody>
</table>

Source: Policy for Procurement, Supply, Maintenance and Retrieval of Learning and Teaching Support Materials (2011)

1.4 RESEARCH PROBLEM STATEMENT

The most cost-effective way to improve academic performance of learners is to provide quality textbooks. When books are available and accessible, the academic achievement of learners becomes predictable. Teachers regard textbooks as important resources for teaching and learning. Despite that, shortage of textbooks at public schools is one of the persistent problems in Limpopo, SA. This problem is encountered due to a lack of timely delivery of textbooks to schools, recording and storage of textbooks, retrieval of textbooks, purchase of textbooks and
requisitions of these books (Themana & Mabasa, 2002:275). The reason behind all these is that the SA public sector is still characterised by poor implementation of Supply Chain Management practices, a lack of skills and capacity in the implementation of Supply Chain Management (Migiro & Ambe, 2008:231). Without effective SC practices, the shortage of books will escalate and this will be jeopardise the efficiency and effectiveness of the Province.

### 1.5 RESEARCH QUESTIONS

The critical question that was asked with regard to this analysis is as follows:

How do the learning materials supply chain practices in Limpopo affect the supply of textbooks to public schools?

The following sub-questions can also be asked:

a) How efficient is the Limpopo supply chain of textbooks and other learning material to public schools?

b) How effective is the Limpopo supply chain of textbooks and other learning materials to public schools in Limpopo.

c) How effective are suppliers in terms of the supply of learning material to schools as per order quantity?

d) How accurately do the schools order the required books with regard to the number of learners?

e) To what extent are the schools capacitated to properly distribute and retrieve learning materials from learners?

In order to answer these questions, a study, in the form of a supply chain internal audit of the supply chain management, had been undertaken that had provided the researcher with the ability to map the supply chain and the role players therein.
1.6 PURPOSE OF STUDY AND OBJECTIVES

The key purpose of this study is to assess the effectiveness and efficiency of the supply chain practices of textbooks to the public schools in the Limpopo Province. The objectives of this study are to:

i. understand the procedures that are followed in the Limpopo Department of Education regarding the acquisition, supply, delivery and return of textbooks

ii. assess the effectiveness and efficiency of each procedure,

iii. understand distribution and retrieval of learning materials to and from learners in the public schools;

iv. assess deficiencies in the existing supply chain management system;

v. examine whether the supply chain management of the supply chain of learning materials follows a structured sequence of events in the implementation of the supply chain activities;

vi. develop recommendations and strategies that would help the Limpopo Provincial Department of Basic Education to improve its supply chain of learning materials

1.7 STUDY AREA

This study was conducted in the Limpopo Province of SA. The RSA is made up of nine provinces, of which one is Limpopo. Limpopo is situated in the northern part of the country and it shares borders with Zimbabwe, Mozambique and Botswana. The province has incorporated the three former homelands which are Venda, Gazankulu and Lebowa including a very small portion of White and Indian communities. Limpopo Province is typically rural and the communities in these three homelands were previously disadvantaged, leading to high level of illiteracy, poverty, unemployment, lower infrastructural development and many other problems. The majority of the people depend on government grants for survival. Vhembe District comprises four local government municipalities, namely Makhado, Musina, Mutale and Thulamela.
The Provincial Department of Education in Limpopo has five districts. These districts are Mopani, Sekhukhune, Waterberg, Capricorn and Vhembe. Of the five districts, the researcher had chosen to undertake this study in Vhembe District as well as the provincial offices of the Limpopo Provincial Department of Education in Polokwane. He also visited one supplier company.

Vhembe District is found in the northern part of Polokwane, the capital of Limpopo Province. Towns that are found in Vhembe are Makhado (Louis Trichardt), Thohoyandou, Musina and Malamulele. Vhembe District consists mainly of schools from communities that have been historically disadvantaged. Poverty is still rife in Vhembe. Learners still travel long distances to get to the nearest schools. To get fairly fed, most learners rely on the government initiative to provide food to the schools for the learners. The provision of quality education is the only weapon that can drive these communities out of this difficult situation. This can be realised only when adequate resources for teaching and learning are supplied to the schools in an effective manner. Therefore, an analysis of supply chain of learning and teaching support materials to schools in Limpopo Province and in Vhembe District in particular can assist to determine the efficiency and effectiveness of the current supply chain.

There are 324 secondary schools with Grade 12 in Vhembe District. This number represents, predominantly, schools from historically disadvantaged communities. However, there are also few former Model C schools. Out of these 324 schools, only three schools were selected randomly for this research. The three schools represent only 1.23 per cent of the secondary schools with Grade 12 in Limpopo. The researcher, for the purpose of this study, selected one school from the deep rural, one from the vicinity of Thohoyandou town, which can be classified as a semi-rural school and one from the former Model C schools. Due to financial constraints, the researcher decided to limit the number of schools to these three. Besides that, the researcher is based in Vhembe District, therefore it was cost-effective to conduct the study in Vhembe as he did not have to travel long distances to collect data. This helped minimise transport costs. The only long distance the researcher had to travel was to Polokwane to collect information from the provincial officials.
1.8 RESEARCH DESIGN AND METHODOLOGY

There is ambiguity in the definition of the term ‘research design’ which has led to confusion with regard to the usage of the term (Maree, 2007:70). According to Mouton (2011), a research design is a plan or blueprint of how one intends to conduct the research, thus, the focus of a research design is the end product, the point of departure and the logic of research (Mouton, 2011:56). Therefore, a research design can be described as the whole process of research starting from conceptualising a problem to writing a report (de Vos, Strydom, Fouche & Delport, 2008:268).

There are basically five types of research designs that can be used by qualitative researchers. The research designs are biography, phenomenology, grounded theory, ethnography and case study. It is from these designs that a researcher may select one that best suits his/her philosophical assumptions. The selection of the type of research design is often based on the researcher’s assumptions, research skills and research practices.

The researcher applied the mapping of the supply chain as a framework that is meant to align performance at each link within the supply chain. Supply chain mapping aligns performance at each link from point-of-origin to point-of-consumption. This makes it possible to identify the point of chain where key linkages, which are the most critical to success, exist. With the mapping of the supply chain, the various paths of materials and information flow from the source to the final consumer are cleared. Thus, mapping the supply chain helps to identify the different entities/organisations and linkages that comprise the supply chain (Lambert & Pohlen, 2001:8).

There are two approaches to research, namely the quantitative approach and the qualitative approach (de Vos et al.200:73). The qualitative method of research had been applied in this research. This was because it deals with subjective data which is required in the supply chain audit, unlike the quantitative research which is concerned with the evaluation of objective numerical data. The qualitative method is exploratory and is also flexible which allows the researcher to change data progressively in order to gain a clear understanding of what is being
investigated. It investigates the constraints of daily events, basing results on the behaviour of people (Welman, Kruger & Mitchell, 2005:8). With the use of the qualitative method, the researcher was able to talk to the people within the supply chain in an intimate manner, and was thus able to get their inside view.

1.9 LIMITATIONS

For the purpose of this study, only Limpopo Province was considered. This study covered three schools from within Vhembe District, Vhembe District supply chain officials, Limpopo Province supply chain officials and a supplier company. So the findings were based on the information obtained from this limited number of schools and institutions. The researcher did not have any sponsors for this study. So, all the funding required for this study had to be provided by the researcher. As a result, the researcher had to limit the scope of the study.

Currently, most of the departments in Limpopo Province, including the Department of Education, are under the administration of the National Government as a result of alleged mismanagement of public funds. Because of the on-going investigations of the allegations, the researcher had been refused permission to go through some of the documents necessary for supply chain management verification and had also been given very little information about the supply chain of the learning and teaching materials. It was very difficult to meet the key players in the supply chain of learning materials from the Provincial offices. The only official who accepted to be interviewed is in charge of the warehouse as well as the warehouse personnel. The researcher even requested to be provided with the list of suppliers with a view to visit them and had interviews with them. Even this request was never accepted but rejected. It was only after a stronger struggle that the researcher managed to interview the manager of one of the supplier company.

The issue of anonymity and confidentiality also presented a limitation to the research. The researcher wished to use video recorder to capture and record the interviews and the observations, and cameras to take photos. But the participants chose to remain anonymous and confidential due to the progressing investigations. As a result, the researcher resorted to the
use of a tape recorder. While participants were never coerced to take part in the interviews, they were also afforded the opportunity to leave during the interview processes had they so decided. However neither of the participants ever excused him/herself during the processes of interviews and sharing of information.

1.10 OUTLINE OF CHAPTERS

The outline of the chapters for this study will take the following format:

Chapter 1: Introduction
   In this chapter, the following subheadings are dealt with: background of the problem, supply chain management, brief overview of public sector supply chain setup, research problem statement, research questions, purpose of the study and objectives, study area, research design and methodology, and limitations

Chapter 2: Literature review
   Chapter 2 deals with the review of the literature. Here the researcher reviews the previous studies that are related to the research problem under study. The topics covered here are those that deal with the management of the supply of learning and teaching materials to schools.

Chapter 3: Research method
   Here the research methods that were applied during the investigation are indicated. These research methods include the qualitative paradigm, the qualitative methods, the role of the researcher, sources of data, verification of data and the plan for narrative results. Design of the interview schedule is also discussed as part of this chapter.

Chapter 4: Research findings
   In this chapter the researcher lays out the findings of the research and maps out the supply chain from the audit.

Chapter 5: Recommendations and Conclusions
   The researcher summarises the investigation in this chapter. There is also a discussion on the study. The researcher has also drawn conclusions and suggestions for future research.
CHAPTER 2: LITERATURE REVIEW

This chapter on literature review is divided into two sections. The first section (2.1) focuses on SC in both private and public sectors. The second section (2.2) is on SC policies in SA and the education system.

2.1 SUPPLY CHAIN MANAGEMENT: PRIVATE AND PUBLIC SECTORS

2.1.1 Introduction

Due to the rapid increase in globalisation, businesses have realised the importance to collaborate in order to improve efficiency and effectiveness in their operations. Thus, businesses acknowledge the existence of each other as part of the wider supply chain. This strengthens the existing relationships between the organisations throughout the supply chain activities. These supply chain activities include the flow of materials from the initial suppliers through the manufacturing, warehouses, distribution centres and delivery to the end users (Langley et al., 2008: 8).

From as early as the 1980s, both the private and public entities have been led into examining and adapting their supply chains. This came about as a result of economic cycles, developments in the field of technology and market forces. In addition to these, other forces include globalisation of the businesses, an increase in product variety, increasing complexity of supply networks and the shortening of product life-cycles. With an increase in globalisation and the liberalisation of world trade, many manufacturers and traders are now increasingly dependent on materials sourced from destinations across the globe. This has enabled these businesses to compete successfully in their various industries and has also contributed to economic growth throughout the world (Goedhals-Gerber, 2010: 39).

In this chapter, the researcher provides a definition of supply chain management and briefly discusses its evolution.
2.1.2 Evolution of supply chain management

There is a rapid growth of interest in the management of supply chain among companies around the world. The main reason behind this development is the increasing competitive pressure and a belief that when companies are working together, cooperatively in a supply chain, they can create competitive advantage. As a result, firms have abandoned the old antagonistic approach of doing business in favour of a more integrative management style that is focused on the coordination of activities along the supply chain in order to attain or sustain their competitive position in the world markets (Holmberg, 2000:847).

The basic concepts in the supply chain management, according to Goedhals-Gerber (2010), are physical distribution, business logistics management and supply chain management. These terms are often used in academic and business literature although they have different meanings. The true meaning of each of these terms can be understood when their origins have been established (Goedhals-Gerber, 2010:39).

SCM started around the world with the development of the concept of physical distribution in the 1960s and 1970s. Physical distribution of goods arose when the communities realised that, in order to improve their welfare, they should specialise in particular products. This would then allow them opportunities to trade the surplus that they did not need for their own consumption (Goedhals-Gerber, 2010:39). The concept of physical distribution was focused on the outbound of a firm’s logistics system. As a result, there was a need to include elements such as transportation, warehousing, packaging, materials handling, amongst others, in the outbound logistics (Langley, Coyle, Gibson, Novack & Bardi, 2009:14).

The 1980s and early 1990s marked the deregulation of the transport systems in most countries in the Western world, such as the UK (White, 2009:8). This led to the development of increased interest in the logistics concept. Therefore integrated logistics was added to the physical distribution. This addition meant inbound logistics was added to the outbound physical distribution. The combination of these two focus areas, inbound and outbound physical distribution, came to be known as business logistics. It was through business logistics that
businesses began to realise the opportunities of planning their operations starting with the procurement of the raw materials up until the final products are delivered to the end-users (Langley et al., 2009:15) Organisations were then able to coordinate inbound and outbound transportation movement of goods using larger shipments. At the same time, companies were beginning to realise the importance of international or global sourcing of materials and supplies. Therefore, according to Langley et al (2009), “it became increasingly apparent that coordination between the outbound and inbound logistics systems provided opportunities for increased efficiency and, perhaps, improved customer service”.

Inbound and outbound logistics have become very important, primary components of the value chain, principally because of their value contribution to customers and company viability. It was only during the 1980s and 1990s that companies began to realise that they could achieve even greater advantages, compared to the past, by expanding their logistics processes to include all the firms along the supply chain. This concept became known as SCM (Goedhals-Gerber, 2010:24).

During the 1990s, companies began to realise that supply chain management was a focal point for making organisations more competitive in the global markets. Companies faced intense competition accompanied by increasing logistics and inventory costs and the trend toward market globalization. The challenge the companies had were associated with improving quality, manufacturing efficiency, customer service and new product design and development. (Wisner et al., 2008: 13). SCM thus viewed as the pipeline for the efficient and effective flow of products/materials, services, information and financials from the supplier’s suppliers through the various intermediate organisations to the customers’ customers. The ultimate objective of supply chain management is to improve the competitiveness of the firm in the international market. The supply chain management also enables the business to maintain its position in the market in spite of intensive customer forces and customer needs that change at a rapid rate (Langley et al. 2009:17).
2.1.3 Definitions of supply chain management

There are a number of definitions of SCM available, which include the following that are provided by professional associations:

- The Institute for Supply Management defines SCM as “the identification acquisition, access, positioning, management of resources, and related capabilities the organization needs or potentially needs in the attainment of its strategic objectives” (Cavinato, 2010, n.p.).

According to Wisner et al. (2008), the Supply-Chain Council and the Council of Supply Chain Management Professionals provide different definitions of SCM, but that are closely related.

- The Supply-Chain Council defines SCM as “managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer”.

- The Council of Supply Chain Management Professionals defines SCM as “the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly it also includes coordination and collaboration with channel partners which can be suppliers, intermediaries, third-party service providers and customers” (Wisner et al. 2008: 8). In essence, the SCM integrates supply and demand management within and across the companies.

Goedhals-Gerber (2010:21) defines supply chain as “the total sequence of business processes, within a single or multiple enterprise environments that enable each customer’s demand for a product or service to be satisfied”. As a result, some of the elements that make up a supply chain include purchasing of raw materials, management of the purchased raw materials, conversion of raw materials into finished products (production), inventory management, physical distribution of finished products, marketing and sales, customers and the final consumers (Goedhals-Gerber, 2010:21).
All the definitions mentioned above stipulate the need for an origin as well as a destination between which products flow. Thus the concept that can be adopted is that supply chains start with the raw materials, incorporate a number of value-adding activities and end with the delivery of a finished product to a customer or end-user. Therefore, it can be deduced from the definitions that supply chain management is concerned with the conversion of raw materials that have been sourced from suppliers into finished products that are then channeled through various processes which include storage and warehousing, distribution and delivery, to the end-user. Thus it starts with the demand for products which stimulates the sourcing of raw materials and expands through the manufacturing processes up until the delivery to the end-customer. According to Gianakis and McCue (2012:110), supply chain management therefore encompasses the purchasing, storage, negotiation and administration of contracts, as well as the inspection and assurance of the quality of materials and services required to bring a product to market.

SCM can be broken down into two parts, that is, the downstream supply chain and the upstream supply chain. In the downstream supply chain, the supply chain goes from the firm to the customer. This means that downstream supply chain is concerned with the distribution and delivery of finished goods and services to the customers. The upstream supply chain focuses on the raw materials that are supplied to the organisation from the supplier/s. There are four major partners in the upstream supply chain:

- The firm and its operations management systems;
- The supplier;
- Purchasing; and
- Logistics.

Customers need goods and services to satisfy their requirements, thus driving the upstream supply chain. The supplier has to ensure that these needs are met. The firm’s responsibility here is to deal with the purchasing or procurement management by effectively managing the interface between the suppliers and the firm. The concern of logistics is the flow of materials and products between the various elements of the supply chain (SC) which include production,
warehousing, packaging, distribution, transportation and delivery to the end-user (Lewis, 2005:39). Figure 2.1 below illustrates the complete supply chain.

Figure 2.1: The complete Supply Chain
2.1.4 The importance of supply chain management

Large firms have realised the long-term benefits gained from the practice of SCM. These companies benefit in the areas of lower purchasing and inventory costs, better quality products and higher levels of customer service and sales. There are greater savings when firms along the supply chain which include the firm itself, its suppliers and its customers, are willing to work together. This makes the planning process much easier and productive and improves quality as well as customer service (Wisner et al, 2008:10).

As a result, there is a general move towards integrated supply chain by most firms. Despite that, there are companies, particularly small firms, which are tied to the trend of operating independently. Managers in these firms find it easy to focus on their immediate customers and their internal daily operations. However, these companies are often faced with problems which arise from aspects such as complaints from customers as a result of late delivery of finished products, training of employees, late deliveries from suppliers, creditors to pay, equipment to repair and many others. As a result, these companies do not have enough time to look at such aspects as relationship building and other supply chain efforts (Wisner, Tan & Leong, 2008:10).

2.1.5 Value of information on the supply chain

Organisations are placing more emphasis on information technology to become more competitive. Information technology has a direct and positive impact on organizational performance, internal collaboration and external collaboration. Supply chains operate adequately when there is an efficient and effective information system because the availability and sharing of information benefits all members of the supply chain (Langley et al.2009:191).

Information sharing plays a vital role in demand forecast. It provides the supplier with data to improve its order quantity decisions and to improve its allocation decisions (Cachon & Fisher, 2000:11). Whenever a customer places an order, the supplier uses that information as a predictor of future demand. With this information, the suppliers can update their demand forecast and the corresponding orders placed with their own suppliers. Therefore it is of utmost importance for the buying company to make their actual demand data available to their
suppliers, and also to their upstream tiers of suppliers. Thus, some buyers allow their suppliers to observe actual demand, create forecast, and determine the resupply schedules. (Wisner et al., 2008:464). According to Langley et al. (2009), the availability of information enables the SC managers to gain insights and visibility into the SC activities that occur at distant supplier and customer locations. Customer demand, customer orders, delivery status, inventory stock levels, and production schedules become visible. As a result, SC managers can make effective situational assessment and develop appropriate responses. This information must be accessible, relevant, accurate, timely and transferable. This enables the SCM to make strategic decisions quickly based on accurate data (Langley et al.2009:191).

The SC must therefore develop an information system that manages the product flow, information flow as well as the cash flow from end to end. With information shared electronically, collaborative planning is facilitated that allows organisations to co-ordinate production with demand, reduce inventory and cycle times, manage logistics, improve customer satisfaction and reduce the overall cost. Suppliers, customers and third party providers need, therefore, to share information in order to plan to ensure a more effective, efficient and competitive channel. When information is withheld from other supply chain members, it inhibits the effective operating of the supply chain (Matthee, 2005:76).

2.1.6 Supply chain performance measurement

In order to improve a supply chain’s effectiveness and efficiency, it is critical to have performance measurements. Companies that use performance measurements are likely to achieve leadership positions in their industries and can handle change successfully. It must be recognised that the ultimate goal of a supply chain is to successfully deliver products and services to the end-users, thus meeting customer service requirements. Therefore, the objective of performance measurement is to align strategies, objectives and expectations. In financial management, all performance indicators should measure one of the following principles: appropriateness, effectiveness, efficiency and economy. Performance should also
comply with the following four performance criteria: relevance, reliability, timeliness and value. (Wisner et al, 2008:479).

Value can be measured by using Key Performance Indicators (KPIs) which are: effectiveness, efficiency and economy. Decision-makers in supply chains usually focus on developing measurement metrics for evaluating performance and thus fail to consider the improvement of critical KPIs. The design of most of the metrics is meant to measure operational performance, evaluate improved effectiveness and examine the strategic alignment of the whole supply chain. There are four common categories of individual measures of supply chain performance, namely quality, time, cost and flexibility (Cai, Liu, Xiao & Liu, 2008:512).

2.1.7 Effectiveness, efficiency and economy

Firms always strive to provide goods and services in order to remain competitive in the open market. At the same time, firms also try to provide these goods and/or services in the most efficient manner possible but firms find it difficult to establish whether or not they are operating efficiently. This can only be achieved if the firms evaluate their performance. To evaluate their level of efficiency, it is required of the firms to use, amongst others, the quantitative or the qualitative model as a means of measurement.

When a firm has determined its level of efficiency through measuring, it can establish its performance based on certain criteria. As a result, the firm is able to identify areas of weakness and to make the changes that would bring about positive improvement in the overall efficiency levels of the firm (Goedhals-Gerber, 2010:27). The table below shows the performance management principles of the SCM.
Table 2.1: Performance Management Principles

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<tr>
<td><strong>Effectiveness</strong></td>
<td>It captures the degree to which objectives are achieved.</td>
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<td></td>
<td>It measures the question “Did the job achieve the desired result?”</td>
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<tr>
<td></td>
<td>It concentrates on outputs and outcomes.</td>
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<tr>
<td><strong>Efficiency</strong></td>
<td>It demonstrates value for money and productivity.</td>
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<tr>
<td></td>
<td>It also relates inputs to outputs and outcomes.</td>
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<tr>
<td><strong>Economy</strong></td>
<td>It denotes the cheapest possible option for the production of a chosen input.</td>
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<td></td>
<td>It is concerned with inputs.</td>
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According to Wisner et al (2008), the following are specific performance measures that members of the supply chain need to adopt so that performance can be aligned with the supply chain objectives:

- **Total supply chain management costs**: Included here are costs to process orders, purchase materials, purchase energy, comply with environmental regulations, manage inventories and manage supply chain finance, planning, and information systems.

- **Supply chain cash-to-cash cycle time**: Refers to the average number of days between paying for raw materials and getting paid for the product for the supply chain partners.

- **Supply chain production flexibility**: Refers to the average time required for supply chain members to provide an unplanned, sustainable 20 per cent increase in production. If the supply chain is able to react quickly to an unexpected increase in demand while still operating within financial targets, then it can provide tremendous competitive advantage.
• Supply chain delivery performance: Measures the average percentage of orders for the supply chain members that are filled on or before the requested delivery date. For top performing supply chains, delivery dates are being met from 94 to 100 per cent of the time. For average firms, delivery performance is approximately 70 to 80 per cent.

• Supply chain perfect order fulfillment performance: Measures the average percentage of orders among the supply chain members that arrives on time complete and damage-free. This is widely perceived to be the standard for delivery performance and represents a significant source of competitive advantage for top performing supply chains and their members (Wisner et al, 2008:490-491).

2.1.8 Public sector supply chain management

The concept public sector refers to the government and all publicly controlled, or publicly funded agencies, enterprises, and other entities that deliver public program, goods or services. It thus consists of an expanding ring of organizations with core government at the centre, followed by agencies and public enterprises (Dube & Danescu, 2011:3). The public sector is mainly composed of non-profit making organisations. So the major objective of the public sector is, in principle, not to make profit, but to render services. Therefore, the general concern of the public sector is to deliver services or beneficial outcomes to the public with a social interest rather than a commercial motive of maximising profit. The public sector supply chain provides goods and services that are “non-rival and non-exclusive”. This means that any service provided to one member of society by government does not exclude another member of society. It is the key role of the government to ensure that the disadvantaged members of the society are provided with the necessary support so that they can overcome or minimise the impact of their disadvantages. (Matthee, 2005:3).

SCM can be employed in different industries and sectors (Ambe, & Badenhorst, 2012: 2). In the public sector, the main concern of the SCM is to coordinate all parties involved in delivering the combination of inputs, outputs or outcomes that are meant to meet the requirements of the public sector. Included to these parties are external suppliers, partner organisations, and
internal corporate service units both inside and outside the organization (Pengzhong, 2011:84). The public sector SCM differs from one government sector to another. The SCM in the education sector is focused on streamlining the chain through which learning and teaching materials are delivered to learners (Migiro & Ambe, 2008:231).

The public sector supply chain can be inbound, outbound or both. It is inbound when suppliers deliver goods and services into the public sector department to support their operational requirements, like the supply of textbooks. It is also outbound from the public sector when directly supporting the needs of the public, for example, the training services offered by the suppliers for projects funded by the public sector (Migiro & Ambe, 2008:231). Figure 2.2 highlights this relationship.

When effectively applied, public sector SCM can yield such benefits as inventory reduction, improved service delivery and cost reduction across the supply chain.
2.2 SUPPLY CHAIN MODEL OF THE SA PUBLIC SECTOR

2.2.1 Introduction

When the democratic government took office in 1994 in South Africa, it brought with it a number of budgetary and financial reforms as a means to try to modernise the management of the public sector. These reforms were started in 1995 and were focused on two broad areas, namely the promotion of the principles of good governance, and the introduction of a preference system to address the socio-economic objectives (Amber & Badenhorst, 2011:7). They were meant to make the public sector more people-friendly and sensitive to meeting the needs of the communities it serves. As a result, the Cabinet took a decision to introduce the concept of supply chain management within the public sector. The reason for this was to address inefficiencies that existed in the government method of procurement, contract management, inventory/asset control and obsolescence planning (Jacobson, 2007:7).

The Cabinet of the RSA adopted a new SCM policy in 2003 as a means to replace the outdated procurement policy and provisioning practices used by the government. This was a direct response to the tender system which favoured larger established businesses, making it more difficult for the new businesses to gain entry into the tendering system (Mathee, 2005: 80). The new policy has become an integral part of financial management and conforms to standards as applied throughout the world. This new policy is aimed at promoting uniformity in SCM processes and also at the interpretation of the government’s preferential procurement legislation and policies (Policy Strategy to Guide Uniformity in Procurement Reform Processes in Government, 2003:2).

Currently, the centre stage in the financial management reform process in the South African public sector management is occupied by the SCM. The South African government adopted SCM in its public sector management to ensure value for money, open and effective competition, ethics and fair dealing, accountability, reporting and equity. All these have led to the creation of uniform procurement practices, good governance and enhancement of economic development (Ambe, 2009:434).
Figure 2.3. The model of the supply chain management system of the government according to the National Treasury’s Supply Chain Management guide for accounting officers/authorities:

The four major objectives of the new policy are to:

- transform government procurement and provisioning practices into an integrated SCM function;
- introduce a systematic approach for the appointment of consultants;
- create a common understanding and interpretation of the preferential procurement policy; and
- promote the consistent application of “best practices” throughout the government’s supply chain.

The initial SCM policy was inefficient in terms of procurement, contract management, inventory/assets control and obsolescence. The new integrated supply chain management function is meant to address all these inefficiencies. In this integrated SCM function, value is added at every stage.

2.2.2 SA Public Sector Procurement Reform Legislation

It is anticipated that the SCM in the public sector should link with government’s budgetary planning processes with a strong focus on the outcomes of actual expenditure in respect of the sourcing of goods and services. Therefore, the SCM is designed to impact on the effectiveness and efficiency of the delivery of goods and services to all customers. In the context of public SCM, the concept of “customer” refers to the greater community/society of South Africa which is the potential beneficiary of government delivery processes (Lewis, 2005:57). The end-users, as per this research, are the learners in public schools who are entitled to get learning materials with which to study.

In the private sector, customers use their resources, such as cash, to acquire the best quality goods and services. They therefore enjoy a broad range of choices when they procure goods and services depending on their ability to pay for them. However, the case is different in the public sector. Beneficiaries in the public sector in SA do not have as broad a range of choices as are experienced in the private sector. This is due to the limited resources available in the
government. Therefore, the public sector has to provide quality services and to uplift the standard of living of the disadvantaged communities in SA. These outcomes can be achieved through SCM as a process and the Black Economic Empowerment (BEE) as a vehicle.

2.2.2.1  **Framework for Supply Chain Management**

When the democratic government took power in 1994, it realised the need to transform the legislations on procurement in the public sector. As a result, the regulatory framework of public sector procurement was set up followed by the Framework for Supply Chain Management which became effective on 5\textsuperscript{th} December 2003. This framework had two objectives; firstly, it was aimed at enabling the government to use its purchasing power to accomplish specific socio-economic objectives as set out in the Reconstruction and Development Programme (RDP) in 1994, and the Growth, Employment and Redistribution Strategy (GEAR) in 1996. The second aim was to ensure that the public sector institutions adhered to international best practices in the procurement of goods and services for public consumption (Matthee, 2005:32).

According to Section Three of the regulations in terms of the Public Finance Management Act (PFMA) of 1999: Framework for Supply Chain Management Framework Act, the accounting officer or accounting authority in each unit or division of the public sector is required to develop and implement an effective and efficient supply chain management system in that institution for:

a.  The procurement of goods and services;

b.  The disposal and letting of state assets, including the disposal of goods that are no longer required.

Furthermore, Section Five stipulates clearly that it is the responsibility of the accounting officer or accounting authority of an institution to ensure that a separate supply chain management unit is established within the office of that institution's chief financial officer to implement the supply chain management system of that institution.
According to Section Five of the Framework, it is the responsibility of the accounting officer or accounting authority of the institution to ensure that the officials who implement the supply chain management systems are trained and deployed in accordance with the requirements of the Framework of Minimum Training and Deployment issued by the National Treasury.

2.2.2.2 Preferential Procurement Policy Framework Act 5 of 2000

Section 217 (1) of the Constitution of 1996 indicates that an organ of the state in the national, provincial or local sphere of government has to contract for goods and services. However, when contracting for goods and services, the organ of the state should do so in a system which is fair, equitable, transparent, competitive and cost effective. Furthermore, Subsection 2 of Section 217 of the Constitution allows the organ of the state or state institutions to implement a procurement policy that provides for:

a. Categories of preference in the allocation of contracts;

b. The protection or advancement of persons, or categories of persons, disadvantaged by unfair legislations.

It was on the basis of this background that the Cabinet came up with the Preferential Procurement Policy Framework Act 5 of 2000 (PPPFA). The PPPFA was introduced as a means to address the imbalances that existed among the various population groups in South Africa during the previous system of government. In terms of the Act, the PPPFA is aimed at, amongst others, provisions for encouraging and supporting contracting with persons, or categories of persons, historically disadvantaged individuals (HDIs) by unfair discrimination on the basis of race, gender and disability. This then gives effect to a preference point system in which HDIs receive preferential treatment in the adjudication of tenders (Matthee, 2005:32).

In Section 2 of the PPPFA (2000), it is the responsibility of the state organ to determine its preferential policy and implement it. In terms of Section 2(d) of the PPPFA, the specific goals may include:
i. Contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender and disability;


In order to realise the achievement with regard to the preference system, the PPPFA and its regulations incorporate the 80/20 and 90/10 preference point system.

2.2.2.3 Broad-Based Black Economic Empowerment Act 53 of 2003 (BBBEE)

In 2003, the government passed the BBBEE Act as a means to expand the framework as provided for in the PPPFA. The BBBEE Act also takes into account and applies the codes of good practice for BEE. In terms of the BBBEE, qualification has to be used as criteria for the issuing of licenses, the sale of state owned assets and entering into public-private partnerships. Thus the main focus of the BBBEE is towards the strengthening of government’s legislative and other policy instruments in the achievement of the objectives of the BEE, including the PPPFA and its regulations.

The PPPFA makes provision for the institutions in the public sector to implement a preference system in the allocation of contracts for categories of service providers to advance the interests of persons historically disadvantaged by unfair discrimination. However, unlike the PPPFA, the BBBEE makes use of a balanced scorecard to gauge the success, guidelines and codes including the financial support mechanism for proposed BEE initiatives. Besides the redress of the imbalances of the past through BEE, the BBBEE can also be used as a powerful tool to broaden the country’s economic base and accelerate growth, job creation and poverty eradication (Matthee, 2005:33).

2.2.2.4 Supply Chain Management regulations

The government of the South Africa started to introduce the procurement reforms in 1995. These reforms were directed at two broad focus areas, namely, the promotion of the principle of good governance and the introduction of the preference system to address certain socio-
economic objectives. In 2003, the “Policy To Guide Uniformity in Procurement Reform Processes in Government” was adopted by the Cabinet. The aim of this document was to guide the uniform implementation of Government procurement reform initiatives and the issuing of Regulations in accordance with Section 76 (4) (c) of the PFMA.

According to Section 1.4, the objectives of the policy include the following:

- To give effect to the provisions of the Constitution;
- To give effect to the provisions of the PFMA and the MFMA;
- To transform the procurement and provisioning function in the government into an integrated supply chain management function;
- To introduce a system for the appointment of the consultants;
- To create a common understanding and interpretation of government’s preferential procurement policy objectives; and
- To promote consistency in respect of supply chain policy and other related policy initiatives in government.

It is required, in accordance with Section 36(1) of the PFMA, that every department and constitutional institution has an accounting officer. The Head of the Department must be the accounting officer of the department. Section 38 (1) of the PFMA stipulates the general responsibilities of the accounting officer which include the following:

a. Must ensure that that department, trading entity or constitutional institution has and maintains
   i. Effective, efficient and transparent systems of financial and risk management and internal control;
   ii. An appropriate procurement and provisioning system which is fair, equitable, transparent, competitive and cost-effective.

b. Is responsible for the effective, efficient, economical and transparent use of the resources of the department, trading entity or constitutional institution.

c. Must take effective steps to:
i. Collect all money due to the department, trading entity or constitutional institution;

ii. Prevent unauthorised irregular, fruitless and wasteful expenditure and losses resulting from criminal conduct;

iii. Manage available capital efficiently and economically.

d. Is responsible for the management, including safeguarding and the maintenance of the assets and for the management of the liabilities of the department, trading entity or constitutional institution.

With regard to the assignment of powers and duties, Section 44 (1) of the PFMA indicates that the accounting officer of the department, trading entity or constitutional institution may:

a. in writing delegate any of the power entrusted or delegated to the accounting officer to an official in that department, trading entity or constitutional institution; or

b. instruct an official in that department, trading entity or constitutional institution to perform any of the duties assigned to the accounting officer in terms of this act.

2.2.3 Elements of SCM

In terms of the Treasury Regulation 16A3.2 (d), the SCM system should have at least the following elements, namely, demand management, acquisition management, logistics management, disposal management, risk management and regular assessment of the supply chain performance. Following hereunder is a detailed analysis of each of the elements of the SCM system which are demand management, acquisition management, logistics management, disposal management and the assessment of the supply chain performance.

2.2.3.1 Demand Management

This is one of the essential disciplines in developing the best practices within supply chain management. It is the first phase of SCM. It is during this first phase that research and planning occur. It is during the demand management stage that resources required to fulfill needs are identified in the strategic plan of the institution and are delivered at the correct time, price, place, quantity and quality to satisfy the needs. Resources, therefore, required to fulfill the
needs must be identified in a holistic manner. Therefore, a total needs assessment is required to be undertaken (Jacobson, 2007:55).

It is required by the National Treasury (National Treasury, 2004:25) that the accounting officers and/or authorities understand and utilise techniques that will help them to plan, implement and control activities and the resources to fulfill this obligation need to be clearly analysed. The analysis should include a detailed analysis of the goods, works and services required, such as how much can be accomplished, how quickly and with what materials and equipment. Accounting officers/authorities should ensure that:

- future as well as current needs are understood;
- requirements are linked to the budget;
- specifications are determined;
- the need forms part of the strategic plan of the institution;
- an analysis of the past expenditure may assist in determining the manner in which the institution fulfilled this need in the past;
- the optimum method to satisfy the need is considered, including the possibility of procuring goods, works or services from other institutions (e.g. stationery, printing and related supplies from the Government Printer or furniture from the Department of Correctional Services), or on transversal or ad hoc contracts;
- the frequency of the requirement is specified;
- the economic order quantity is calculated;
- lead and delivery times are identified;
- an industry and commodity analysis is conducted.

Managing demand is a cross-functional exercise which brings the supply chain practitioner closer to the end user and ensures that value for money is attained.

### 2.2.3.2 Acquisition Management

According to Matthee (2005), acquisition management, also referred to as procurement strategies, “is a plan of action with the objective of supplying goods and services by efficiently
applying resources in a manner that would ensure that the purchasing objectives are met and opportunities are utilised by making use of the competitiveness of the market and minimising risks”.

In South Africa, the responsibility of procurement was vested in the Tender Board. So all the procurement processes had to meet the requirements of the Tender Board. Now, with the new policy in operation, the Tender Board has been abolished. Each government institution is now responsible for its own procurement activities within the framework published by the National Treasury.

In terms of the National Treasury’s supply Chain Management Guide to accounting officers/authority (National Treasury, 2004), public institutions are expected to follow the following step-by-step guide to facilitate acquisition processes:

i. **Treasury support:**

When a need arises for goods and services which do not form part of the normal line functions of the institution, or when the institution lacks the capacity to arrange a specific contract, the relevant treasury has to be consulted.

ii. **Delegations:**

Sections 44 and 56 of the Public Funds Management Act (PFMA) make provision for any accounting officer/authority to delegate officials within his/her SCM unit to deal with the SCM processes. The bid evaluation/adjudication committees are recommended to adjudicate and awards bids. These committees may also make recommendations to the accounting officer/authority regarding the awarding of any bid. However, no official may act on his/her individual capacity to take a decision in isolation regarding the awarding of a bid.
iii. **Assessment of the market:**

For goods and services that are outsourced, an investigation has to be conducted to determine whether they exist. This is meant to establish a balanced approach when considering, amongst others, keeping pace with modern technology and development, enabling newcomers/HDI to supply goods and services using labour intensive methods and promoting Black Economic Empowerment (BEE). When assessing the market, consideration should be given to the following elements:

- Benchmarking;
- Total cost of ownership;
- Industry analysis;
- Market characteristics (entry barriers, is the market buyer or supplier driven, market players, market behavior and expenditure analysis).

iv. **Sourcing strategy:**

The primary strategy used in the SA public sector to acquire goods and services is outsourcing. Besides outsourcing, other possible sourcing methods can be considered which include procurement of goods and services through transversal term contracts, getting goods and services from other public institutions at a better price if the goods and materials are available from other institutions who regard them as redundant or obsolete. Whatever sourcing strategy is selected, due cognisance should be taken of the nature of the commodity or service required, the conditions of delivery like just-in-time delivery, the prospective suppliers and the goals to be promoted as envisaged in the Preferential Procurement Policy Framework Act (PPPFA). Some of the sourcing strategies that can be considered for use include the following:

- Utilising transversal term;
- Local versus international sourcing;
- Utilising a paper-based bidding system which may include obtaining quotations, inviting competitive bids, pre-qualification of bidders and two-stage bidding;
- Utilising e-procurement;
- Negotiations.

v. **Establishment of a database of suppliers when obtaining quotations:**

Advertisements for businesses to register as potential suppliers of goods and services to be obtained by means of quotations should be made in the local media that can be easily accessed by all, including smaller businesses. This will help promote BEE and develop HDIs and Small Medium and Micro Enterprises (SMMEs). The accounting officer/authority has to categorise the suppliers according to the goods and services they can supply. A list of suppliers should be regularly updated, at least once per quarter, to allow for all potential suppliers to register. SCM practitioners should be ethical in their operations. Irregularities such as subdividing requirements as a means to avoid the invitation of formal competitive bids should not be practised. When there is a need for goods or services, a minimum of three quotations should be obtained from the suppliers. If three quotations are not obtained, the reason/s thereof should be recorded and approved by the accounting officer/authority. Requests for quotations exceeding R30 000 must comply with the provision of the PPPFA.

vi. **Procurement processes**

In 2005, the National Treasury issued Supply Chain Management Practice Note Number 2 of 2005 (2004:1-2). This note indicates the threshold values for the procurement of goods and services by means of petty cash, verbal/written quotations and competitive bids. In terms of note number 2, the following thresholds need to be applied in the procurement of goods and services, letting or hiring of anything, acquisition and granting of any rights and disposing of any movable state property:

- **Up to a value of R2 000 (VAT included)**
  
  For goods and services up to a value of R2 000, the accounting officer is permitted to procure requirements, without inviting competitive bids or price quotations, by means of petty cash. Therefore accounting officers/authorities have to come up with their own
internal procedures to ensure sound financial management of funds when acquiring goods/services by means of petty cash.

- **Above the value of R2 000 but not exceeding R10 000 (VAT included)**
  When procuring requirements in this threshold, accounting officers/authority are required to obtain at least three (3) verbal or written quotations from, where applicable, a list of prospective suppliers. If the quotation is submitted verbally, the order should be placed against the written confirmation from the selected suppliers.

- **Above the value of R10 000 but not exceeding R200 000 (VAT included)**
  Here the accounting officer/authority has to invite and accept written price quotations for requirements from a number of suppliers whose names are registered on the list of possible suppliers. If there are no suitable suppliers available on the list of registered suppliers, quotations may be obtained from other possible suppliers. Where there are not at least three (3) quotations obtained, the reasons should be recorded and approved by the accounting officer/authority or his/her delegate. For all procurement requirements that are equal to or above R30 000 (VAT included), the accounting officers/authorities should apply the prescripts of the Preferential Procurement Policy Framework Act 5 of 2000 and its associated regulations. However, these prescripts may be applied for procurement with a value of less than R30 000, if and when appropriate.

- **Above the value of R200 000 (VAT included)**
  It is required of the accounting officers/authorities to invite competitive bids for all procurement above the value of R200 000. Goods, works or services may not deliberately be split into parts or items of lesser value to avoid complying with the requirements of the prescribed thresholds. When determining transaction values, a requirement for goods, works or services consisting of different parts or items must as far as possible be treated and dealt with as a single transaction. Competitive bids should be advertised in, at least, the Government Tender Bulletin and in other appropriate media should an accounting officer/authority deem it necessary to ensure greater
exposure to potential bidders. The responsibility for advertisement costs will be that of the relevant accounting officer/authority.

If it is practically impossible to invite bids for specific procurement, e.g. in urgent cases or in case of a sole supplier, the accounting officer/authority may procure the required goods or services, in accordance with the Treasury Regulations 16A6.4 by other means, such as price quotations or negotiations. The reasons for deviating from inviting competitive bids should be recorded and approved by the accounting officer/authority or his/her delegate. The prescripts of the PPPFA 5 of 2000 and its regulations must be adhered to. Figures 2.3 and 2.4 hereunder depict the acquisition procedures.
Figure 2.4: Procedures for the acquisition of goods/services
Figure 2.5: The acquisition procedure for price quotations
2.2.3.3 Logistics Management

The activities of the Logistics Management, in terms of The National Treasury SCM guide for accounting officers/authorities (National Treasury, 2004:86-88) include, amongst others, the coding of items, setting of inventory levels, placing of orders, receiving and distribution, stores/warehouse management, expediting orders, transport management and vendor performance. Hereunder follows a brief explanation of each of these activities:

- **Coding of items**

  The government wants to have the same coding system to be used throughout its agents. By 2004, the National Treasury was in the process of developing a master plan for the integration and replacement and/or enhancement of the financial management systems to support the implementation of the integrated supply chain management system and the PFMA in general. Therefore, the accounting officers/authorities should then not procure or implement new stock control systems or codification systems and should approach the National Treasury prior to making any final decision in this regard. The accounting officers/authorities should then be using the existing codification procedures.

- **Stock levels**

  As a result of protracted lead times and the need to keep specific items in stock, the following should be determined in order to automate the ordering process:
  
  - Which items and quantities thereof to be kept in stock;
  - Minimum/maximum levels to be kept in stock based on consumption figures or inputs from users;
  - Allowing a safety margin (±20%) to be added to the minimum level to cover unforeseen circumstances.
• **Placing of orders**

When a pre-determined stock level is reached or when a request is received for an item which is not held in stock, it is then that an order should be placed.

• **Order processing**

The processing of orders varies depending on whether a contract exists or not. If there is an existing contract, orders should be placed for the item from the contract. Where there is no contract, the accounting officer/authority or his/her delegate should process an order using the price quotation or bidding method of ordering. The suppliers that should be used to provide requirements have to be reliable. The reliability of the suppliers should be monitored in terms of, amongst others,

- delivery reliability;
- quality; and
- quantity.

Should there be problems encountered, a follow up should be made with the vendor. If the problem is with a contract item, it should be reported to the body that arranged the contract.

• **Stores/Warehouse management**

- **Expediting of orders:** All delivery conditions reflected on the order should be complied with. Any failure should be followed up with the supplier immediately.

- **Receiving of items:** When goods supplied are received, they should be verified for quantity and quality against the ordering documentation. It is recommended that a receipt voucher be generated for payment purposes.

- **Storage:** The storing of items should be in compliance with the legal stipulations and safety regulations, such as flammables, poison, explosives, ammunition and weapons. There should be an effective system to locate items in use. Shelf-life
should be taken into consideration. Stock and equipment should be stored properly and arranged in such a way that the checking and handling thereof is being facilitated and the possibility of damage, exposure, deterioration and perishing be limited or eliminated. A proper record of all the applicable assets, or groups of assets, of the institution should be maintained by the accounting officer/authority.

- **Issuing and distribution of items:**
  An issue voucher should be generated for all goods issued. Consumable items should not be recorded after issue. Non-consumable items should be recorded from receipt to disposal. Transit officials should ensure that goods are delivered promptly to the end-user.

- **Stocktaking**
  There should be stocktaking of all assets in stock or on distribution at least once a year. Stocktaking procedures should entail the comparison of stock counted with official records of what should be in stock. Differences should be accounted for.

- **Losses/Surpluses**
  It is the responsibility of the accounting officer/authority to ensure that theft, wastage and misuse of assets are eliminated. To accomplish this, the accounting officer/authority should ensure that the following preventative mechanisms are in place:
    - All damages to and losses of assets be accounted for in accordance with Treasury Regulation 12;
    - Damages and losses be investigated with a view to possible recovery; and
    - Surpluses are taken on record as assets immediately.

### 2.2.3.4 Disposal Management

In terms of Section 7.1.2 of Supply Chain Management: A guide for accounting officers/Authorities (National Treasury, 2004:89), an institution that has an asset which is
unserviceable, redundant or obsolete has to dispose of that asset. It is thus recommended to appoint a specific committee to deal with disposals and to make recommendations with regard to the disposal of any assets. The accounting officer/authority or his/her delegate has the responsibility to consider the recommendations of the appointed committee. If disposal of any asset is approved, any of the following methods may, amongst others, be followed:

- Transfer to another institution in terms of section 24 of the PFMA;
- Transfer to another institution at market related value;
- Transfer to another institution free of charge (bearing in mind that the assets cannot be transferred to a sub-office, school, etc. without the approval of the Head Office of the institution under which jurisdiction such sub-office, school, etc. falls);
- Selling per price quotation, competitive bid or auction whichever is most advantageous to the state, unless determined otherwise by the relevant treasury (requirements as prescribed in Regulations 5 and 6 of the Preferential Procurement Regulations, 2001, should be adhered to);
- Destroying such assets.

### 2.2.3.5 Supply Chain performance

The Supply Chain Management: A guide for accounting officers/authorities (National Treasury, 2004:91) requires that a retrospective analysis be undertaken to determine whether the proper process is being followed and whether the desired objectives are achieved. This will help serve as a monitoring process. Issues to be reviewed are:

- Achievement of goals;
- Compliance to norms and standards;
- Savings generated;
- Stores efficiency;
- Cost variance per item;
- Contract breach, etc.;
- Cost efficiency of procurement process (i.e. the cost of the process itself);
- Whether supply chain objectives are consistent with government’s broader policy focus;
At the completion of each stage of the project, it is recommended that an assessment of the supplier/service provider (including consultants, where applicable) be undertaken and that this assessment should be available for future reference. Accounting officer/authorities should address suppliers who do not perform according to their contractual obligations during the execution of the contract. Such non-performance cannot be deemed as sound reason for passing over the bid of such supplier when adjudicating future bids.

2.2.4 Supply Chain Management of learning materials

2.2.4.1 Background

Learning and teaching materials are very important in the schools. When adequate resources for learning and teaching are made available, they contribute greatly towards the promotion of learners’ achievements. The non-availability or inadequate supply of resources, therefore, causes teaching and learning to be ineffective as it will be difficult for the learners to perform activities that could help improve their academic performances. As a result, learners tend to perform poorly academically, as the only resource of reference is the teacher which is not enough for the learners (Sedibe, 2011:3). In his study, Sedibe (2011) found that there were learners without textbooks and other resources from the government, compelling the educators to photocopy notes for the learners or forcing learners to pay for textbooks.

According to the Policy for Procurement, Supply, Maintenance and Retrieval of Learning and Teaching Support Materials in Schools (2011), it is the responsibility of the state, through the Department of Basic Education, to ensure that learning materials are made available to public schools throughout the country. The Department of Basic Education did not have a specific unit responsible for overseeing the procedures in collating information of all the materials that are
to be bought to cater the different needs of the learners and teachers. As a result, this policy was formulated to streamline all the procedures for procurement, distribution and maintenance of LTSM in accordance with the provisions of the PFMA and the South African Schools Act (SASA). The Policy (2011:4) defines the term LTSM as the materials that are created of high quality and relevancy to meet the teaching and learning of all learners in all schools. The availability of LTSM to every learner helps promote both teaching and learning in all schools.

The LTSMs can be classified into three categories:

- **Textbooks, teachers’ guides and workbooks for learners**: Teachers and learners get information from the textbooks. Textbooks define the sequence of concepts to be assessed or presented. They also define the curriculum planning that would fit in with the various pedagogic approaches.

- **Stationery materials for learners**: These are consumable materials and they include notebooks, scribbling pads, pens, pencils, etc. Even non-consumable items such as mathematical sets, calculators, memory sticks and others are included here.

- **Supplementary resource materials**: These are additional materials for facilitating teaching and learning. They include such materials as science kits, laboratory equipment, dictionaries, globes, electronic media materials compiled in Digital Versatile Discs (DVDs), Compact Discs (CDs), etc.

In South Africa there are still rural schools where learners find it hard to access sources of information. Therefore textbooks serve as the sole source of information available to the majority of learners. As a result, it has become a prerequisite that textbooks be made available for every learner for every subject offered in order to achieve quality teaching and learning. The intention of this policy, therefore, is to streamline all the aspects of budgeting, procurement, distribution and retrieval of textbooks. This will help the department to achieve its goal of providing quality teaching and learning.
2.2.4.2 Organogram for the supply and maintenance of LTSM

One of the core functions of the department is to undertake the process of procurement, distribution and maintenance of LTSMs. The various stages involved in the process and the responsible personnel are as follows:

- Analysis of curriculum needs, estimation and requisition for budget (Deputy Director General (DDG), Curriculum);
- Provisioning of budget (Director: Budget, Chief Financial Officer (CFO));
- Prepare circular for requisitioning of textbooks (Directors, Further Education and Training (FET) & General Education and Training (GET), DDG, Curriculum);
- Send circular and requisition forms per school to regions (Director: Supply Chain, CFO);
- Send circular and requisition forms to schools, collect requisitions and submit to main warehouse (Director: Supply Chain, Regional Directors, DDG, Systems and Planning);
- Screening and verification of requisitions before entering the data (Directors: FET & GET, DDG, Curriculum);
- Collating data from requisitions, processing of orders for procurement, distribution and monitoring of supply, processing of invoices for payment (Director: Supply Chain, CFO);
- Settle claims and report on expenditure (Director: Finance, CFO); and
- Retrieval of textbooks (Regional Directors, DDG, Systems and Planning).

The flowchart as depicted in Table 1.1 represents these processes and the personnel responsible.

2.2.4.3 Distribution of textbooks, workbooks and teacher guides

The following activities are involved in the distribution of LTSM to public schools:

2.2.4.3.1 Analysis of curriculum needs

This process occurs in October of the previous year. According to the Policy (2011), it is the National Department of Basic Education (DoBE) that designs the school curriculum. The analysis of curriculum needs of learners and teachers is based primarily on the catalogue. This process is
the responsibility of the Curriculum division of the DoBE. Therefore, the department nationally is the custodian of catalogues for textbooks and workbooks for learners and guides for teachers. This means that publishers have to submit their text books to DoBE for screening and approval. The directors responsible for the compilation of the various categories of needs are the following:

- **Director: General Education and Training (GET):** compiles the needs of learners and teachers from Grades R to 9.
- **Director: Further Education and Training (FET):** compiles the needs of learners and teachers from Grades 10 to 12.
- **Director: Inclusive Education:** compiles the special education needs of learners and teachers from Grades R to 12.

After the analysis in each directorate, an estimation of the budget for the needs of the following year for all the grades is compiled. The LTSM budget is determined on the basis of these consultations and the Medium Term Expenditure Framework (MTEF) priorities. Then the DDG: Curriculum informs, in writing, the Head of Department about the budget required for the following year. The Head of Department, in consultation with the CFO, decides on the allocation of the budget. The final allocation for the LTSM budget for the year is then communicated to the DDG: Curriculum, in writing, before the end of January. Then, with the budget available, a circular is compiled and sent to the Director: Supply Chain Management. This circular gives guidelines to schools to assist them with their yearly orders for the submission of requisitions.

### 2.2.4.3.2 Compilation of requisitions from schools

The time frame for this process is March every year. The personnel in charge of this process is the Director: Supply Chain Management. This process starts after the guidelines for schools and catalogues of the year are received from the DDG: Curriculum. The process involves the following activities:

- Compiling of requisition forms for every school;
• Duplication of catalogues and circular with guidelines for the compilation of requisitions from schools with submission deadline;
• Distribution of catalogues, guidelines and requisition forms per school to the regions for transmission to school;
• Regions, through circuit managers, are responsible for distribution of the requisitions, guidelines and catalogues to schools and the collection thereof from schools once the requisitions are completed; and
• The completed requisitions forms are returned to the Circuit Managers who verify the forms for their correctness and compliance with guidelines. The forms are then sent to the regional office for submission to the regional warehouses or main warehouses for capturing.

2.2.4.3.3 Verification, capturing and compilation of requisitions data and order placement

The verification of requisitions is the responsibility of the DDG: Curriculum. Once the requisitions from schools are received, the Curriculum Section verifies them to establish if they comply with the guidelines issued and are in line with the curriculum demands. The intention of verification is to confirm if the quantities ordered are genuine and are in accordance with the guidelines issued.

After verification of the data, requisitions are captured. This is the responsibility of the warehouses and regions. After capturing the requisitions, the data is processed to draw profiles per school, circuit, region and province. Once the profiles are drawn, analysis is done and orders are placed, taking into consideration the priorities and availability of funds. The Director: Supply Chain Management is responsible for these processes.

2.2.4.3.4 Receiving, distribution and report of the supply to schools

Textbooks are delivered to the warehouses by the publishers. The Regions are responsible for the delivery of textbooks to the schools. The service providers are then appointed to deliver textbooks from the warehouses to the schools. Once textbooks are distributed to the schools,
the deliveries are verified against the orders, discrepancies are reported and shortfalls are addressed.

When the delivery of textbooks is completed, the service provider submits the invoice to the Supply Chain Management. The invoice is certified against the order issued, processed and is sent for payment. Then the payment process is executed to settle the claim.

2.2.4.3.5 Retrieval of textbooks and disposal of outdated textbooks

The policy stipulates that a textbook should be used for a minimum of three years. At the beginning of each year, textbooks have to be supplied to the learners. The textbooks supplied to the learners are to be retrieved from learners at the end of the year for distribution in the following year. The retrieval of textbooks is the responsibility of the principal. In order to be effective with regard to the retrieval of textbooks, each school should have a textbook retrieval policy. The regions should monitor the retrieval of textbooks in all schools. Regional Directors should report to the DDG: Systems and Planning and the HOD on the retrieval rate of textbooks in every school.

If there are textbooks that are no longer relevant to the curriculum and need to be disposed of, the principal should submit a request to dispose of these textbooks together with an inventory to the regional director. The inventory of textbooks shall be approved by Chief Education Specialist in charge of the curriculum in the region.

2.2.4.4 Supply Chain Audit

In order to analyse the supply chain of LTSM in public schools in Limpopo Province, the researcher will adopt the supply chain audit method. Audits of supply chains are crucial because they identify areas of vulnerability, strengths, weaknesses, where responses are lacking, where safeguards or alternative resources are missing and how the supply chain benchmarks against the best in class companies. Therefore, the supply chain audit will enable the researcher to detect if there is any area along the supply where there is a bottleneck.
The researcher then performed the mapping of the supply chain of learning materials from the point-of-origin to the point-of-consumption. The map enabled the researcher to identify the paths of materials and information from source to the final consumer. Mapping also helped the researcher to identify the different companies and linkages that make up the supply chain.
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 RESEARCH METHODOLOGY

There are two main types of research methodologies, namely, qualitative research and quantitative research.

The qualitative method: This method is selected taking into consideration the need to provide guidance and direction about the future of supply chain management. According to Zacharia, Sanders & Fugate (2009), the researcher conducts qualitative research when he/she wishes to explore the concepts in raw data and to organise these concepts and relationships into themes. Qualitative research seeks a variation of ideas of concepts and phenomenon as opposed to the variance of people. When a researcher conducts a qualitative research, he/she is interested in the similarities and differences between the respondents to the interview, the interviewees’ thoughts, attitudes, and emotions about a particular phenomenon. Therefore, in qualitative research, the researcher seeks to establish and develop a body of knowledge about a particular research interest. Thus, it seeks to capture the individual’s point of view and secure rich descriptions (Zacharia et al, 2009:3).

The quantitative method: According to de Vos et al. (2008), a quantitative research may contain, amongst others, the following characteristics:

- It is highly formalised and explicitly controlled compared to the qualitative research method;
- Its range is more exactly defined than the qualitative approach; and
- It is relatively close to the physical sciences.

A research is divided up into the following sections (Jacobson, 2007:71):

- **The purpose of the research:** The idea behind conducting the research;
- **The process of the research:** The manner in which data is collected and analysed;
- **The logic of the research:** Moving from general to specific; and
• **The outcome of the research**: whether a particular problem is to be solved or a general contribution to knowledge made.

The design of this research is empirical which means that it is based on a case study. For this study, only empirical qualitative supply chain audit methodology is used. According to Jacobson (2007) some of the salient aspects of case study include the following:

• A case study is an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident;
• The aim of case study research is not only to explore certain phenomena, but also to understand them in a particular context;
• The questions that are likely to be used in a case study are “how” and “why”. These questions require explanations;
• A case study illuminates a decision or set of decisions—why they were taken, how they were implemented, and with what result;
• The case study as a research strategy comprises an all-encompassing method with the logic of design incorporating specific approaches to data collection and data analysis. Therefore, it can be said that case study is neither a data collection tactic nor merely a design feature alone, but a comprehensive research study;
• Case study research uses multiple methods for collecting data which may be both quantitative and qualitative;
• A case study is typically used when contextual conditions are the subject of research.

Jacobson (2007) went on further to outline the types of case studies as follows:

• **Descriptive case studies**: In this type of case study, the objective is restricted to describing current practice;
• **Illustrative**: Here the researcher attempts to illustrate new and possibly innovative practices adopted by particular companies;
• **Experimental case studies:** Here the researcher examines the difficulties in implementing new procedures and techniques in an organisation and evaluating benefits; and

• **Explanatory case studies:** Here the researcher uses the existing theory to understand and explain what is happening (Jacobson, 2007:18).

The study entails a lot of reading and gathering of information on the practices followed in the Limpopo Provincial Department of Education with regard to the supply chain of learning materials.

### 3.2 SAMPLING

For this study, purposive sampling method was used. In purposive sampling method a researcher can select respondents or sites guided by certain factors (Themana & Mabasa, 2002: 275). In this study, people for interviews were sampled from the Limpopo Province Department of Education offices, Vhembe District offices, schools within Vhembe District and suppliers.

The focus for this research was on three secondary schools in Vhembe District of the Limpopo Provincial Department of Education, Vhembe District offices Limpopo, Provincial Department of Education offices and managers of companies that supply learning and teaching materials. The following were selected for interviews:

a. Three principals, one per school, in their capacities as accounting officers at the level of the school;

b. One educator (official) per school who is responsible for requisition, receiving, distribution and retrieval of teaching and learning materials, to and from learners. This made a total of six educators (officials) from the three schools who were sampled for interviews;

c. Ten learners per school, with two learners from each grade, that is, from Grade 8 to Grade 12. Therefore each grade was represented so that an holistic view of the problem regarding the distribution of books could be gained across these grades;
d. One official from the Vhembe District offices who is in charge of the supply chain management office (Learning Materials);

e. Two officials who are in charge of the warehouse in Vhembe District which is situated in Thohoyandou;

f. The Limpopo Province Supply Chain Manager (Learning Materials);

g. Three officials who are based in the Limpopo Provincial central warehouse;

h. A manager of a company that supplies learning and teaching materials to schools on behalf of the Limpopo Provincial Department of Education.

Table 3.1 below shows a research methodological framework that helped to clarify the research process and gives an overview of data collection methods and sampling in the intended sequence.

Table 3.1: Research Methodological Framework

<table>
<thead>
<tr>
<th>Officials</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Chain Manager (Learning Materials)</td>
<td>1</td>
</tr>
<tr>
<td>Warehouse and Distribution officials</td>
<td>3</td>
</tr>
</tbody>
</table>

Vhembe District

| Supply Chain Manager (Learning Materials) | 1      |
| Warehouse and Distribution officer      | 2      |

Schools

| Principals                          | 3 (1 X 3) |
| Educators (Officials)               | 3 (1 X 3) |
| Learners                           | 30 (10 X 3) |

Suppliers

| Company A (Manager)                | 1      |

Source: Researcher’s table
Of the three schools that were selected, two are from historically disadvantaged communities. Schools from these communities are attended by black learners, whose parents may be poor, illiterate, unemployed, with little or no income at all.

The third school is a former Model C school. Former Model C schools are those schools that catered for learners from well-to-do families. These schools were dominated by learners from White, Indian, Coloured and a few Black communities who are economically active, literate and earn higher income. These schools are multi-racial. Former Model C schools offer a better education than the other two schools selected even though the department is trying by all means to bring parity to the educational system.

3.3 DATA COLLECTION

In order to obtain detailed in-depth data for a research, the researcher should apply data collection methods which involve multiple sources of information that are rich in context. Jacobson (2007:71) identifies three methods of data collection, namely:

- Personal interviewing;
- Telephonic interviewing; and
- Self-administered questionnaires/surveys.

Besides these, other techniques that can be applied may include documents, observations or archival records (de Vos et al, 2008:272).

The researcher in this study used face-to-face interviews with the respondents as a means to collect data. The researcher made use of the one-on-one interview to as a means to collect information when interacting with the Vhembe District Supply Chain official, Principals of schools, educators or officials in charge of distribution and retrieval of textbooks at the schools, Limpopo Province supply chain official and manager of the supplier company. There are various types of one-on-one interviews which include the following: the unstructured one-on-one interview, the semi-structured one-on-one interview and the ethnographic interview. The unstructured in-depth method of interviews was applied in this research. According to de Vos et
al (2008), unstructured or in-depth interviews enable the researcher to understand the experience of other people and the meaning they make of that experience (de Vos et al, 2008:293).

Prior to the interviews, the researcher prepared questions to guide the interview session. These questions are attached hereto as annexures. The interviews, however, were not limited to these questions as unplanned discussions took place. These interviews enabled the researcher to elicit views from people who are direct stakeholders in the supply chain of learning materials to schools, similar to the study done by Themana & Mabasa (2002). For this study, the respondents include learners, educators, principals, a supply chain manager from one district office of the Department of Education, a supply chain manager from the Provincial Department of Education, officials from the warehouse in both the province and Vhembe District and managers of selected suppliers who were part of the tendering system.

The researcher recorded the interviews on a tape recorder and not a video recorder because the participants preferred to be tape recorded rather than video recorded. All the tape recordings are available and can be submitted on request. The outside cover of each cassette used for tape recording shows the institution where the recording took place and the date on which it was made. These are safely stored by the researcher.

### 3.4 DATA ANALYSIS

There are two approaches to data analysis. In the first approach, data analysis takes place at the same time that data is collected at the research site. In the second approach, data analysis occurs away from the research site. This second approach can be conducted prior to the site visit and also after data has been collected (de Vos et al, 2008:335). In this research, data analysis was undertaken after the data had been collected. All the data was labeled according to dates, places and interviewees to facilitate rapid retrieval. The data was recorded by means of a tape recorder. In order to safeguard the information against irregularities such as loss or theft, the copies have been put away for safe-keeping.
3.5 LIMITATIONS

The researcher came across certain limitations in this study. As the study could not cover all the schools in the Limpopo Province, Vhembe District officials and schools were selected as well as the Limpopo Provincial officials and the suppliers. So the findings of this study are limited to the few sampled schools in Vhembe.

The population grouping in Vhembe is for the most part blacks, with few whites, Chinese and Indians. There are very few former Model C or multi-racial schools. This posed a challenge to the researcher who managed to conduct interviews in only one multi-racial school because the other schools are situated very far from the researcher’s reach.

Currently, most of the departments in Limpopo Province are under the administration of the National Government as a result of alleged mismanagement of public funds. The Limpopo Provincial Department of Education is one of the departments that are under administration. The researcher was given permission to proceed with the research in the provincial offices and in Vhembe District, however, that was before the revelation of the misappropriation of public funds by the departmental officials. Once this surfaced, many of the institutions were unwilling to cooperate in the research, fearing victimisation, and therefore the researcher was refused permission to go through some of the documents necessary for supply chain management verification.

The researcher wished to use a video-recorder to record the interviews and observations and cameras to take photos but the participants refused video-taping and photographing and therefore the researcher had to rely only on the tape recorder when collecting data. The researcher was not given the list of publishers (suppliers) from which the department purchases textbooks but the researcher found publishers who were willing to be interviewed. On the basis of all the above factors, all the interviewees opted to remain anonymous. Even the schools did not want to have their names mentioned.
Participants were not coerced to take part in the interviews. The educators provided the researcher with learners for interviews. Other participants in the interviews took part voluntarily and none of the participants left before the end of the interviews. The participants were responding to the interviews perfectly. In fact, for the most part, the interviews were more like discussions. Throughout the interview sessions, the behaviour of the participants was quite good. It was, however, difficult to meet the key players for this research who are officials in charge of the supply chain in the province and managers of companies that supply learning materials to schools. To overcome this limitation, the researcher requested the provincial offices to furnish him with the list of the names of suppliers in order to visit these suppliers and to point out the importance of the research to them as members of the supply chain. However, the provincial officials refused to hand over the list of publishers and it was only through individual efforts that the researcher managed to get an interview with the manager of one publishing company.

3.6 ETHICS

During the collection of information, the researcher adhered strictly to the code of ethics. Before commencing with the research, permission was first applied for and granted by the Department of Basic Education in Limpopo. The case was also the same in the Vhembe District. Even before getting to the schools, the researcher first sought permission from the circuit managers down to the principals of schools. With the province, districts and circuits, written permissions were given and the schools gave verbal permission only.

The selection of learners to be interviewed was conducted by the school principals through delegation. This was also the case with the educators or officials in charge of the supply chain of textbooks at school level. All participants in the interviews took part freely and voluntarily. Before the start of the interviews, the researcher outlined to the participants what the interviews were about and the benefits that could be derived from these interviews as well as showing that these interviews would be recorded, and the purpose of recording. The researcher also notified the participants of their privilege not to take part in the interviews if they preferred
not to. The participants were also informed of their right to remain anonymous. In this regard, all participants opted not to have their identities revealed due to the prevailing circumstances in Limpopo Province around the supply of textbooks to schools.
CHAPTER 4: RESEARCH FINDINGS

4.1 INTRODUCTION

This chapter outlines, in summary form, the findings of the research. It also gives an indication of the participants in the interviews, as well as the levels of the supply chain they represent. These interview participants were asked questions by the researcher. These questions only served as guidance as the interviews developed into discussions, with the participants sharing their experiences and their opinions. The full interview questions are attached hereto as annexures.

4.2 INTERVIEW QUESTIONS

The researcher compiled questions for interviews as a first step in the collection of data. These questions were aimed at the gathering of information. The questions varied according to the levels of people to be interviewed. These questions were, as already mentioned, targeted at schools, Vhembe Education District offices, Limpopo Provincial Department of Basic Education and suppliers (publishers) of textbooks. The interviews were not limited to the compiled questions only. These questions served to guide and give direction in order to gain the information needed. Participants were at liberty to provide any information they regarded as relevant and necessary for the study even though it was not included in the questions. These questions are to be found in annexures 1, 2, 3 and 4.

Table 4.1. below illustrates the components of the supply chain that supplies textbooks to schools that were interviewed for this study:
Table 4.1: Members of the supply chain interviewed

<table>
<thead>
<tr>
<th>MEMBERS OF THE SUPPLY CHAIN OF BOOKS</th>
<th>PURPOSE OF INTERVIEWS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Provincial Procurement Management</strong></td>
<td>To find out the following:</td>
</tr>
<tr>
<td>a) Provincial Supply Chain Manager</td>
<td>i. Textbooks demand management</td>
</tr>
<tr>
<td>b) Warehouse staff</td>
<td>ii. Purchasing of textbooks</td>
</tr>
<tr>
<td></td>
<td>iii. Relationship with suppliers (Publishers),</td>
</tr>
<tr>
<td></td>
<td>iv. Warehousing</td>
</tr>
<tr>
<td></td>
<td>v. Distribution of textbooks to districts</td>
</tr>
<tr>
<td></td>
<td>vi. Management of transport service providers</td>
</tr>
<tr>
<td><strong>District Supply Chain Manager</strong></td>
<td>To find out the following:</td>
</tr>
<tr>
<td>a) District Supply Chain Manager</td>
<td>i. Textbooks demand management</td>
</tr>
<tr>
<td>b) Warehouse staff</td>
<td>ii. Management of supplied textbooks</td>
</tr>
<tr>
<td></td>
<td>iii. Management of warehouses</td>
</tr>
<tr>
<td></td>
<td>iv. Distribution of books to schools</td>
</tr>
<tr>
<td><strong>Schools</strong></td>
<td>To establish the following:</td>
</tr>
<tr>
<td>a) Learners</td>
<td>i. Availability of textbooks at schools</td>
</tr>
<tr>
<td></td>
<td>ii. Distribution of books to learners</td>
</tr>
<tr>
<td></td>
<td>iii. Retrieval of books from learners</td>
</tr>
<tr>
<td></td>
<td>iv. Impact of shortage of textbooks to learners</td>
</tr>
<tr>
<td>b) Educators (Administrators) who receive delivered books</td>
<td>To establish the following:</td>
</tr>
<tr>
<td></td>
<td>i. The supply of books in terms of quantity</td>
</tr>
<tr>
<td></td>
<td>ii. The management of supplied books</td>
</tr>
<tr>
<td>c) Principal (The accounting officer)</td>
<td>To establish the following:</td>
</tr>
<tr>
<td></td>
<td>i. The procedure for books requisitions</td>
</tr>
<tr>
<td></td>
<td>ii. Communication with senior officers</td>
</tr>
<tr>
<td></td>
<td>iii. Management of supplied books</td>
</tr>
<tr>
<td><strong>Suppliers (Publishers)</strong></td>
<td>To establish the following:</td>
</tr>
<tr>
<td>a. Manager</td>
<td>i. The publisher selection procedures</td>
</tr>
<tr>
<td></td>
<td>ii. Relationship with the department</td>
</tr>
<tr>
<td></td>
<td>iii. Communication with the department as well as the schools</td>
</tr>
<tr>
<td></td>
<td>iv. Payment of publishers.</td>
</tr>
</tbody>
</table>

Source: Researcher’s table

### 4.3 INTERVIEWS AT SCHOOLS

The researcher conducted interviews at three schools in Vhembe District. However, due to the prevailing circumstances around the supply of learning materials to schools in Limpopo Province, all the schools opted to remain anonymous. It is for that reason that the researcher
refers to the three schools as School A, School B and School C. Of these three schools, two are from the deep rural communities which are characterised by illiteracy, poverty, unemployment and many other problems. These schools will be referred to as School A and School B. The remaining school is a multiracial school that accommodates mainly learners from the literate, and economically active and higher income families. The researcher will refer to this school as School C.

4.3.1 School A

School A is a secondary school that is situated on the outskirts of Thohoyandou. It is in a rural community that falls under Luvuvhu Circuit. It caters for learners from Grade 8 to Grade 12. Ten learners, one educator in charge of receiving of learning materials as they are supplied, and the headmaster were interviewed. The enrolment at this school is not very high. It is for that reason that the school does not have an administrator. As a result, the school has entrusted one educator with the responsibility of controlling stock, including textbooks. This educator is responsible for receiving, recording and managing stock, including textbooks.

This school does not have a library and is located far away from the nearest public library. The majority of the learners do not have access to computers in order to access information from the internet. So, to these learners, the major source of information is from the textbooks and they depend on the supply of textbooks by the department. Failure by the department to supply the right books at the right time and in the right quantity has a devastating impact on the performance of these learners. The dominant factor that contributes towards this failure is the supply chain management of learning materials to the schools, and subsequently the learners, who are the end-users. At this school, the researcher interviewed ten learners, an educator in charge of the receiving of books supplied by the department and the principal.

Record-keeping: There is one educator entrusted with the responsibility of keeping the school stock register. This educator receives all the books delivered by the department and records them in the stock register. However, this educator has never been trained on the procedures for
the receiving, distribution and retrieval of textbooks and fails to understand some of the concepts that are used in her responsibility as stock register controller.

After the delivered books have been recorded, they are then given to the subject educators to distribute to the learners. Each book is allocated a number. When learners are given the books, this number is recorded. These records should be given to the educator in charge of the school stock register who controls the distribution of books to learners, however, not all educators submit the book distribution records to him/her and therefore the majority of subject educators keep these records themselves. This could lead to some educators misplacing the records.

**Receiving and distribution of books:** It is the responsibility of the subject teachers to distribute books to learners and each educator distributes books for his/her subject/s. However, these educators are not trained for the distribution and retrieval of textbooks to and from learners. At this school, the researcher found that there are shortages of textbooks, such as Life Science books in Grade 11 and Mathematics Literacy which forces learners in Grade 11 to share the books that are available with the Grade 12 learners.

The available books are distributed to learners at schools in the first week of the academic year, however, due to the high number of books to be distributed to learners by subject teachers, this process takes some time to get completed. As a result, it consumes time stipulated for teaching which is against the call by the National Minister of Basic Education that teaching and learning should commence on the first day of the academic year.

When there are shortages of books, the school has to complete a requisition form obtained from the provincial offices via the district and circuit offices to apply for top-up books. The requisition form is sent to the school in March and is accompanied by a circular together with a catalogue of books. The circular provides guidelines on how the requisition form should be completed. The catalogue contains a list from which to select books. The educators from the different departments select the books to be filled in on the requisition form. After completing the form, it is sent back to the province for capturing and the placement of an order for books with the publishers.
In the past, the department ensured that the ordered books were supplied to the school. When the school had an oversupply of the books ordered, these surplus books were stored in case learner enrolment in that subject increased in the following year. That is why there are unopened boxes of books at the school. A problem arises when there is a change in curriculum such as a shift from the National Curriculum Statement (NCS) to the Curriculum and Assessment Policy Statement (CAPS) and the books are no longer relevant to the new curriculum which amounts to unnecessary costs.

The position is different now. The department no longer supplies books as ordered and the school encourages learners to buy the books themselves or the school buys a sizeable number of books for the learners to share. If the department does deliver books, they are often delivered to the school in mid-year. These books are also distributed to learners as soon as they are received at the school but often the books that are supplied late are different from those being used for that subject. For example, in 2012 the Grade 11 learners were given the “Geography For All” textbooks at the beginning of the year but, during the course of the year, the “Focus Geography” books were delivered to the school. The problem here, as the researcher has found out, lies in the capturing of the requisition forms from schools.

**Verification of shortages:** Departmental officials do not visit the school to verify the shortages of books and an audit of available stock at the school does not take place to ascertain the requirements. Thus the department cannot determine, with certainty, shortages or surplus of books and depends on the school to indicate these. As an example, the school had 57 Grade 10 Tourism learners in 2012 but the school was supplied with over 100 books. This over supply of textbooks can be attributed to either of the following:

- Incorrect capturing of requisition in the provincial offices, or
- Wrong packaging of books in the district warehouse.

While the school had those surplus books in boxes, it also had a shortage of 38 Agricultural Science books for Grade 10. Despite that, the department does not send officials to verify the correct delivery of books and, as a result, resources are not optimally distributed.
The situation is made worse by a lack of communication between the department and the school. The department does not have any other way to determine enrolment at the school because, although the school is provided with the computer by the department, the school still lacks the facilities to enable it to get connected to the internet. Thus the school cannot communicate electronically with the department regarding important information, such as learner enrolment and assets, books in particular, which are available at the school.

**Retrieval of textbooks:** At the end of the year, learners are expected to return the books that were given to them at the beginning of the year. A learner who fails to return a book has his/her report withheld until a lost book is replaced. However, this practice of withholding the reports of the learners due to unreturned books is contrary to the Constitution of the country. It is very problematic when a book that is shared by two or more learners is lost because none of them want to accept blame for the lost book. This can lead to conflict between the learners who must contribute equally towards the replacement of the lost book.

Educators may lose the records which they have used to record the books given to learners. When this happens, it becomes difficult for the educators to identify learners who were given books but have not returned them. This creates problems for the following year as there will be a shortage of books. Another point of note that contributes towards the shortage of books at schools is drop-outs. These learners receive books as they are distributed at the beginning of the year, however, during the course of the year, they stop attending the school. When this happens, there is no follow-up to get back the books the drop-outs received at the beginning of the year.

The lack of accountability is another factor that contributes towards shortages of books. While it is the educators who distribute books to the learners, these educators do not have to account for any book that is not returned, neither does the principal. The department requires that each and every school needs to have a Book Retrieval Policy that is drawn up by the School Governing Body. However, this school does not have this policy.
Impact of book shortages on learners: Due to the shortage of books, learners spend much of their study time writing notes on matters that are available in the books. Educators also make photocopies of the books for learners without books, consuming teaching time as well as time for lesson preparations. Thus learners do not have enough time to study. When given tasks to work on at home, learners without books are forced to do their homework at school during study time. If learners share books, it is problematic when it comes to studying at home. When one takes a shared book home, it means that other learners will not have the chance to study that subject on that day. If a learner with a shared book is absent from the school, the other learners will also be without that book for that day so it is clear that a shortage of books is a barrier to effective learning.

A shortage of books may lead learners to adopt unacceptable behaviour such as stealing books from other learners. This occurs particularly before learners write a test or an examination. A learner may realise that, because they are sharing books, he/she will not have the opportunity to study. Under these circumstances, learners may resort to stealing books from other learners in order to study with them. Then learners from whom the book is stolen will have nothing with which to prepare themselves for the coming test or examination. As a result, these learners end up performing poorly in these tests and examinations. The most critical position exists when the theft of the book occurs early in the year. Learners fail to report this to their parents immediately when a book is stolen while there is still time to get another book to study. Instead they wait until the end of the year in order to get the year-end reports. Replacing a book at this stage no longer serves any purpose as these learners have been without a textbook for the greater part of the academic year. Given this position, there is little chance for these learners to perform satisfactorily at the end of the year.

4.3.2 School B

This school is situated next to Thohoyandou. Most of the learners at this school are from Thohoyandou town. The majority of these learners are from middle class families. The school falls under Mvudi Circuit. Learners at this school are better off than School A as they can access
the internet for study purposes. However, the most important sources of information for learning purposes remain the textbooks which are supplied by the department. The learner enrolment at this school is higher than School A. Even though the department does not provide the school with an administrator, the school has appointed someone to assist as an administrator. This administrator is remunerated from the little allocation that the school receives from the department as norms and standards. Norms and standards refer to the amount of cash that is allocated to each school by the Department of Basic Education to enable the schools to run their activities. As part of his responsibilities, the administrator receives supplies from the department, including books and records them properly. People interviewed at this school were the principal and his assistant, the administrator and ten learners.

**Receiving and distribution of books:** One of the important responsibilities of the administrator is to receive books when they are supplied by the department. The school may receive books that were not ordered, in terms of titles, although they are of the correct grade and subject. These books are not returned as the schools believe that if they return books they will not get others. The school simply keeps the books in the boxes. These books may be used when the available books are no longer enough for the learners. As the delivery of books is not verified, it is unlikely that the department will realise the availability of these surplus books.

After receiving the books, they are stamped and given to the subject teachers who distribute them to learners. Learners are given books at the beginning of the school year and this process takes about a week to complete. When learners receive books from the educators, whether as individuals or as groups who share them, this is recorded. The educators keep these records.

**Book shortages:** There are shortages of textbooks in this school for most of the subjects. In Grades 8 and 9, of the nine subjects that learners study, there are no textbooks for seven of these subjects. In Grades 10 and 11, learners study seven subjects but the school does not have textbooks for some of these subjects and learners share the few books that are available. Due to the shortages of books, educators make sure that every learner has access to all the required books by making the learners share the books. Educators also provide learners with notes with
which they can study. Other learners, depending on affordability, buy the books themselves. Faced with the shortages of books, the school has to complete the requisition forms that are sent to all the schools together with the circular and the catalogue. The circular provides guidelines on how the requisitions should be completed. The catalogue enables the subject educators to select books that they want to order as top-ups. The requisition forms are then sent back to the provincial offices for procurement. This process happens during the course of the year. However, even when an order for books is made through the requisition forms, top-up books are not supplied to this school.

**Impact of book shortages:** Sharing of books has severe impact on the performance of the learners. When learners sharing a book are given tasks to do at home, one learner is compelled to do the homework at school so that the other learner can take the book home to complete the task. Thus one learner’s study time is compromised. When there is a test to be written, it is one learner who has the chance to take the book home to study. The other learner will, as a result, not have enough time to prepare for the test. This affects the academic performance of the learners.

But the department, through the district and the circuit, does not visit the school to verify the shortages. It only relies on the information as supplied by the school manually. This information system is very slow and not effective. The school has a computer but lacks a connection to the internet.

**Retrieval of books:** At the end of the year, the learners are expected to hand back the books given to them at the beginning of the year. The subject teachers have to retrieve books from the learners. However, not all books are returned as some are lost or damaged. A learner who has lost a book pays to the school an amount equivalent to the cost value of the book. If a lost book was shared, the learners sharing the book have to contribute equal amounts to replace it. It is not certain whether the amount paid by learners to the school to replace lost or damaged books is indeed used for its intended purpose which is to replace those books. But, despite the payments, shortages of books still remains a problem.
If the books which learners have received are lost, the educator concerned simply takes a new book and records only the books that are returned. Books that have become irrelevant to the curriculum are taken to the library. These books are used as references.

The educators who distribute and retrieve books to and from learners are not trained for this and the school does not have a book distribution and retrieval policy.

Communication between the school and the district as well as provincial officers, with regard to the requisition for books, is facilitated manually through the issuing of circulars and requisition forms. The use of information technology to requisition books is not used.

### 4.3.3 School C

School C is a former Model C school. It is a multiracial school which is located within a walking distance from Thohoyandou town. It falls under Mvudi Circuit. It is a comprehensive school that caters for learners ranging from Grade R to Grade 12. The school has an administrator who has been appointed by the department and the school has a library. The learners who attend at this school are from well-to-do families whose income is higher than those at Schools A and B. This means that parents of these learners are literate, higher income earners and have a better understanding of the education system in South Africa. The means of communication between the school and the circuit, district and provincial offices is through manual circulars but the school is able to communicate with the department electronically. This enables the school to communicate effectively and swiftly.

The researcher interviewed the learners, the administrator who is in charge of the receiving, distribution and retrieval of textbooks and a representative from the principal’s office. The researcher interviewed learners from Further Education and Training (FET) phase which is from Grade 10 to Grade 12.

**Receiving of textbooks:** It is the responsibility of the administrator to receive books when they are delivered to the school by the department. When receiving the books, the administrator verifies the quantity of the books delivered against the invoice to verify if the supply is correct.
She does not, however, use copies of the requisition forms to check if the books supplied are as per requisitions. This is sometimes the reason behind the delivery of wrong textbooks to the school. Although the department does not train these officers with regard to the procedures for receiving textbooks, the principal does conduct in-house training to the administrator for this.

**Distribution of books:** At this school, learners are given textbooks at the beginning of the academic year. When the school receives new books from the department, these books are stamped and given to the subject teachers. Then the books are distributed to learners by the subject teachers. In the case of old books, the educators take the books from the library where they are kept. Teachers record all the books that are given out to learners. These records are kept by the educators. This school also experiences shortages of books which compels the learners to share the books. Due to the fact that learners at this school are from higher income families, learners who do not want to share books with others buy their own books.

**Shortage of books:** Although the school does experience shortages of textbooks, this does not have as much impact as in other public schools as learners can afford to buy books for their own use. Given this shortage of books, the school orders the books as top-ups using the requisition forms. The forms are sent to the schools by the provincial offices via the district and circuit offices. The forms are received together with the circular that explains how the forms are to be completed. A catalogue is provided from which the school selects the books it needs. The department does not send officials to the school to verify the shortages. This shortage of books persists even when the supplementary books have been ordered and delivered because the department supplies fewer books than the amount ordered. In certain instances, the books that have been ordered are not supplied at all. Even when they are supplied, they reach the school late.

The department also delivers the wrong books to the school. The school caters for all grades which makes it a combined school with English as the first language. However, the school sometimes receives books for English as first additional language, and not as first language or books for Xitsonga are delivered, while the school does not have Xitsonga as one of its subjects.
The books delivered to the school bear a bar code. Occasionally, the books supplied have a bar code that is different from that on the invoice. This shows that the books delivered to the school are meant for another school. In the Further Education and Training (FET) phase, the school sometimes receives books that the educators have not ordered. These books are not returned. This is because the school is not certain that the correct books will be delivered if they return the incorrect books supplied. In addition, the number of books that is supplied is often less than what has been ordered.

**Retrieval of books:** Books are retrieved from the learners at the end of the year. The subject teacher collects the books from the learners. A learner who fails to return a book has to replace it by buying the book from the local bookshops. If the learner cannot find the replacement book in the local bookshops, he/she has to make a cash deposit into the bank account of the school. The school first requests a quotation for the books given to learners which establishes how much a learner should deposit for the lost book.

### 4.3.4 Conclusion

Learners at schools are the end-users of the supply of textbooks. The effectiveness of the supply chain of learning materials to schools is realised only when each learner at each school has all the books for each and every subject he/she studies. The researcher has found that there is generally a shortage of books in these three schools. Any shortage is an indication of a leakage in the supply chain. This position is less evident in the former Model C school because parents with children this school can and are willing to provide books for their children. In summary, some factors that contribute towards shortages of books in schools include the following:

- Under supply of textbooks by the department;
- Late delivery of books;
- Delivery of incorrect books to schools;
- Loss of records of the distribution of books to learners by educators;
- Lost books;
- Damaged books;
- Drop-outs not returning books;
- Money meant to replace lost or damaged books not used for that purpose; and
- Lack of accountability on the part of subject teachers and principals for the lost books.

All these factors, together with many others, contribute greatly towards the shortage of books at schools. The ultimate result of the shortage of textbooks is poor academic performance by the learners.

### 4.4 DEMAND MANAGEMENT: VHEMBE DISTRICT

The district does not forecast the demand for books. It relies on information supplied directly from the schools via the circuit offices. To determine the need of books at schools, the department, through the district and circuit offices, issues a circular to schools requesting them to indicate the projected learner enrolment for the coming academic year. The schools then complete the requisition forms and return them via the circuits to the district to process. The district captures the information from each school per circuit. The district does not send officials to schools to verify shortages even though the verification of the availability of books can help the district to establish which subjects have shortages as well as subjects where there are surpluses. This can enable the district to take the surplus to schools where there are shortages.

The consolidated information is sent to the provincial offices for procurement. The district retains the completed requisition forms. The district is not involved in the capturing of requisition information from the schools. It only sends the consolidated information per schools and circuits to the provincial officials who capture the information. After the information from the various districts has been captured, the provincial officers then place orders for the books with the various publishers.

### 4.5 WAREHOUSING

**Warehousing procedures:** The books purchased at the provincial offices from the publishers are delivered to the district warehouses. There are two warehouses in Vhembe District. One is in the premises of the former Venda College (VECO) in Thohoyandou and the other one is in
Schoemansdal in the Makhado area. The personnel that work in the warehouses have never undergone any formal training on receiving and packaging of books. Under normal circumstances, the receiving and delivery of books does not occur throughout the year, it happens when there is an order for books, mostly from October to December, or when new books are to be delivered to all schools for a new curriculum. The books that are delivered as top-ups are usually sent in March. For the remainder of the year, the warehouse is not used at all and the warehouse personnel are given other tasks.

Receiving of books: When books are delivered to the warehouses, the warehouse staff verifies the books supplied against the invoice, however, they do not use the consolidated information. As a result, there may be an oversupply or undersupply of books. When there is an oversupply, the difference is returned to the publishers with a letter indicating the title on which there is an oversupply. The cost of returning oversupplied books is borne by the publishers. In the case of undersupply, the district indicates on the top of the invoice or delivery note the number of books that should have been received and also the actual number of books received. Although an undersupply implies shortages of textbooks at schools, there are no penalty measures in place to be imposed on the publishers for delivering the wrong quantity of books. In the district warehouses, books are packaged according to their respective circuits and schools and then they are delivered to schools. However, sometimes the schools receive wrong books. This irregularity often occurs during the packaging of books per circuits and per schools.

Some of the problems that occur in the warehouse include the following:

- Accepting supplied books without verifying the supply against the requisitions;
- Incorrect packaging of books in terms of titles;
- Packaging more books for some schools than were ordered;
- Packaging fewer books for some schools than were ordered.

These irregularities arise as a result of, amongst others, the following factors:

- The warehouse personnel have never been trained on the receipt and packaging of textbooks;
• Incorrect capturing of the requisitions from schools; and
• Lack of adequate information sharing between the schools and the district offices, provincial offices and suppliers.

4.6 DISTRIBUTION

Transportation of books: The delivery of books to schools from the warehouses commences at the beginning of October and continues until 15th December. The delivery of learning materials to schools is both insourced and outsourced. With insourcing, the district makes use of department vehicles to deliver books to public schools. With outsourcing, it is the responsibility of the provincial officials to appoint the transport service providers. The selection and appointment of these service providers is centralised in the provincial department. The district is informed by the provincial officials which service provider will deliver books to the schools. The district does not have a contract with these service providers but the provincial officers have agreements with transport service providers. These outsourced companies which provide delivery services must be registered with the department. When registering these companies, the BEE principles are considered as a means to empower economically disadvantaged people, taking into account the capability of the companies.

2012 changes: There were changes that were implemented in 2012 due to the fact that, towards the end of 2011, most of the provincial departments in Limpopo Province, including the Department of Basic Education, were placed under national administration as a result of the alleged misappropriation of funds. As a result, there has been, since 2012, only one central warehouse which is in Polokwane. Publishers no longer deliver books to the district warehouses, but only to the central warehouse in Polokwane which has been outsourced to a Third-Party Logistics company called UTI. However, this seems to be a temporary arrangement because the agreement was from August to December 2012. The district warehouses are no longer functioning as they were closed in October 2012. Employees of the department who were in charge of the distribution and packaging of books were based in the district warehouses but now all the processes regarding the receiving and recording of books delivered by the
publishers are undertaken by UTI including the delivery of books from the central warehouse to the schools. The researcher was allowed to visit the warehouse and to interview the personnel in the warehouse who are the employees of the department from the district warehouses. However, the researcher was not able to interview the officials from UTI as permission was not granted for this.

Despite these changes, the supply of books in Limpopo has remained a serious concern. Books, especially those of the new CAPS curriculum, were not available when the academic year commenced in 2012 and only began to be supplied in mid-2012. The schools did not receive the correct quantity of books or were supplied with books that they did not requisition.

**Management of books:** The School Governing Body (SGB) at each school has to draw up a policy on the distribution and retrieval of textbooks. The District Section on School Governance is responsible for ensuring that the schools draw up these policies. It is also responsible for ascertaining that these policies are fully implemented. A complete implementation and control of these policies will substantially reduce the shortage of books at schools but these policies are not available at most schools. Even at schools that have them, these policies are not being fully implemented.

The district does not have a system in place to measure the performance of the supply chain of the supply of books to schools. So it is quite difficult for the district to bring about improvement to the supply chain of learning materials unless a system is put into place to measure the performance of the supply chain.

### 4.7 DEMAND FOR BOOKS: PROVINCIAL OFFICES

**Procedures for demand:** Demand in terms of new textbooks starts when a new curriculum is developed for use at schools. In the national offices, there is a Curriculum Section that deals with curriculum matters and it develops the content to be covered in the new curriculum per subject per grade. This section requests the submission of approved books. A list of approved books is then given to the Supply Chain (Learning Materials) section. The supply chain section
then draws a catalogue that contains the titles of the approved books together with their publishers. These catalogues are then sent to schools via the districts and the circuits. The schools then select the books that they want and they complete the requisition forms according to the enrolment per grade and per subject. Each learner is entitled to a copy for each subject he/she studies. The schools return the forms to the circuits. At the circuit offices, the requisition forms are checked to verify if they have been completed as per the provided guidelines. The circuit offices then send the forms to the district offices. The district offices consolidate the requisitions from schools and this consolidation is sent to the provincial offices. The provincial officials go through the information from the districts in order to verify compliance with the guidelines and then they capture the consolidated information and place orders for books with the publishers. The ordering of books is centralised to the provincial offices.

**Verification of demand:** The department does not do enough to verify the number of learners per subject, per grade and per school. It is only on rare occasions that the department conducts head counting on the learners. It simply relies on the information the schools provide. Sometimes schools exaggerate the enrolment in order to get the school graded at higher level. As a result, some schools end up with an unnecessary high demand of books supplied but they do not return the surplus which is kept in boxes in their storerooms. The reason that schools give for keeping the surplus is that they are not certain of delivery of similar books should there be shortages. This position leads to a situation where there will be shortages at other schools which become a costly exercise to the department.

**Capturing of requisitions:** There are challenges that the department is faced with regarding the capturing of textbook orders due to human errors. If the officials capture the orders from a particular school incorrectly, this affects the orders from another school. In instances like these, schools may receive titles that they had not selected or incorrect quantities of the books which may lead to shortages or surpluses of books. Mistakes are also caused by a lack of information on the curriculum that each school follows. This is evident when a school receives books for subjects that are not studied at those schools. A summary of complications that are encountered in the capturing of information from the schools include the following:
• More books captured than ordered by some schools;
• Fewer books captured than ordered by some schools;
• Wrong titles of books captured for some schools;
• Requisitions not captured at all for certain schools;
• Orders placed very late with the publishers;
• Requisitions from one district that are captured as requisitions from another district.

These complications, together with many others, explain why the capturing of the data from the schools is the main cause of shortages of books at these schools. Any information that is wrongly entered will result in the failure of the whole supply chain of textbooks.

4.8  ACQUISITION (PURCHASING)

The Limpopo Department of Basic Education practices centralised procurement. All decisions on the purchasing of textbooks are made at the provincial offices. The districts and the circuits are not empowered to engage in the procurement process and therefore they cannot make an arrangement with the suppliers or service providers. The capturing of requisition forms and the procurement of textbooks is centralised. Processes that are followed in the acquisition of books are the following:

4.8.1 Selection of publishers

The printing of books is outsourced to multiple publishers. In order to be considered as a publisher of books, each publishing company has to register with the department as a prospective supplier. The department then compiles a list of suppliers. The department does not have a contract with the publishers but they are expected to supply books which have been approved and selected for use at schools. For a book to be selected for inclusion in the catalogue, it should be able to meet all the content coverage of the subject as prescribed by the Curriculum Section of the department. Therefore, the appointment of a publishing company as a supplier depends on whether their books have been selected. If there is no contract between
the department and the publishers, there is no direct relationship between the department and the publishers.

It is also the responsibility of the provincial officials to appoint the transport service providers. These service providers deliver books from the warehouses to the schools. Districts are only informed of these service providers as they are not involved in their appointments. So their appointments are also centralised in the central office.

4.8.2 Screening of books

This process starts with the development of a curriculum by the department through the Curriculum Section. The publishers then have to write books that are in line with the curriculum. The department will then make a call for the books to be submitted for screening which is a means of checking if the book covers all the requirements of the curriculum. If the book is in line with curriculum, it gets approved and then forms part of the catalogue. This catalogue is sent to schools in October to enable schools to select the books for the following year and onwards. The educators, who are subject teachers, are given the opportunity to make the selection of books from the catalogue. The books selected by the educators are written in the requisition forms which are then sent to the provincial offices via the districts and the circuits.

4.8.3 Evaluation of the performance of publishers

The performance of the publishers is not completely evaluated. There is no clear means to measure the performance of the publishers regarding the supply of books. There is no collaborative relationship between the department and the publishers therefore publishers whose books have been selected are given contracts to deliver books for a specific period only. These publishers are given dates and quantities for the delivery of books to the provincial warehouse. This happens when suppliers are given orders in time. When publishers are not given orders in time, this may be because the department is under budget. When this occurs, the department has to make an application for further funding from the Treasury. If the department does not have enough revenue to purchase books as ordered, it does not use the
available funds to order books. Rather, it waits for the approval of the requested additional funds from the Treasury and then makes the order. So the time it takes to have the order filled is often the result of the late submission of orders to the suppliers. For example, if the budget for book purchases is R10 million and the actual demand for books is R15 million, the department will have to make a request for further R5 million from the treasury. Under these circumstances, the department does not purchase books from the available R10 million but it waits for the approval of the additional R5 million to purchase the books, causing a delay in the provision of books.

When the publishers fail to deliver the books as per agreement, there are no stringent punitive actions that the department takes against them except for blacklisting them. The department makes use of the Service Level Agreement (SLA) as a means to evaluate the performance of the publishers. The SLA tries to enforce the delivery of the orders. Initially the suppliers delivered books after checking the value of an order, causing unnecessary delays of the supply of books. For example, if the supplier has received an order of books from the department that would generate income of R5 000 and another order worth R10 million, the supplier may opt to complete the larger order first, delaying the supply of books in the smaller order. This has compelled the department to develop the SLA to avoid these situations.

The SLA brought with it stringent penalties as a result of failure to comply in terms of the supply of textbooks that have been ordered. The SLA makes provision for the suppliers to quickly let the department know if they will not be able to supply the books as ordered. If they do not supply the books as per order, the publishers face the risk of being blacklisted from the national catalogue and will no longer be allowed to supply books to the department.

When the books have been delivered to the warehouses and subsequently to the schools, the publishers wait until March the following year when there will be new orders for new books and top-ups. If there is a need, they receive orders from the department for the supply of books as top-ups. Top-ups are meant to address shortages of books that exist at schools. If there are indeed shortages, the department makes orders for books, following the same process. It sends
catalogues to schools together with requisition forms via the districts and circuits. Schools with shortages will indicate these shortages by completing the requisition forms, stating the titles of the books, subjects, and grades, as well as quantity required. This information is then sent back again via the circuits and districts to the province for capturing. After capturing, the department then places the orders with the different publishers depending on the books selected.

There is no supply chain that can perform well without any form of measurement. The fact that the performance of the publishers is not measured simply means that there can never be any improvement in the performance of the supply chain of the supply of books at public schools in Limpopo Province.

4.9 SHARING OF INFORMATION

There is not sufficient sharing of information between the department, the schools and the publishers. The only information the two parties share is when publishers are informed of the quantity of books they are required to deliver and the dates of delivery. No supply chain can perform competitively without shared information. Without the sharing of information, it is difficult for the publishers to know the requirements of books at schools. Publishers cannot forecast the demand of the books per school or even for the department in general. The publishers also do not have any information as to which schools have ordered its books. As a result, publishers cannot provide after-sales service to the schools that have ordered their books. This is because they only receive consolidated orders of books from the department which they print as ordered.

The sharing of information electronically, in terms of availability and non availability of books, between the schools and the district as well as provincial officials is not adequate. As a result, district and provincial officials cannot determine if there is a shortage or surplus of textbooks. In addition to that, the department does not visit schools to audit available stocks of textbooks. It is because of this that in some schools there are shortages of textbooks whereas in others there is oversupply. The department leaves it to the school to indicate the shortage of books and thus
the need to top up. So the lack of communication between the schools and the department leaves the school under-resourced.

4.10 INFORMATION TECHNOLOGY

Lack of the use of technology is one reason behind the inadequate communication between the supply chain members. A supply chain can function fruitfully only if there is proper IT use in place. Limpopo Province is dominantly deeply rural. Even in this age of technology, there are still schools, like schools A and B that are operating without such simple technological resources as fax machines, landline telephones, internet and e-mail services. As a result, communication is still facilitated by means of manual circulars and forms which is slow and time-consuming. This shortage of technological facilities results in poor communication between the schools and the district as well as the provincial offices. Information is not well distributed because a large percentage of schools do not have better access to essential information. The lack of proper sharing of information between the schools and the senior levels of the Provincial Department of Basic Education contributes towards the inefficient and ineffective supply of books.
Table 4.2: Percentage of schools by province and school ICT in 2009 and 2010

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>E-mail address 2009</th>
<th>E-mail address 2010</th>
<th>Fax 2009</th>
<th>Fax 2010</th>
<th>Landline 2009</th>
<th>Landline 2010</th>
<th>Principals’ cell phones 2009</th>
<th>Principals’ cell phones 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Cape</td>
<td>11.0</td>
<td>17.2</td>
<td>21.3</td>
<td>23.1</td>
<td>32.4</td>
<td>30.7</td>
<td>67.9</td>
<td>69.0</td>
</tr>
<tr>
<td>Free State</td>
<td>27.4</td>
<td>39.3</td>
<td>62.0</td>
<td>57.4</td>
<td>75.8</td>
<td>74.9</td>
<td>11.6</td>
<td>10.4</td>
</tr>
<tr>
<td>Gauteng</td>
<td>58.8</td>
<td>80.6</td>
<td>89.9</td>
<td>94.9</td>
<td>98.5</td>
<td>96.6</td>
<td>1.4</td>
<td>3.9</td>
</tr>
<tr>
<td>Kwazulu/Natal</td>
<td>15.7</td>
<td>8.4</td>
<td>38.6</td>
<td>42.8</td>
<td>51.9</td>
<td>48.7</td>
<td>47.4</td>
<td>41.5</td>
</tr>
<tr>
<td>Limpopo</td>
<td>10.4</td>
<td>2.7</td>
<td>21.4</td>
<td>23.6</td>
<td>35.6</td>
<td>28.4</td>
<td>64.1</td>
<td>71.0</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>18.5</td>
<td>11.0</td>
<td>45.5</td>
<td>56.3</td>
<td>64.2</td>
<td>65.1</td>
<td>34.9</td>
<td>37.9</td>
</tr>
<tr>
<td>Northern Cape</td>
<td>41.1</td>
<td>59.4</td>
<td>73.8</td>
<td>74.9</td>
<td>74.8</td>
<td>75.2</td>
<td>24.9</td>
<td>23.8</td>
</tr>
<tr>
<td>North-West</td>
<td>38.8</td>
<td>5.7</td>
<td>43.3</td>
<td>49.4</td>
<td>61.3</td>
<td>58.2</td>
<td>38.2</td>
<td>18.6</td>
</tr>
<tr>
<td>Western Cape</td>
<td>99.7</td>
<td>97.8</td>
<td>97.2</td>
<td>98.2</td>
<td>99.9</td>
<td>100</td>
<td>0.1</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Source: Report: Final verification of textbooks deliveries in Limpopo: 2012

Given the information above in Table 4.2, it is clear that the level of ICT usage in the Limpopo Province is the lowest in SA. Therefore, the researcher concludes that there is no effective and adequate communication between the provincial offices and the districts, as well as between the districts and the schools. This lack of resources for effective communication makes it difficult for schools to communicate shortages of books using the right channels. This then makes it a difficult task to have shortages addressed swiftly. It is also very difficult to determine if the supplies are properly received.
4.11 TEXTBOOK SUPPLY CHAIN MAP

The supply chain of textbooks to public schools in Limpopo can be mapped as in Figure 4.3 below. Besides the information as outlined in the table below, the researcher has mapped the supply chain of learning materials. This has helped the researcher to identify problematic areas.
As is indicated in the map, the supply chain of the learning materials commences with the sending of circulars and catalogues, together with the requisition forms, to schools by the
provincial officials via the districts and circuits. On receiving these, the schools select the books and complete and return the requisition forms to the province via the circuits and districts. Firstly, the completed forms are consolidated and verified for correctness by the circuit managers. The consolidated requisition forms are then sent to the districts which send the consolidated information from the schools and circuits to the province. It is at the province where the consolidated information is captured in order to place orders with the suppliers.

It is firstly in the capturing process where most problems arise. As in the case of manufacturing, the capturing process can be considered as the bottleneck of the whole supply chain. Some of the irregularities that occur in the capturing processes include changes in the titles of books ordered, changes in the quantity of books ordered and orders placed very late. One major factor that contributes towards that is a lack of sufficient funds. Although the provincial government does provide enough budget for the purchase of learning materials, these funds may be misappropriated, leading to a shortage of funds to buy LTSM. Faced with the shortage of funds, and, at the same time, obliged to buy books, the provincial department resorts to reducing the number of copies, changing the titles ordered for cheaper ones and delaying the placement of funds to allow enough time to get additional funds.

On receiving the orders from the provincial officials, the suppliers comply with the orders received. They deliver books to the district warehouses where there are also problems. The warehouse personnel simply accept the deliveries as they are. The warehouse staff does not know the books ordered by the schools in terms of titles and quantities. As such, they cannot determine if the deliveries are correct or not. To add to that, the district warehouse personnel are not trained to follow procedures when receiving, packing and distributing books. It is for that reason that the staff sometimes confuses books in terms of packaging per school. These factors lead to the inefficiency and ineffectiveness of the supply chain of textbooks to schools in Limpopo Province.
4.12 SUPPLY CHAIN EFFICIENCY AND EFFECTIVENESS

On 5\textsuperscript{th} December 2011, the Cabinet of the RSA placed five provinces under national administration including Limpopo Province. In Limpopo Province, five provincial departments, including the Department of Education, were placed under national administration as a result of the misappropriation of public funds. The Limpopo Province Department of Education had accumulated an unauthorised expenditure of R2.2bn and there was also an amount of R190m that was owed to service providers.

There were irregularities in the provincial textbooks supply chain, particularly in the tendering system. The Provincial Department awarded the contract to a private company, Edusolutions at an exorbitant price. Schools were allowed to buy the most expensive books regardless of their quality or the need for them and without regard to budgetary constraints. Transport service providers were effectively double-charging the department through the use of an approved payment system that charged per learner and for running costs. All these, together with unauthorised expenditure, led to the complete consumption of the 2011/2012 budget before the end of the financial year. The department also failed to pay these suppliers and service providers, leaving it with a heavy burden of debt to be paid. The ultimate result of these problems was the failure of the provincial department to purchase and deliver textbooks for the 2012 academic year which proved that the learning materials supply chain in Limpopo Province was not efficient.

Schools have been experiencing shortages of books for some years. However, it was only in 2012 that this problem surfaced to its fullest extent. As usual, each province in SA is expected to order books for the coming year before the end of the current year. This practice enables schools and all learners to have books when the new academic year commences but the position was different in Limpopo Province in 2012. The Provincial Department failed to make an order for books in 2011 for 2012 which resulted in the delay of the delivery of books to the schools. This situation coincided with the introduction of the new CAPS curriculum at schools which was to be implemented in 2012 in Grades 1, 2, 3 and 10. But the implementation did not
go well as the 2012 academic year started with no books at all for these grades. The orders for books for these grades were only made in the first week of June 2012. It was not only these grades that did not receive the required the supply of books, the other grades also needed top-ups. Table 4.3 below shows the number and percentage of books potentially not delivered per district in Limpopo Province as there were no proofs of delivery.

Table 4.3: No proof of delivery for Grades 10 and 11 as at 11\textsuperscript{th} July 2012

<table>
<thead>
<tr>
<th>Districts</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capricorn</td>
<td>5 171</td>
<td>20%</td>
</tr>
<tr>
<td>Greater Sekhukhune</td>
<td>10 868</td>
<td>44%</td>
</tr>
<tr>
<td>Mopani</td>
<td>4 696</td>
<td>22%</td>
</tr>
<tr>
<td>Vhembe</td>
<td>8 434</td>
<td>32%</td>
</tr>
<tr>
<td>Waterberg</td>
<td>1 892</td>
<td>34%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>31 061</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: Report: Final verification of textbooks deliveries in Limpopo: 2012

The non-delivery of books is a sign of ineffectiveness of the learning materials supply chain in Limpopo Province. It meant that even if delivery was finally made, it was not made in time.

Another factor to consider regarding the effectiveness of the supply chain is the delivery of the right books to the schools. As a norm, requisition forms and catalogues were sent to schools in the last quarter of 2011 for the order of books to be used in 2012. The schools complied and completed the requisition forms but there were not enough funds available to purchase books to fill these orders. As a result, the Provincial Department devised alternative means to ensure the delivery of textbooks to schools within budget. This involved the centralisation of the requisitions by changing orders from schools so that the titles delivered to schools were different from those ordered by the schools. This was caused by the negotiations that the Provincial Department had with publishers for cheaper prices. To add to that, the number of
copies ordered were reduced and, as a result, schools received books that they did not order at reduced quantities (Metcalfe, 2012:23).

4.13 KEY RESEARCH FINDINGS

This section provides a summary of key findings of the research as outlined in all the above sections of Chapter 4. They are as follows:

- The Limpopo Department of Basic Education is still lagging behind in terms of the application of Information Technology as most schools still do not have these facilities. As a result, communication between the schools and the office-based officials is facilitated by means of the issuing of circulars. This process is very slow and time-consuming as a circular from the central office has to go via the districts and the circuits before it reaches the schools. The same process occurs when such information is transmitted back to the central office in Polokwane.

- Shortages of books at schools in Limpopo Province are common in almost all the schools. The only difference is the extent of shortages which vary from one school to another. At the same time, a school may run short of books for a particular grade and subject while it has surplus books still unopened in their boxes for another grade and subject.

- While the districts and circuits are entitled to submit and collect requisition forms for books to and from schools, they are not empowered to capture the information on the requisition forms. They simply consolidate the information and hand that over to the central office in Polokwane where this information is centralised and captured. It is in the capturing stage that most errors, such as wrong numbers of books, incorrect titles and books not captured as per requisitions from schools, occur. This creates bottlenecks in the capturing of books. Sometimes orders are placed very late, leading to late deliveries of books to schools especially when the department is faced with financial constraints.
• The requests for books from schools are not verified. The district and circuit offices do not send officials to schools to verify shortages and surplus books at the schools; they just rely on the information supplied by the schools.

• Purchasing of textbooks is also centralised. After capturing the consolidated information from the districts, the central office places orders with the suppliers. It is the central office that selects the suppliers dependent on whether the books from the suppliers have been selected for use at schools. Multiple suppliers may be used. There is no collaborative relationship between the suppliers and the department as a contract is signed between the suppliers and the department which may be for a short period only.

• The performance of the suppliers is not adequately evaluated. These suppliers are only given orders and dates on which to deliver the orders. The SLA is the only tool that the department uses to assess the suppliers. There are no stringent punitive actions that are taken against suppliers who fail to perform. A supplier with service failure is subjected to blacklisting and will be taken off the list of suppliers, no matter how good its books are.

• Communication between the department and the suppliers is very poor. It is limited only to the placement of orders and the signing of the contracts. There is no sharing of information. The suppliers do not have access to the information from the department. Therefore it is difficult for the suppliers to forecast demand. At the same time, the suppliers do not know which schools have ordered their books and therefore cannot provide after-sales service to those schools.

• Lack of facilities for effective communication is another factor that contributes towards failure in the supply chain. There is no effective communication between the provincial offices and the districts and neither between the districts and the schools.

• Books from the suppliers are delivered to the ten warehouses throughout the districts by the suppliers. The personnel in the district warehouses have not been trained and therefore the warehouse is another area where there are problems. It is at these
warehouses that books are to be packed according to the circuits and schools. Packaging of books seems to be another major problem as they may be wrongly packed. Some schools end up receiving packs with more or less books than they have ordered. Some schools receive packs of books that they did not order whereas some schools that have ordered books receive none.

- Packed books are delivered from the warehouses to schools. In most schools, the administrators that receive books are not trained. When receiving books they compare the quantity to the invoice but not to the copies of the requisitions. As a result, they may accept books that were not ordered and that may be of a lower quantity than the orders. In a case where more books are delivered than are ordered, the schools just accept the surplus and keep them in their storerooms even though they are not used. A surplus in one school implies a shortage in another school. After the supply of books, schools are not visited to determine the quantity of books supplied. The information in the invoices is simply accepted.

- Educators distribute books to learners. The books distributed to learners are recorded. These records are kept by the same educators who may lose the records. Given this situation, it becomes unlikely that all the books distributed to learners are retrieved at the end of the year. Although a provision exists to have the learners replace the lost or damaged books, not much is done to have all the books retrieved. To add to that, there is no accountability on the part of the educators and the school principals over the lost books. The department just accepts orders for more books.

- Although the suppliers try their uppermost to deliver the books according to the contracts, they are often not paid in time.

All these factors, together with many others render the supply chain of the supply of learning materials to schools in Limpopo inefficient and ineffective.
There is no reliability on this supply chain. This is based mainly on the order fill rate, as well as the responsiveness. With order fill rate, orders may be delivered to the schools in the wrong quantities and may include incorrect titles. In certain schools, books are not delivered at all even though there was an order placed through the requisition forms.

It was found that delivery performance from the suppliers to the warehouses and from the warehouses to the schools is carried out perfectly. This can be attributed to the fact that these activities are performed by third parties on behalf of the department.

Failure of services with regard to order fill rates leads to unnecessary costs for the department. Surplus books delivered to the schools amounts to unnecessary costs. The department purchases books for schools with shortages while there are schools with surpluses. This anomaly causes the department to incur expenditure not in the budget. At the same time, the department fails to pay the suppliers on time which leads to high unpaid debts.
CHAPTER 5: RECOMMENDATIONS AND CONCLUSION

This chapter covers the recommendations by the researcher within the ambit of the study in order to mitigate the research problem and to provide answers to the research question and associated investigative questions. It also provides a conclusion of the research.

5.1 RECOMMENDATIONS

The findings of the research bring to light the fact that the supply chain of textbooks to schools can be improved to become efficient and effective. Based on the findings as reported in chapter 4, recommendations are outlined below. These recommendations are categorised according to the respective activities of the supply chain.

5.1.1 Recommendations regarding demand for books

As per the findings of research, the researcher makes the following recommendations:

Requests for books

The department should continue with the issuing of requisition forms for schools to complete as a means to place orders. However, these forms should be sent electronically to the schools, circuits and districts in order to speed up the process. The completed forms from the schools should be returned to the circuits, districts and the central office also by electronic means. The capturing of requisitions for the purpose of purchasing should be executed at the districts. This means that the capturing of requisitions and the purchasing of books is decentralised to the districts. The circuits and the province should also keep these records for verification purposes.

Verification

Before an order is placed with the suppliers, the department at district and circuit level should first go through the enrolment verification at each school across the province. Where necessary, head counting of learners should be done. Even the stock registers should be checked to determine the available books. Information from the stock registers and the enrolment at each
school should then be compared to determine how many books are to be purchased. The collected information must then be sent to the provincial offices in Polokwane.

With this verification, the department will determine the number of textbooks to be purchased either for the new curriculum or as top-ups. This verification will enable the department to identify schools with shortages and those with surpluses of books. Surplus books should be distributed to schools with shortages. This will help reduce purchasing costs.

Training: According to the research findings, the capturing of requisitions is the most critical area in the supply chain. It is in the capturing where most mistakes occur that lead to the failure of the whole supply chain. Mistakes that are common here include capturing incorrect quantities of books per school, incorrect titles of the books for the schools and orders for books that may not be captured at all. These mistakes contribute greatly towards service failure. One important way to eliminate all these mistakes is to have the capturing personnel trained for the task. Training will empower the capturing officials with skills to undertake their tasks effectively.

5.1.2 Procurement recommendations

Recommendations regarding the purchase of textbooks are the following:

Suppliers: reduction and selection

As per findings of the research, the department purchases books from multiple suppliers. Each of these suppliers prints books for almost all the subjects that are taught at schools.

The number of suppliers needs to be reduced. Although they will remain in multiples, specialisation should be emphasised. This means that each supplier should specialise in producing books for a particular subject. For example, one publisher may print books for Accounting only, while another publisher will be printing books for Geography only. This specialisation will lead to an improvement in the content of the books as each supplier will focus on one subject only. Ultimately, the number of suppliers will be reduced which will also help to maintain high standards throughout the province. The status quo regarding the procedures for selection of these suppliers, which is screening, should be maintained.
Only books that best fit the requirements of the curriculum should be selected. The selection of the books should be done centrally in Polokwane, for the sake of provincial uniformity.

**Assessment of publishers:**
The publishers whose books have been screened and approved should be assessed on the following aspects:

- the ability of the publisher to demonstrate a certain level of acceptable technical support;
- the general financial status of the publisher, as well as its payment and delivery terms;
- the publisher’s position in the market, the scope of its services and its flexibility in responding to customers’ needs;
- whether the publisher has been certified and how it handles defects;
- whether the strategic direction of the publisher matches the direction of the department.

**Relationship with suppliers:**
The department should get into collaborative relationships with the suppliers whose books have been selected. These relationships should be for a five-year period which is the time it takes before a new curriculum is reviewed for introduction into schools. In order for these relationships to be successful, transparency by both parties should prevail as the most significant aspect required for the success of the supply chain is the sharing of information.

Sharing of information will enable the suppliers to forecast the needs for books from the schools. This will lead to speedy printing and delivery of books to schools, leading to the effectiveness of the supply chain. Suppliers should be able to visit the schools as well to check on how the books are being utilised. This will, in turn, enable the publishers to obtain first-hand feedback from the educators about their books and, as a result, they are able to gain knowledge about the areas that require improvement.
Order for books:
As already recommended, the capturing of books for order purpose should be done at districts. The consolidated information should then be sent to the provincial offices to verify and approve. Once approved, the districts will then be able to place orders with the suppliers.

Payments for the orders should be made centrally by the provincial office. This implies that the decentralised and centralised sourcing strategy should be put in place. As the payment will be for bulk books, it will be easier for the provincial office to negotiate the reduction of prices with the suppliers which will lead to the efficiency of the supply chain.

5.1.3 Warehouses and distribution

Warehouses
Initially, books were delivered by the suppliers to the ten district warehouses. Then from the warehouses, the books were distributed to the schools. The researcher recommends that the books be distributed from the suppliers straight to the schools eliminating the storing of books in the warehouses. This will result in cost savings in terms of the cost of delivery of books from the warehouses to the schools, and also in terms of the warehouse maintenance costs. Given that the relationship that exists between the department and the suppliers entails a sharing of information, it will be easier for the suppliers to establish the number of books and the titles that are to be supplied to a particular school.

Schools:
The schools are and should continue to be entitled to receive books as they are delivered by the suppliers. The administrators in charge of receiving books supplied must be trained on the procedures to follow when receiving books. Instead of comparing the quantity supplied against the invoice only, the researcher recommends that the administrators also compare supplies against copies of requisitions that are kept at schools. This will enable the administrators to establish if the books supplied are of the right quantity and right titles according to the order.
Undersupply and oversupply of books should be reported immediately to the district offices via the circuits. The administrators should indicate that on the delivery form. Both the delivery form and the invoice should bear the stamp of the school to ascertain the receipt of books. Immediately after the completion of deliveries, the department should send officials to all the schools to verify deliveries. This will enable the department to establish shortages and surpluses and react to them immediately. Thereafter, the suppliers should be paid for their services. The distribution of books to learners at schools should be centralised to the offices of the administrators. Educators should not be charged with the responsibility of distributing books. Records of book distributions must be safely kept in the administrators’ offices.

Any lost book should be replaced. The district office should ensure that at each school there is a School Textbook Distribution and Retrieval Policy which is properly implemented. The administrator and the principal at each school should account for any books that are not returned by learners.

5.2 CONCLUSION

Supply chain management plays a vital role in delivery of services to the customers and the end users. Initially, supply chain was applied in the public sector as a way through which organisations could gain competitive advantages. However, SCM has now been extended to include activities in the public sector. In the private sector, the aim of SCM is to generate higher profits for the shareholders but in the public sector it enables a section or department to provide service to the satisfaction of the public. This will help the sector to gain the confidence of the public. Supply Chain in the public sector is aimed at the provision of services to the public at low costs.

While SCM is being employed in the South African public sector, the implementation of the SCM in the Limpopo DoBE is still at the lowest level and still faces many challenges. These challenges are causing the supply chain of the supply of textbooks in Limpopo Province to become inefficient and also ineffective. These challenges include a lack of skills and capacity to undertake supply chain activities. No proper expertise to carry out supply chain activities leads
to service failure which ultimately becomes a costly exercise. These skills need to be extended to include the ability to operate information technology resources. This is because a lack of communication is one major factor that is contributing to the failure of supply chain. Without proper and effective communication, it is difficult to communicate shortages in order to have them addressed. Therefore there are still many areas of the supply chain that need to be improved in order to have an operational supply chain.

To improve the SCM, the Limpopo DoBE should start by focusing on the areas that are critical for the success of the supply. These areas include the order fill rate as well as cost management. Order fill rate refers to the percentage of orders that are delivered to the correct customers at the correct quantity at the agreed time and damage free. In the context of the supply chain of books, this implies the delivery of the right books to the right school at the agreed time. Failure to improve fill rate will mean an unequal supply of books to schools as some will have a surplus while others will be faced with shortages of the same books. To improve the order process, the personnel capturing the data should undergo extensive training for the task. So there is a strong need to train employees on the various skills required to undertake supply chain activities in an efficient and effective manner. An improvement in the order fill rate will lead to an improvement in the reduction of the supply chain costs. This will then be able to render the supply chain as being effective and efficient.
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ANNEXURE 1: Questions for interview (Learners, Educators and Principals)

A. Learners:

(The purpose here is to determine if learners do get textbooks for studying, how the books are returned and the impact of shortages of study materials to learners.)

a) How many learners are in your class?

b) How many subjects do you study?

c) Are you given textbooks for all the subjects?

d) If yes, at what time of the year do you receive the textbooks?

Do you have all the textbooks and other learning materials for each subject that you are doing?

If no:

i. For how many subjects do you have a shortage of textbooks?

ii. What do you think are the causes of the shortage of the books?

iii. How do you learn without textbooks?

iv. Where do you write your tasks from without textbooks?

v. Where else do you get information from?

vi. How does the shortage of textbooks affect your performance at school?

vii. What is the overall impact of shortage of textbooks to your studies?

If yes:

viii. At what time of the year do you return the books?

ix. Are the books that you receive recorded, and by whom?

x. When are the books returned?

xi. To whom are the books returned?

xii. Are the returned books recorded?

xiii. What happens when a book/s is lost and thus not returned?

B. Educators (In charge of the distribution of learning materials to learners)

a. At what time of the year are textbooks distributed to the learners?

b. Is there a record for books given to learners?

c. Is each learner given textbooks for each subject, or do you have shortages?

d. If there are shortages, how do you deal with that?

e. At what time of the year are books returned for distribution in the following year?

f. What happens when a book/s is lost and thus not returned?
g. Does the school have a textbook retrieval policy?
h. When were you last trained on the retrieval of textbooks?

c. Principals (Accounting officers)
i. What tool/s do you use to determine if there is a need for textbooks in a particular class?
j. What mechanism do you apply to have the need fulfilled?
k. What is the criterion/a that you use to decide the books to order?
l. At what interval do you make requisition for new books?
m. How do you determine if the books delivered are according to the requisition/s?

n. Are the books often supplied as per requisition that is in terms of the titles and quantity?
o. What do you do when wrong books are supplied?
p. What do you do when incorrect number of books is supplied?

q. Does the school have a textbook retrieval policy?
i. Is the retrieval of textbooks monitored by the District Senior Manager (delegate), and how?
r. What happens when a book/s is lost and thus not returned?
s. How do you deal with books that have become no more relevant to the curriculum?
ANNEXURE 2: Questions for interview (District officials and warehouse personnel)

**District Offices**

**A. Requisitions of books**

i. How do you determine the needs of schools regarding textbooks?

ii. Which mechanism do you use to determine the availability of adequate books at schools?

iii. Where are the requests for books from the school taken to?

iv. The enrolment of learners at schools sometimes fluctuates. How does that impact the availability of books? How do you deal with that situation when it occurs?

v. How do you measure the performance of the supply chain of the supply of learning materials to schools?

**B. Receiving of learning materials**

vi. What procedure/s is followed when receiving books from the publishers?

vii. Is the warehouse staff trained on the receiving and distribution of learning materials?

viii. If yes, when was it last trained?

ix. Do you sometimes experience undersupply or oversupply of books? If so, how do you deal with that position?

**C. Distribution and Delivery of textbooks to schools**

i. Is the delivery of learning materials to schools in sourced or outsourced?

ii. If in sourced, what is the total delivery cost to all the schools in the district?

If outsourced:

   What is the total outsourcing cost of the delivery of textbooks?

   What is the criterion/a that you use to select service provider?

   Do you have a contract with the service providers?

   If yes to the above question, the contract is for how long?

   Besides the expiry of the contract, what other factors can lead to the cancellation of the contract?
How do you assess the performance of service providers?

How do you determine if the right books have been delivered in time, at the right quantity and to the right school?

iii. At what time of the year are books delivered to the schools?

D. Management of textbooks
i. Which method do you use to check if all learners have received textbooks at the beginning of the year?
ii. How do you address shortages?
iii. Does the district have a textbooks retrieval policy?
iv. Do the schools have textbooks retrieval policy?
v. Which strategy do you apply to check on the retrieval of textbooks at schools?
vi. What step/s do you have when a learner/s fail to return a textbook at the end of the year?
vii. How do you monitor the retrieval of books?
viii. Are educators (in charge of the distribution of learning materials to learners at schools) trained on the retrieval of textbooks?
ix. If yes to the above question, when were they last trained?
x. How do you deal with books that are no longer relevant to the curriculum?
ANNEXURE 3: Questions for interview (Provincial officials and warehouse personnel)

A. Provincial Supply Chain Manager

i. Does the Provincial Department of Basic Education have a policy on Procurement, Supply, Maintenance and Retrieval of LTSM in schools?

ii. Can you please outline the procurement process that you follow when acquiring learning materials?

iii. Is the supply of learning materials insourced or outsourced?

iv. How do you manage textbooks while they have been delivered to schools? This implies the availability of the right books at the right quantity, and the retrieval of books

v. How do you communicate with the schools with regard to the availability or need of textbooks?

vi. Besides the use of requisition forms, what other criterion do you apply to check the availability and shortage of textbooks at schools?

vii. Are you able to forecast the demand of textbooks from schools, how?

viii. Do you share information with schools, if so how?

ix. Is the production and printing of textbooks outsourced or in sourced?

If outsourced

• What is the cost of outsourcing?

• Is it outsourced to a single or multiple service providers?

• What is the criterion that you use to select service providers?

• Do you have a contract with the service providers?

• If yes to the above question, the contract is for how long?

• Besides the expiry of the contract, what other factors can lead to the cancellation of the contract?

• What are some of the important conditions of the contract?

• Do you share information with the suppliers?
• If yes to the above question, what is the extent of information sharing?
• How do you assess the performance of service providers?
• When and how do you evaluate the performance of the suppliers and service providers?
• What punitive measure do you have in place if the suppliers failed to deliver the books satisfactorily which is in terms of, for example, late delivery, wrong delivery etc?

B. Provincial Procurement Manager

i. What system of procurement do you apply? Is it centralised, decentralised or both (Hybrid)?
ii. Why have you selected this system of procurement?
iii. When and how are the suppliers and service providers paid

C. Provincial Warehouse officials

i. Is the Warehouse insourced or outsourced?
ii. If outsourced, what was the reason behind that idea?
iii. What is the annual cost of outsourcing the warehouse?
iv. What difference does it make to outsource the warehouse whereas districts have their own warehouses?
   a. What is the procedure that you follow when receiving learning materials from the suppliers?
v. Do the suppliers always deliver textbooks as per order? This is in term of quantity, titles, etc.
vi. What happens when the wrong delivery is made?
vii. How are the learning materials distributed?
viii. Is the delivery of textbooks outsourced as well?
   a. To where are the books distributed, is it to schools or to the districts?
   b. Between the districts and the Province, who is responsible for the selection of transporters of books to schools, and how?
ix. How are the transporters selected and how are they evaluated in terms of their performance?

x. Are you trained for the distribution of learning materials?

xi. If so, when were you last trained?
ANNEXURE 4: Questions for interview (Suppliers)

A. SUPPLIERS

i. When were you selected to supply textbooks to the Limpopo Provincial Department of Basic Education?

ii. How were you selected to become a supplier?

iii. Do you have a contract with the department?

iv. The contract is for how long?

v. Does the department evaluate your performance?

vi. If yes, at what interval?

vii. If your supply is not in accordance with the order, what action does the department take?

viii. Are you able to forecast the demand of learning materials per annum?

ix. If yes, how? If no, why?

x. Do you technologically share information with the department?

xi. What kind of information do you share?

xii. How long does it take you to process an order?

xiii. When do you always receive the orders?

xiv. How long does it take for you to receive payments once you have supplied the textbooks?