UNIVERSITY OF KWAZULU-NATAL

**The Impact of Educational Technology on Training and Development in Banks
A Case Study on Nedbank**

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Declaration

I, Razia Khan, declare that:

(i) The research reported in this dissertation/thesis, except where otherwise indicated, is my original research.

(ii) This dissertation/thesis has not been submitted for any degree or examination at any other university.

(iii) This dissertation/thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.

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Abstract

Recent sustainability and training and development reports show that our banks are increasingly investing in training and development. Nedbank, in 2010 invested 244 million on training, which equated to 39 hours of training per person. Absa Bank increased its spending on training and development from 526 million in 2011 to 606 million in 2012. Standard Bank invested over 358 million in 2011, and 423 million on training in 2012.

Their strategy going forward is to focus on other training interventions like e learning in order to decrease classroom based training dependencies (Banking Association of South Africa, 2012). Most banks are already utilising different forms of e learning for certain types of training interventions and also for employee assessment (Banking Association of South Africa, 2012). But the focus going forward is to reinvent training within the organisation by making it more efficient, convenient, accessible and fun with educational technology (Quinn, 2013).

The objective of this study was to explore and investigate the impact that educational technology has on concepts like training and development downtime, accessibility with regards to different learning platforms, return on investment (ROI) and organisational culture and learning within an environment like a Bank.

In order to answer the research questions of this study, a research strategy was necessary. A quantitative approach was selected and two surveys were manually administered at Nedbank in the greater Durban area.

The statistical analysis of the data collected revealed that Nedbank has a strong organisational culture, and educational technology at Nedbank show positive results with regards to cutting downtime, seeing increased ROI, allowing for multiple learner platforms thus increasing training and development accessibility.

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CHAPTER 1

1.1 Introduction

"Educational technology as an academic domain is relatively new; and much debate exists as to how to clearly define the discipline" (Lowenthal and Wilson, 2010). The dilemma as identified is that technology is constantly changing. In order to implement educational technology organisations might incur high costs with replacing the ever changing software and hardware and internet applications necessary for these types of training and development initiatives. However, investments in training and development within banks has increased year on year along with the implementation of educational technologies for e-learning and other online initiatives.

A challenge for many organisations is how to enhance training and development initiatives with educational technology in order to both improve access to training and also cut down on training and development downtime whilst achieving desired return on investment (ROI) (Percival et al., 2013).

1.2 Problem Statement

There is an indication that globally, the financial sector is investing or looking to invest in newer more innovative methods and technologies to train and develop employees in order to become better global players and also for a competitive advantage.

The purpose of this study is to explore and investigate the impact that these new innovative methods and technologies will have on training downtime, on making training interventions more accessible to all employees at any time, on improving Return on Investment (ROI) ratios and on creating preferred learning platforms to provide for different learner preferences.

1.3 Objectives of the study

The objectives of this study are:

- To explore the effect that educational technology has on training and development downtime in Nedbank.

- To study employee learning preferences for different learning platforms and its impact on training and development accessibility within Nedbank.

- To investigate the impact that educational technology has on Return on Investment (ROI) in Nedbank.

- To understand the Organisational Culture at Nedbank with regards to training and development and educational technology.

1.4 The Research questions

The following are the research questions that this study aims to answer:

- What is the effect that educational technology has on training and development downtime in Nedbank?

- What are the learner preferences for different learning platforms in Nedbank and how does this impact on training and development accessibility?

- What is the impact of educational technology on Return on Investment (ROI) in Nedbank?

- What is the Organisational Culture at Nedbank and how does this impact on educational technology adoption?

1.5 Scope of the Study

The scope of this study is to investigate the impact that educational technology has on training and development at Nedbank. Questionnaires were administered to

Nedbank employees in the greater Durban area in order to collect relevant data for the study. The focus of the study is on the following:

- The current culture of training within Nedbank

- The current use of educational technology for training and development within Nedbank

- The current perceptions of training and development within Nedbank

- The perceptions of educational technology and its impact, if any, on training and development at Nedbank

- The effect of training and development on lost time or downtime at Nedbank

- The effect of educational technology on lost and downtime at Nedbank

- The preference of educational technology to traditional learning methods and platforms within Nedbank

- The ROI changes within Nedbank before and after educational technology initiatives

1.6 Relevance of the Study

Research around the impact of educational technology on training and development within organisations is still considered a relatively new domain. Not much research exists regarding educational technology and training and development in banks (Chakrabarthy, 2012).

This study will investigate the impact that educational technology has on training and development downtime, return on investment, organisational culture and the creation of different training delivery platforms within a banking environment.

This study is a case study on Nedbank, and the managers within Nedbank could exploit this information to employ more effective and efficient decision making around training and development investments relating to educational technology.

1.7 Limitations of the Study

The following are the limitations of this study:

1) Actual downtime cost calculations did not form part of the scope of this study, but it would be critical for managers to calculate actual Rand value costs of training and development downtime before and after the introduction of educational technology.

2) Rand value calculations of ROI did not form part of the scope of this study, but is critical in order to make informed educational technology investment decisions.

3) Only a few aspects of the impact of culture on learning was touched on, but culture and learning is a massive study with an immense number of elements that also need to be taken into consideration by organisations when implementing culture change.

4) The study does not account for Rand value costs of technology implementation (hardware or software) within an organisation like Nedbank, but managers looking to invest in these technologies would need to analyse the ROI of such investment costs carefully.

5) The study does not cover the capacity of servers and other IT related concepts currently at Nedbank, but a complete evaluation of these systems would need to be carried out for further technological adoptions.

6) Current training and development evaluation processes at Nedbank did not form part of the scope of this study, but is highly critical in any training and development environment as suggested in this study.

1.8 Chapter outlines

Chapter one contains the problem statement, study objectives, research questions, scope, relevance and limitations of the study.

Chapter two is a literature review of the concepts: Training and Development, Educational Technology, Learning platforms that lead to convenient accessibility,

Downtime or lost time, Return on investment (ROI), Organisational Culture and Banks.

Chapter three outlines the research methodology adopted for this study. A description of the research strategy, research approach and design, study population and sample, the study setting and time horizons, the instrument used to collect the data, including the validity and reliability of the instruments administered, is outlined here.

Chapter four is a statistical analysis of the data collected by means of two surveys administered to managerial and non-managerial employees at Nedbank in the greater Durban area.

Chapter five contains a few recommendations and suggestions for Nedbank based on the outcomes of the study, the literature review and with reference to the study's research questions.

1.9 Conclusion

The aim of this study is to explore and investigate the impact that new innovative training and development methods and technologies will have on training downtime, on making training interventions more accessible to all employees at any time, on improving Return on Investment (ROI) ratios and on creating preferred learning platforms to provide for different learner preferences, within Nedbank.

The following chapter is a literature review of these concepts.

CHAPTER 2

2.1 Introduction

This chapter is a literature review of the concepts: Training and Development, Educational Technology, Learning platforms that lead to convenient accessibility, Downtime or lost time, Return on investment (ROI), Organisational Culture and Banks.

2.2 Training and Development

2.2.1 Training and development definitions

Ongori and Nzonzo (2011) define training and development as the updating and upgrading of employee knowledge and skills in order to achieve targeted performance levels in an organisation. Training and development has also been defined as a systematic approach to alter employee attitudes and behaviours towards achieving organisational performance goals. (Sultana, 2012 and Salas, 2009).

Saeed and Asghar (2012) define training and development as organised or planned interventions where necessary knowledge or information is shared or imparted to employees in order to impact organisational performance positively (Scott, 2010).

From these definitions it is clear that training and development is a process that:
1) Is systematic, organised and planned
2) Ensures the sharing or imparting of necessary knowledge or information
3) Positively alters attitudes and behaviours of employees
4) Results in the achievement of organisational goals and performance targets.

2.2.2 Purpose or Importance of Training and Development

Recent studies have shown that training and development has positively impacted on organisational performance (Khan et al., 2011). Sultana et al. (2012), found that

employee's knowledge and skills is vital to an organisations competitiveness, performance and innovativeness. It is evident from these studies that training and development is indeed important and required in order to boost organisational performance and innovation.

Globalisation has resulted in fast paced innovation and technological advances that have resulted in the world experiencing different products, services and occupations that did not exist a year ago. In order to be competitive and remain current, organisations are constantly required to update and upgrade knowledge, skills and competencies to ensure efficiencies in processes and services. (International Labour Office Report, 2010).

Organisations are experiencing shifts in the nature of work itself and is needing a different skills and experience level amongst its more diverse workforce. (CIPD Report, 2012).
These reports allude to the importance of continuous training and development in order to remain competitive and prepared for the ever changing internal and external environmental factors of an organisation.

Research suggests that a well trained workforce will show more commitment to an organisation. The organisation will not only experience improved performance levels, but also a higher employee retention rate. Brum (2007) suggests that there are two schools of thought with regards to training and development within an organisation and its impact on employee retention and turnover rates.

One school of thought is that training and development improves retention, especially if the training is relevant and meets the expectations of the employee.
The second school of thought is that training and development investment costs are high, and when turnover rates are expected to be high, smaller investments should be made.

Owoyemi et al. (2011) concur that training and development improves commitment and performance, since committed employees are likely to be more productive. By making training and development programmes worthwhile for employees the

organisation also makes the most of training and development expenditure (Ng and Dastmalchian, 2011)

South Africa has a booming economy, however its labour market efficiency performance indicates that South Africa has not fully realized its "human resources potential" (The WEF Africa Competitiveness Report, 2013). In order to be competitive, South African organisations need to implement better training and development initiatives in order to improve its human resources potential in order to fully benefit from its booming economy.

2.2.3 Types or Modes of Training Delivery

Traditionally, training and development delivery did not include any technological tools. Training took one of two forms.

1. On the Job training

This entailed employees learning by using equipment and processes in real time or on the job in order to gain the necessary skills required. It is a hands on practical approach to learning. A benefit of this method is that there is immediate application of the teaching. On the job training is also used on new employees as part of the induction process (Ongori and Nzonzo, 2011).

Job rotation, which involves moving employees between departments, divisions and tasks is an example of on the job training. A benefit to this method, besides immediate work application, is that new ideas are introduced into the different departments by the training employees (Ongori and Nzonzo, 2011).

Classroom training, still used today has always been an effective method of imparting or sharing knowledge or information about specific topics by means of a lecturer or trainer (Instructor lead). Although this method is preferred by most organisations, a concern has always been the ineffective transfer of learning from the classroom to the work environment. Classroom training works well for theoretical knowledge transfer, but is ineffective for application type training. The information or knowledge shared is also limited by the knowledge and skills of the instructor (Oyitso and Olomukoro, 2012).

2. Off the job training

This method entails offering training to employees outside of the work environment, most times off site. Classroom training or workshops and seminars are generally the methods of training delivery. Role playing simulation activities and outdoor experiential training in an environment that can be controlled and made conducive to learning is more popular than on the job training. Role playing simulations and experiential training are scenario type enactments that mirror reality in organisations, resulting in more practical learning for trainees (Scott, 2010).

Training and development has also been classified as formal, informal and non-formal. Formal training and development has a standard duration, is organised and generally results in certification. Latchem (2014) states that informal learning occurs throughout a person's life occurring within family circles, communities and work settings. Non formal learning is similar to formal learning except that it has no standard duration and might not result in certification.

Kyndt et al., (2009) had the same views, but also suggested that formal training lacks sufficient insight to make it an efficient method because learners struggle to put the theory learnt into practice. Work related training is seen as more efficient because the skills and knowledge acquired is practically applicable. Informal training is described as unplanned, unintentional, everyday training that has unpredictable results. Informal training is seen as development through the interaction with others and happens spontaneously. They suggest that non formal training are all forms of training that takes place outside of school, and the learner learns at his or her own will.

Whether formal, informal or non - formal, Human Resources are spending billions of dollars in getting the workforce skilled and capable to provide products and services to global clients in ever changing and volatile markets (Fardaniah et al., 2011). Managers are faced with environments that are prone to unexpected changes, and in difficult economic times training and development is often times described as a luxury, and the training and development budgets are usually the first costs to be cut. Noe (2008) as cited by Scott (2010) states that training and development is always a necessity and never just a luxury.

Organisations need to investigate the full spectrum of training delivery methods available in order to ensure optimisation of training and development downtime and budgets.

2.3 Educational Technology

Technological advances through the years have resulted in multiple modes of efficient and cost saving training delivery methods.

Technology as a tool for teaching and learning is now a common practice in most schools and in many organisations. Dilworth (2003) as cited by Abdullah (2010) suggested that as technology becomes more prevalent as a tool for training, classroom and off the job training will decline.

Saghafian (2009) suggests that the adoption of technology is associated with excellence and advancement, and organisations are implementing it in all structures and processes including training and development. Technology for education, or educational technology has to date not been clearly defined, as most researchers describe the concept as complicated. The definition has been described to be as complicated as trying to define applied social science (Luppicini, 2005).

2.3.1 Definitions of Educational Technology

"Educational technology as an academic domain is relatively new; and much debate exists as to how to clearly define the discipline" (Lowenthal and Wilson, 2010).

In 2005 Luppicini defined educational technology as "the field concerned with the design, development, utilization, management, and evaluation of processes and resources for learning."

Richey (2008) as cited by Al – Ammary (2012) defines educational technology as "the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources"

Aziz (2010) defines educational technology as "the considered implementation of appropriate tools, techniques, or processes that facilitate the application of senses,

memory, and cognition to enhance teaching practices and improve learning outcomes."

From these definitions it is evident that whilst some researchers believe that educational technology refers to technology as a tool for education, others do not limit the definition to technology only but include all appropriate learning tools, processes, practices and techniques that improve learning. For the purpose of this study, we concentrate on the technological tools available for educational purposes within organisations.

2.3.2 Importance or Purpose of Educational Technology

Technology today is being considered a critical literacy for employees, just as reading and writing are (Becker et al., 2012). Millenials (those born between 1982 – 2002) are described as "digital natives" by Langan (2012). The methods that this generation uses to collect and understand data and information is different to that of the generation before them. The methods used to train them should also be tailored for better learning motivation and commitment and knowledge transfer.

2.3.3 Types of Educational Technology

E-Learning, which is defined as learning that is delivered by technological means, have more efficiencies when compared to traditional training and development methods (Becker et al., 2012). These efficiencies include offering training across geographical areas to larger number of employees in a shorter period of time more efficiently and cost effectively than traditional methods.

Srivastava and Agarwal (2013) suggests that e-learning, or "technology supported learning", includes "Mobile technologies, Simulations and web based training".

Mobile learning and Web 2.0
Training trends for the future all tend to lean towards mobile learning. The new buzz concepts seem to be about "blended learning that integrates the best of Web 2.0 learning programmes and social media, accessible via both web and mobile devices"

An independent report released in 2009 about Web 2.0 technologies found that the use of this technology was high across all age groups, and results in a sense of communities of interest and networks. The report suggested that group spaces like social networking sites could be developed for learning and teaching. It found that engaging in Web 2.0 technologies developed skills sets that "matched 21st century employability skills like communication, collaboration, leadership and technology proficiency" (Aitken, 2010).

Social networking sites are inexpensive and practical platforms on which to share short videos on particular skills or to share necessary training and development material. Technology allows for trainers to upload data to an organisations dedicated channel on these sites which can then be accessed by the organisations users. Social media sites like Twitter, Facebook and YouTube are expected to be utilised to a great extent for training and development in the near future (Aitken, 2010). Engaging in Web 2.0 technologies developed skills sets that "matched 21st century employability skills like collaboration, leadership, communication and technology proficient"

Donnelly (2009) states that "simple, self-contained processes, where specific knowledge can be retrieved/accessed in a certain moment (e.g. definitional or quick hit "top tips" information) are the most common type of content for mobile learning. The knowledge or information should add value at the exact moment it is needed.

Research has shown that with the advent of smartphones and the range of applications available for them, mobile learning will grow. Although research around this form of e learning is still lacking, it has been found that it is taking roots in all aspects of learning (Muyinda, 2007 and Male and Pattinson, 2011).

There are many successes recorded of the impact of mobile technology and their apps and tablets as tools in learning and development. These devices are changing the landscape of learning within organisations (Kukulska – Hulme, 2013).

<u>Simulations</u>

Computer generated simulations were traditionally used to train and develop learners in situations where it was too expensive or extremely risky to learn in the real world. The virtual environment allows trainees to learn and make mistakes safely and without risk. Today, simulations have been adapted to also develop trainee behavioural skills which result in users becoming more flexible and efficient when dealing with various scenarios. It accelerates learning by exposing learners to different task environments in a short period of simulation. Management or business game simulations are an example of this. (Wood and Birney, 2009)

Clarke (2009) found that business simulation programmes develop learner's conceptual and analytical abilities because they "learn by doing" from a real business problem scenario.

Quinn (2013) talks about <u>"gamification"</u> as a type of blended learning technology for the future. This is a form of virtual interaction. It introduces "game mechanics into non- gaming activities". He suggests that users could game in an instructor environment too, and not just in an e-learning environment. The technology organisation Gartner, Inc. predicts that 70% of Global 2000 organisations would have implemented at least one "gamified" application by 2014.

<u>Podcasting</u>

Podcasting is another e-learning tool, is an efficient and cost effective method of ensuring that information or knowledge is available at any time. The software and hardware allows for easy downloading of audio files that users can access 24/7. The tool requires minimal outlay and has few barriers for adoption (Ashraf, 2009)

Conferencing:

<u>Videoconferencing</u> is an old and known concept, but technological advancements have rejuvenated it as an appropriate training tool. It creates a high definition virtual learning platform that makes the experience more real for the user. With users on both sides being able to make eye contact, read body language and pick up on conversational queues, video conferencing today is becoming ideal for virtual training environments (Aitken, 2010).

Web conferencing allows for users to interact in various ways online, sharing and editing documents and presentations during their learning sessions. This method becomes ideal when there are geographical barriers and group work is necessary.

Audio conferencing can be used as a quick, cheap and effective learning tool for both planned and unplanned training sessions. Training can be set up by a simple invite to, and then a dial in by, the users. Technology now allows for these audio sessions to be recorded and downloaded by users as required. This tool creates a platform for those who prefer audio as a learning preference.

Wiki software now allows for the creating and editing of interlinked web pages resulting in collaborative online sites that trainers can use to complement training and learning sessions and also brings learners together (Aitken, 2010).

Virtual Worlds

Virtual worlds like "Second Life" will take off as a simulated training environment in the next five to ten years. The programme is relatively expensive and there is no research that currently proves its value in comparison to face to face training interventions.

Klopfer et al. (2009) state that although simulations and digital games provide proven successes, the adoption of these tools have been slow. The slow uptake of educational technology tools like virtual learning have been manifested from misconceptions that mastering such methods is too difficult, and that face to face sessions can never be replaced or replicated as adequately with e-learning tools. (Aitken, 2010)

The dilemma as identified is that technology is constantly changing. In order to implement educational technology organisations might incur high costs with replacing the ever changing software and hardware and internet applications necessary for these types of training and development initiatives (Lowenthal and Wilson, 2010).

However, technology analysts in 2009 predicted that more than 50% of classroom training will be hybrid in nature, and that more than 80% of learners will utilise mobile technology as a learning tool (Ashraf, 2009).

The 2010 learning and talent development survey report in the UK showed that 62% of organisations used e-learning initiatives more than they had in previous years and that time spent on workshops and conferences decreased by 26% (CIPD Report, 2010).

In 1994 only 4% of American companies were using e-learning technologies, and in 2011 the stats stood at 77%. "In 2011, 51% of companies delivered at least one training session via eLearning to over 50% of their employees, compared to 39% in 2010. By 2019, half of all classes will be done online." (Srivastava and Agarwal, 2013)

The reason for this is that not all e-learning concepts are so costly and radical that it deters users. Adding a video tutorial for example, to an existing site, has low costs attached to it.

In recent years, as technology has become a part of the daily lives of both old and young people, and as technology evolves into providing easier to use more intuitive user interfaces across multiple platforms, educational technology has improved e-learning experiences. It is becoming a tool that is accepted and trusted in training environments. (Aitken, 2010)

2.4 Training and Development Downtime

Downtime in a highly competitive environment is costly. Training and development is therefore sometimes referred to as a luxury by organisations, especially in difficult economic conditions when cost cutting and lean strategies are common. Organisations generally bare all of the costs associated with training, be it directly through paying the trainers or training institutions for the training interventions, or

indirectly, through the loss off actual working time or productive time (Lopes and Teixeira, 2013).

There are many equations that can be used to calculate the average cost of downtime. Below is a simple equation, and it is suggested that a repetition of this equation is made for every department and for different employee levels within an organisation since labour costs and the impact of downtime varies per department. For a more efficient process similar employee levels may be grouped together (Arnold, 2010).

2.4.1 Equation to calculate the average cost of downtime

LABOR COST = P x E x R x H

Where:

P = number of employees affected

E = average percentage that are affected

R = average employee cost per hour

H = number of hours of no productivity

Revenue

The simplest way to project the potential annual revenue loss from downtime is with the equation:

LOST REVENUE = (GR / TH) x I x H

Where:

GR = gross yearly revenue

TH = total yearly business hours

I = percentage impact

H = number of hours of downtime

2.4.2 Downtime and operational hurdles

Downtime or lost time due to training and development could also lead to the following operational hurdles if not managed critically.

- Overall productivity within a department will drop when fewer employees are available for actual productive work, and those left behind to carry a double load might rush tasks resulting in poorer quality or an increase in errors.

- Employees on training and development initiatives could miss deadlines or due dates which often accumulate or snowball as the deadlines come up.

- Employees not attending training and development initiatives are usually tasked to fill in for those on training which sometimes builds resentment and decreases morale which in turn further decreases productivity.

- In desperate times, costs increase further when operations management implements overtime to get the work of training employees through.

- With fewer employees available on to answer phones or man counters Customer service suffers as fewer employees are available to meet customer needs leading to decreased revenues (Arnold, 2010 and Lopes and Teixeira, 2013).

Organisations that understand the high costs of downtime can plan accordingly so as not to lose competitive advantage. Training and development technology aids in fewer classroom interventions, or shorter classroom interventions freeing up costly hours that can be utilised in operations for better productivity and efficiency (Lopes and Teixeira, 2013).

2.5 Employee learning preferences for different learning platforms and its impact on training accessibility.

(Boulton-Lewis et al., 2006 as cited by Moreno et al., 2013) found that successful organisations constantly generate new knowledge, with the implication that employees need to constantly learn and be able to adapt to changes efficiently. New innovative learning methods and ways of sharing information has become critical. Internet based technologies today provide a major training platform. Learners participate in interactive learning anywhere at any time. Learning content is integrated according to learners needs providing new skills to learners to improve productivity and performance (Chen 2010; Chiu and Wang, 2008; Karaali, 2011 as cited by Moreno et al., 2013).

E learning courses have changed drastically and its current architecture is now better structured than ever before. Courses are shorter containing high levels of interactivity, more subject matter focused and contains many hyperlinked additional materials to suit different learning preferences. This allows for better control by a learner of the depth and breadth of their learning (Little and Knihova, 2014).

Technology allows for learners e-learning material to be waiting for them in an easily accessible cloud. The cloud enables for smooth integration of mobile learning and social learning into the learning process. With the advent of Apples iCloud, iPhones, iPods and iMacs learners now have access to content synchronisation. This results in the anytime and anywhere downloading and uploading of the most current versions of learning content by the learners in an easy and convenient manner (Little and Knihova, 2014).

Learners are consuming greater amounts of data using devices like notebooks, tablets, smartphones and the emerging phablets (tablet and smartphone capabilities).
With the increasing use of mobile devices learning content is also being expected to be delivered via multiple platforms (Little and Knihova, 2014). Learning material developers will be challenged to design accordingly.

To avoid developing multiple versions of learning content, HTML5, which is a tool that enables offline web applications and also features audio and video support, can be used as a content solution that adapts itself to different screen sizes. This will save time, money and effort for training providers and because learners switch between devices through their day, multiple platforms and integrated solutions offer learners adaptive learning in a personalised context within a flexible and convenient learning environment. The learner can access the appropriate blend of what they need when they need it and on platforms they prefer (Little and Knihova, 2014).

Hejazifar (2013) suggested that organisations shy away from customising training interventions and rather prefer the "one size fits all" type of interventions as this has a lessor negative impact on return on investments (ROI). However, research has been undertaken to study the impact of customised training and development and

learning on organisations. A report published in 2010 by Adams, who performed a study within a large Canadian Bank, suggested that there was a "definite link between learner uniqueness and characteristics and job performance in the workplace". When employees learnt something in a preferred training method, their assessments were better than when they had no control on the learning method used.

Technology and rapid technology advancements already support training customisation. Salman Khan, the founder of the Khan Academy, set up a website that assists students on various topics, at no cost, across the globe. His site includes videos, tutorials and assessments. Students get immediate online feedback on their attempts at the quizzes and other assessments. Organisations that have employees to train across different business domains, could create websites loaded with databases, not just of conventional theory modules, but also content in video and audio that employees could access at anytime from anywhere. If Sal Khan can create and offer this service free to global students, organisations can creatively implement the idea at low costs too. (Khanacedemy.org, ND)

Sarabdeen (2013) found that learning styles have adapted and developed over time. Training providers understand that learning styles differ and if training material is delivered on platforms preferred by learners then this creates enthusiasm and a motivation among learners to learn and practice what was learnt. Sarabdeen suggested that training providers should deliver training as per the needs of the learner rather than the convenience of the training provider. This implies that various learning styles need to first be acknowledged before training interventions and material are developed.

2.6 Return on Investment (ROI).

A challenge for many organisations is how to enhance training and development initiatives in order to both improve access to training and also cut down on training and development downtime whilst achieving desired return on investment (ROI) (Percival et al., 2013).

A study carried out in 2013 by Percival et al. showed that whilst training and development sometimes resulted in a low or no ROI, it is still a critical investment, and a necessity for as long as technology advanced. Organisations would need to analyse their return on investment for training and development initiatives carefully and strategically for competitive results.

The South African Learning and Development Industry report (2013) showed that while only 9% of organisations measured the financial ROI of training programmes in 2004, this figure has increased substantially. In 2010, 39% calculate the Rand value ROI of training programmes. From these statistics, it is evident that organisations are being more strategic with learning and development initiatives.

Ng and Dastmalchian (2011) suggest that organisations can maximise on training and development expenses by first ensuring that the training and development is worthwhile to the learners. They found that the implementation of policies and processes that motivate learners to participate in training and development programmes, and the critical practice of assessing the effectiveness of these programmes could yield positive benefits. In order to motivate learners, organisations could base promotions on the condition that specific learning programmes are completed, or they could offer increases in salary as learners up-skilled via learning and development programmes.

Ng And Dastmalchian (2011) also found that for training and development programmes to be truly effective, close attention needs to be paid to the evaluation of these programmes effectiveness. This will ensure that training is given for the right reasons, at the right time and with appropriate design and structure that will both motivate employees and make the most of training and development budgets.

Phillips and Phillips (2011) suggest that new technology implementation has for year's eluded accountability. Organisations willingly implemented technology without fully understanding how or if the implementation would result in appropriate ROI. Today, with organisations competing in a volatile marketplace, stricter control and accountability over funds is critical. Executives today want processes in place that demonstrate accountability and are committed to measuring return on investments on technology projects, especially in the training and development field.

Effectively managing technological investments and technological change results in a competitive advantage. Likewise investing in a variety of training and development practices in order to build a workforce that can compete with the best can result in competitive advantage. Human resources management (HRM) practices within organisations are geared at creating competitive advantage through its human capital and training and development is a primary practice to ensure a qualified and flexible workforce (Percival et al., 2013).

An organisations investment in training and development requires careful analysis to determine if sufficient evidence exists that proves that the firm's investment will result in significant returns on that investment. Careful analysis and evaluation will also ensure that executives understand the economic impacts of the organisations investment or non-investment in training and development programmes. (Aragon Sanchez as cited by Percival et al., 2013)

Research proving the positive relationships between training and development and an organisations productivity, and training and development and an organisations profitability, exist, however limited research exists on the cumulative ROI that can be realised at the establishment level with respect to productivity. Analysis and evaluation makes it possible to understand these micro level impacts of investments as macro level decisions are driven from these. (Cassidy as cited by Percival et al., 2013)

Oni, (2013) suggests that proper analysis of all training is also a critical requirement in ensuring efficiency, effectiveness and problem solving within organisations. O'Connor and Little, (2012) stated that oftentimes organisational training and development is disconnected from the core purpose of business and organisations are unable to explain if well designed training and development initiatives have achieved organisational goals and targets. Therefore proper evaluation techniques become necessary to ensure that training and development investments are of value to the organisation.

Bennington and Laffoley, (2012) found that whilst training and development evaluation is considered a priority by executives, only 8% of organisations actually

do so, and calculating ROI is rarely done. Tracking ROI commonly consists only of feedback obtained directly from trainees after training interventions. For higher standards of accountability within organisations training and development return on investments cannot only be measured by trainee feedback forms. Instead, ROI needs to be carefully analysed and calculated based on previously agreed upon measures and metrics which needs to be strategically set according to the organisations needs. This will allow training and development professionals to show how their training programmes are delivering value for the entire organisation and to efficiently and cost effectively deal with non-value adding initiatives.

Percival et al., (2013) suggests that organisations in the service sector place limited importance on training and development due to a lack of understanding on the influencing factors that lead to decisions around types of training and development activities to choose from and the different modes (classroom training, on the job training, e-learning) of training and development available for implementation.

Investment in training and development vary from organisation to organisation. The size of an organisation can dictate the intensity of the investment needed for training. Smaller organisations cannot absorb costs associated with a reduction in productivity as a result of classroom or out of office training interventions as well as larger organisations can. This would in turn dictate the mode of training delivery for smaller firms being more on the job type training interventions. (Percival et al., 2013). Large organisations enjoy the benefits of economies of scale and their costs associated with training and development is a smaller constraint when compared to smaller organisations. This results in a higher proportion of classroom training and out of office training in large organisations. (Percival et al. 2013).

Leaser (2010) suggests that managers and executives need to realise that even minimal improvements in a workforces skills can result in huge benefits for the organisation. Business areas which are directly impacted by a skilled, knowledgeable and flexible workforce include:

- ❖ "Increased productivity and performance improvement
- ❖ Stricter adherence to corporate policies

- ❖ Improved customer satisfaction
- ❖ Increased employee morale and retention
- ❖ Increased revenue"

Research carried out by Bassie (mid 1990) found a positive relationship between investments in training and development and high stock value. This research made it possible for training and development professionals to use monetary figures showing how investment in training and development pays off. Her research, like Leaser's, also found that training and development opportunities lead to employee retention, promotions, skills and knowledge, flexibility, satisfaction and overall, improved organisational performance. (Bennington and Laffoley 2012)

Leaser (2010) suggests that the costs of not training employees are higher than the costs of training them. Oni et al., (2013) states that training and development that serves the interest of the organisation is an investment and not a cost.

Research carried out by Owoyemi et al., (2011) found that organisations that cut back on investments in necessary training and development initiatives, will experience poor labour output and the organisation would be at risk competitively. Leaser states that trained employees are more cost effective to support than untrained ones. Costs associated with untrained employees include:

- ❖ "Increased down time – The employee will not be as productive while he tries to find out how to perform a task.
- ❖ Co-worker distraction – The untrained employee will distract co – workers with queries and requests for assistance.
- ❖ Rework – Untrained employees will result in poor quality work and reworks."

2.7 Organisational Culture

2.7.1 Organisational Culture

Bunch (2007) describes culture as "one of the most powerful and stable forces operating in organisations". Culture has been typically defined to include concepts

like values, beliefs and assumptions which become visible in employee behaviour and attitudes within the organisation (Hassi, 2011).

Although there is little scholarly attention given to the impact of organisational culture on training effectiveness, Bunch suggests that attention to the relationship between organisational culture and productivity and the use of technology has been proven.

Research has shown culture to be multi-layered with no one ideal culture existing, but instead "specific traits shared by many cultures may interact in unique ways depending on cultural beliefs, values, assumptions coupled with the history, industry and economy" of the organisation (Hassi, 2011).

Five levels of culture have been proposed by Bunch (2007): artifacts, Patterns of behaviour, Norms, values, and underlying assumptions.

Artifacts:
Examples of artifacts are the quality or elaborateness of the training facilities, training certificates handed out at elaborate graduation ceremonies, inviting well known guest speakers or important figures within the organisation to speak at training interventions and also the position in the hierarchy given to training leaders.

However, the real meaning of artifacts can be misconstrued if an organisation utilises elaborate training facilities and exorbitant budgets to provide training of little value to employees.

Patterns of behaviour
These can be described as the "observable activities such as decision making, communication, and new employee socialisation that reflect underlying beliefs, values, and assumptions".

An example of patterns of behaviour is the link that employees could see between training and development and the organisations reward system signalling career advancement or recognition for the employee. New employees rely on cultural cues,

and the behaviour patterns of existing employees would relay the importance of, or the frivolity of, activities like training and development within the organisation.

Behavioural norms

Behavioural norms "are the beliefs of organisational members that guide actions and emerge from previous experience and cultural reinforcement. An example is of individuals who may learn through personal experience or from stories that training is a frivolous endeavour.

Potential benefits to employees of training and development is a better prediction of training success than needs assessments and evaluations are if employees only perceive training within the organisation as inconvenient, a waste of time or a means to avoid work.

Values

Values have been described as "the importance given to certain aspects of the organisation such as quality versus quantity, and affect the preference for and effectiveness of training and development practices. No intervention will succeed in the face of conflicting values" (Bunch, 2007).

An example of a conflicting value is when creativity is built in to training programmes, but the organisation has a culture of rewarding mediocrity. Within a banking environment, for example, customer service training teachings will not transfer to the workplace if the organisation measures quantity rather than customer satisfaction.

Assumptions

Assumptions are believed to "begin as values that are confirmed through experience until they become taken for granted" (Bunch,2007).

Assumptions are thought to be difficult to identify because the people holding an assumption might not even be aware that they are doing so. An example is of a manager that might drive training and development but still cut training budgets.

Assumptions also influence how people perceive success and failure, so even if a training intervention is effective, higher productivity might not be attributed to it.

2.7.2 Organisational Culture and Training and Development

Adewale and Anthonia (2013) describe training as "the planned efforts by an organisation to facilitate employee's learning of job-related competencies. These competencies include knowledge, skills or behaviours that are critical for successful job performance. Training and development help in optimising the utilisation of human resource that further helps the employee to achieve the organisational goals as well as their individual goals".

They also suggest that training assists in the development of organisational culture through building perceptions and feelings that employees have about the organisation and practices within the organisation.

Organisational culture lies at the heart of the training and development programmes which are generally aimed at boosting innovation and creativity, productivity, creating an environment that enables learning in response to challenges and competitive pressures. Thus creating an adaptive culture and a culture conducive to training and development, and the adoption of technology, should be all managers' priorities. (Adewale and Anthonia, 2013)

Hassi (2011) and Bunch (2007) suggest that training and development does not exist in a vacuum, and that organisational culture and training and development is inseparably linked. Without organisational support, even the best designed programmes or the best trainers will not have positive results.

"Training failure can be a manifestation of the values, beliefs, and assumptions shared by members of various levels of organisational culture" (Hassi, 2011). Failing to incorporate organisational culture in training programmes might lead to programme failures.

2.8 Banks

Banking is a service industry and Human Resources Management (HRM) in a service industry is important. HRM manages the two key challenges facing banks today, which are risk and people. Banking success depends on how risk and people are managed. Skilled manpower results in efficient risk management (Chakrabarthy, 2012).

In today's competitive environments a banks survival depends on the value that they create for their customer. Customers choose to stay with a bank for various reasons, and these reasons are generated through and promoted by the banks human resources. Sufficient skilled manpower is in short supply in the banking industry (Chakrabarthy, 2012).

Like any resource the supply and quality of manpower needs to be managed properly. Training, up-skilling or reskilling of employees is critical in ever changing conditions. Employees need to be flexible, knowledgeable and competent in order to create a competitive advantage for their employer (Chakrabarthy, 2012).

"The banking sector in SA employs over 150 000 people with the bulk of this amount represented by the four major banks – Nedbank (28 494), ABSA (34 244), FNB (36 398) and Standard Bank (45 755)." (Banking Association of South Africa, 2012)

Like any other sector the banking industry is facing the challenge of creating sustainable profits in an ever changing macroeconomic environment. There are many opportunities for banks to create sustainable profits, like in technology investments, mobile banking, growth into Africa and targeting lower income markets. (Banking association of SA, 2012). Dietz et al 2013, suggest that the global banking industry will see a decrease or a flat-line of revenues to about 5% of GDP all the way through to the year 2020. They state that growth could occur however through product and service innovations.

The implication for Human Resources Management (HRM) within banks is that they need to ensure that the right people with the right skills are placed into these positions for optimum product and service innovation.

"According to the latest World Economic Forum Competitive Survey 2012/13, South African banks are rated 2nd out of 144 countries for soundness, while the country was rated 3rd for financial sector development. Currently, the SA banking industry consists of 17 registered banks, 2 mutual banks, 12 local branches of foreign banks, and 41 foreign banks with approved local representative offices." (Banking Association of SA, 2012). The presence of foreign banks raises competition levels in South Africa.

Simpasa (2013) states that there is a lack of sufficient research around competition in the African banking sector. Research does show though that South African banks dominate the African banking industry. South Africa's financial sector has been described as well-developed and comparatively competitive with other BRIC countries (Brazil, Russia, India and China). Out of emerging economies South Africa as one of the largest capital markets and the financial system is efficient in channelling capital to investment. Research conducted to evaluate the efficiency and competitiveness of South African banks found that there is room for improvement (Mlambo and Ncube 2011).

Competition within the South African banking industry is monopolistic with a few large banks dominating the scene. Research shows that these large banks do not compete outright with each other and policy makers of ongoing banking reform need to ensure greater competition and welfare gains for the economy (Mlambo and Ncube 2011).

Recently, smaller banks like Capitec Bank and African Bank have emerged as competitors tapping into lower income markets and providing entry level banking needs to this market (Banking Association of SA, 2012). This raises competition levels within the industry.

2.8.1 Current Training and Development trends in South African Banks

Increasing global and local competition coupled with volatile economic conditions force organisations to think and act more strategically and innovatively to gain competitive advantages over their rivals. A skilled and knowledgeable workforce in the service industry like Banks, can give the organisation a competitive advantage.

Reports have shown that the banking industry is investing in or looking to invest in better or more efficient training and development programmes. The 2012 South African Banking Learning and Development Report shows that South African banks increased spending on training and development initiatives from 3.11% of their payrolls in 2010 to 3.94% in 2011.
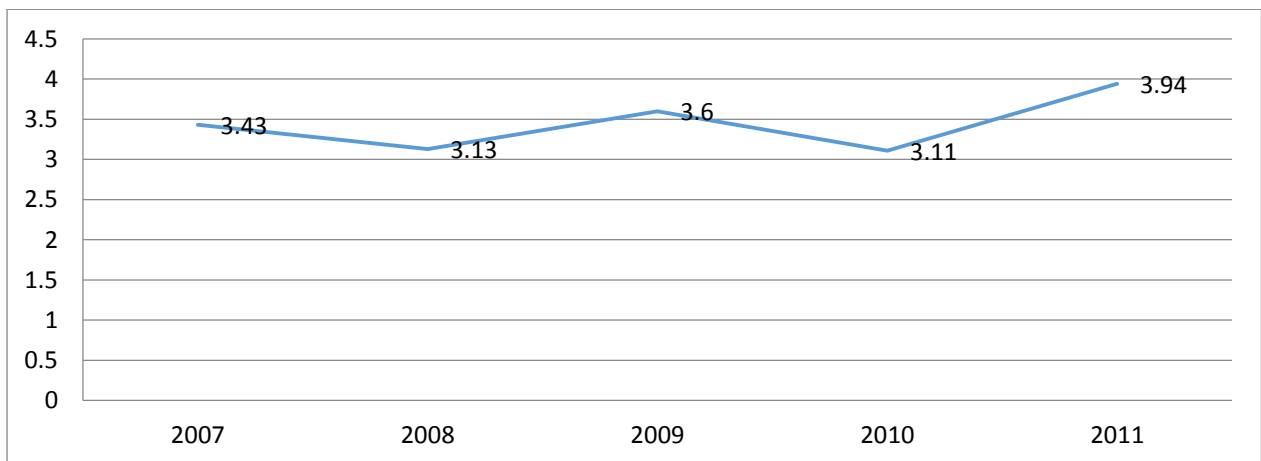
Comparative data with the UK and USA show that the hours of training per employee in South Africa has dropped whilst the percentage of organisations using e-learning as a training and development tool has risen from 33% in 2010 to 43% in 2011. Although these figures have improved, the cost of training and development per employee per year has increased year on year with 62% of organisations outsourcing training and development projects.

Comparative measures used	UK				USA					SA				
	2007	2008	2009	2010	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Number of companies participating	663	729	859	724	221	316	301	412	461	328	335	368	472	49
Average % payroll spent on training	-	-	-	-	2.33%	2.15%	2.24%	2.66%	3.23%	3.43%	3.13%	3.60%	3.11%	3.94%
Hours of training per employee	40	40	48	36	35	37	36	31.86	30.54	35	47	49	52	40
Annual spend per employee	£272	£300	£220	£254	$1040	$1103	$1068	$1227	$1182	R 2 814	R 3 613	R 4 023	R 5 007	R 6 898
Employees per trainer/HRD staff	-	-	-	-	216	227	253	227	315	135	278	148	138	157
% companies using e-learning	48%	-	-	62%	30%	33%	31%	36%	39%	30%	29%	27%	33%	43%
% of training outsourced delivery	-	-	-	-	25%	28%	22%	26%	30%	53%	54%	53%	52%	62%

Banks identified training needs in 2010 by using performance management data (68.9%), data from customer complaints (57.8%) and interviews (40%). The report also showed that 60% of organisations had adopted formal talent management strategies, which is 7% up from last year.

46% of organisations rate these strategies as effective or highly effective.
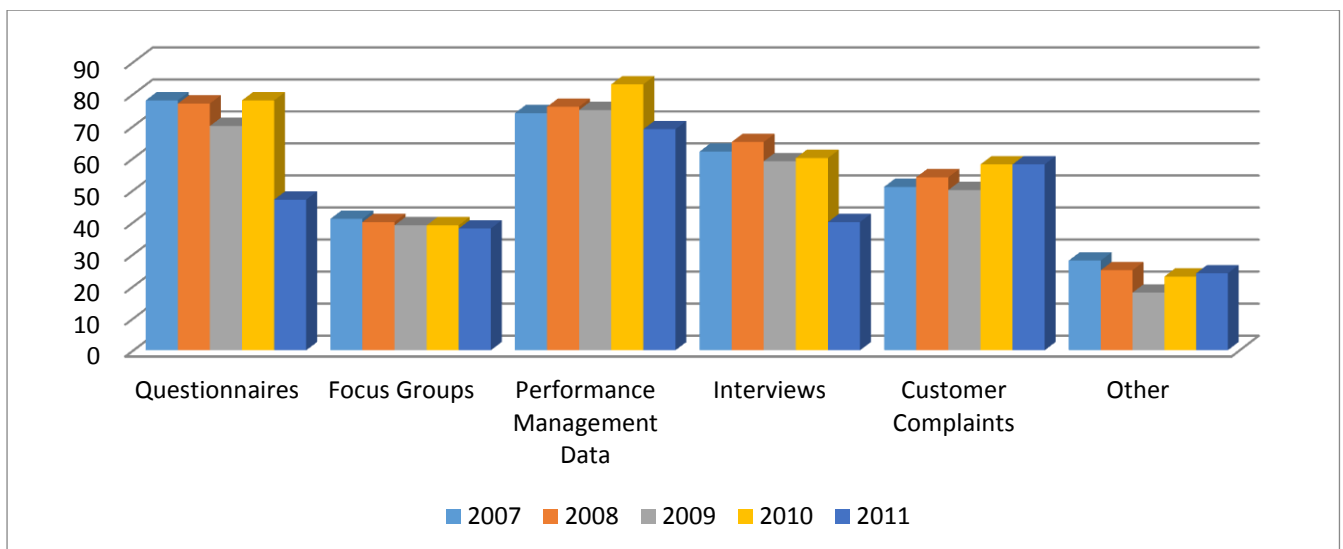
The report also shows that the most popular training delivery methods in 2011 were classroom based training, followed by e-learning, text based learning and then blended learning.
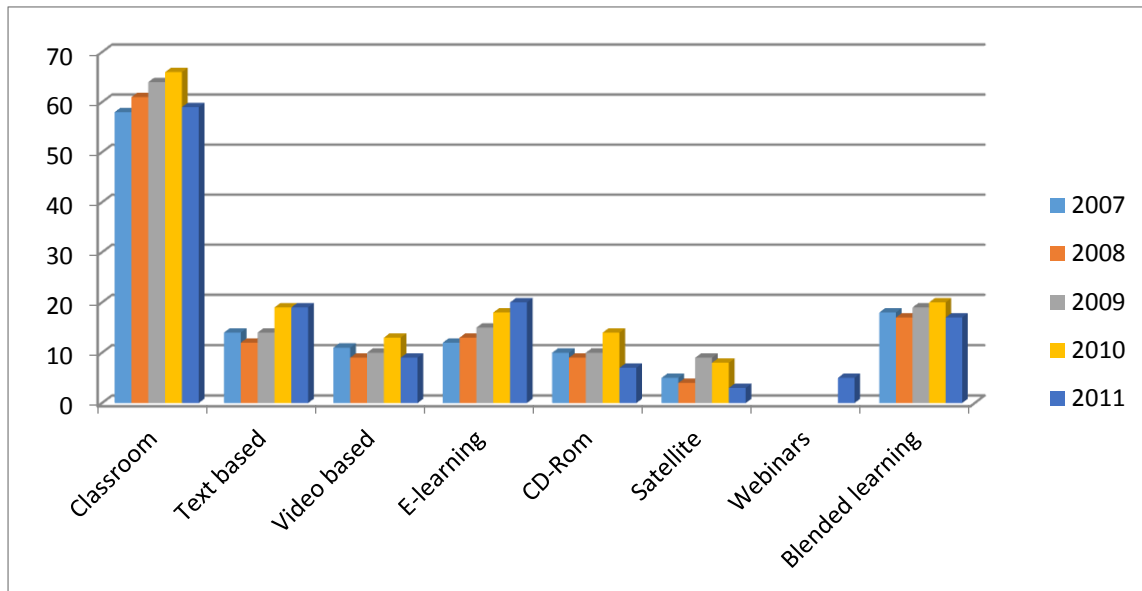
The report shows that significant changes were made in 2011 with regards to evaluating training and development programmes and projects for Return on Investment (ROI) purposes. At least 45% of organisations measured financial ROI on certain training and development initiatives. More than 85% of organisations in 2011 stated that they do pre and post assessments of training and development initiatives that enable ROI calculations, and the calculation of all input costs of the initiatives.
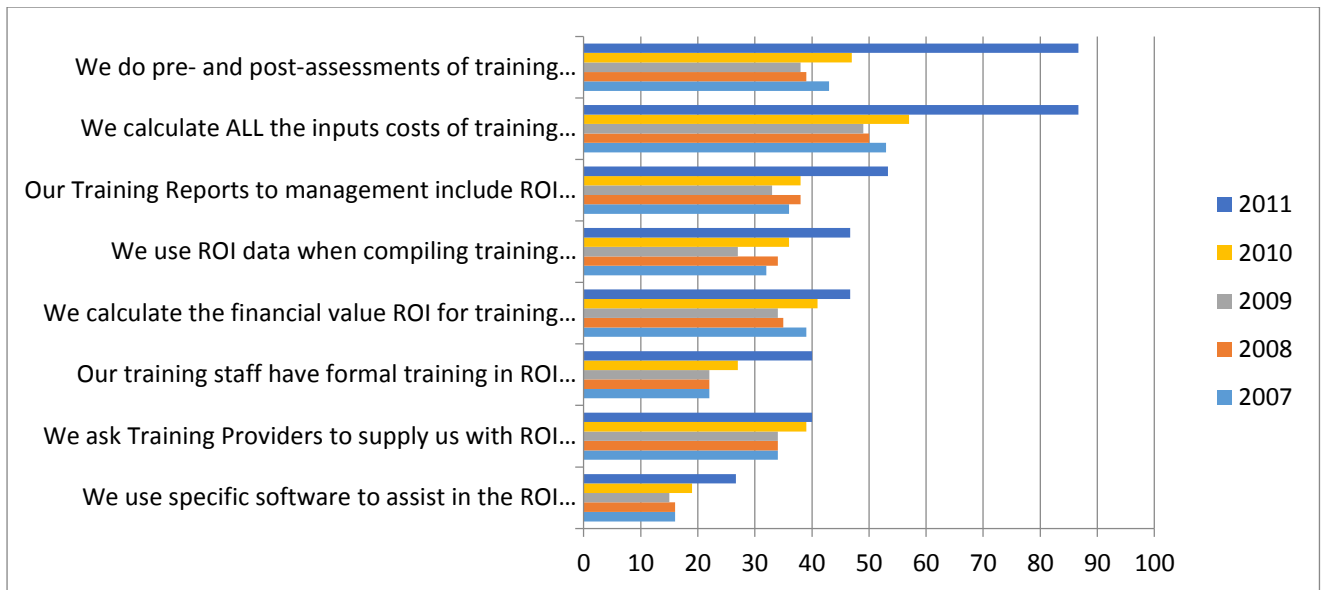
2.9 Conclusion

This chapter drew from various scholarly extracts to illustrate the relationship or links between training and development and technology, organisational culture, return on investment (ROI) and learning platforms and accessibility.

Like any other sector the banking industry is facing the challenge of creating sustainable profits in an ever changing macroeconomic environment. Organisations, including banks are looking to its workforce for competitive advantage. Training and development is thus urgent and important within the industry and efficient and effective training programmes are critical (Chakrabarthy, 2012).

Banks have year on year increased their spending and implementation of online or e-learning initiatives even though classroom interventions still rank as the most popular delivery method, with many reporting positive returns on this investment (The 2012 South African Banking Learning and Development Report).

Whilst banks keep their eye on strategic advantages, research shows that even the most soundly designed training programmes will fail without a positive organisational culture (Hassi, 2011 and Bunch, 2007)

The next chapter outlines the research methodology applied for this study.

CHAPTER THREE

3.1 Introduction

"Research Methodology is a way to systematically solve a research problem". It is a process that provides the details of the strategy utilised to address the research problem, the means of collecting data for analysis, the site and sample selection, and the analysis approach adopted (Kothari, 2011: 8).

This chapter outlines the research methodology adopted for this study. A description of the research strategy, research approach and design, study population and sample, the study setting and time horizons, the instrument used to collect the data, including the validity and reliability of the instruments administered, is outlined below.

3.2 Research approach and design

3.2.1 Research approach

The two basic approaches to research are qualitative and quantitative approaches. The qualitative approach involves the generation of data in the form of words and are generally gathered from interviews or responses on questionnaires to open ended questions, or through observation. (Sekaran and Bougie, 2013: 3)

In this study the quantitative approach was applied. This approach involves the "generation of data in a quantitative form which can be subjected to rigorous quantitative analysis" and are generally gathered through structured questions on a questionnaire (Kothari, 2011: 5).

The quantitative approach can be sub classified into inferential, experimental and simulation approaches. The approach for this study is inferential, as a "sample of the population is studied to determine its characteristics and it is then inferred that the population has the same characteristics" (Kothari, 2011: 5).

3.2.2 Research design

"Research design is defined as "a blueprint for the collection, measurement and analysis of data, based on research questions of the study." (Sekaran and Bougie, 2013: 95)

Research studies are either:

- Exploratory
- Causal or
- Descriptive in nature.

Exploratory studies are used when some details or information is known but more is needed to develop theoretical frameworks. Causal studies are used to determine if one variable affects another causing it to change. (Sekaran and Bougie, 2013: 97)

The research design for this study is descriptive in nature. It aims at describing the characteristics (beliefs, knowledge, opinions preferences) of certain individuals or group by obtaining data using a planned procedure. Its purpose is to also describe the state of affairs as it presently exists (Kothari, 2011: 37). Within Nedbank, the study will describe the current state of affairs with regards to educational technology and its impact on training and development.

Sekaran and Bougie (2013: 97) suggest that descriptive studies also aid in understanding group characteristics and in thinking systematically in a given situation. The study results in ideas for further research and aids in simple decision making.

3.3 Study setting and time horizons

Study settings can be either:

- Contrived (in an artificial setting) or
- non-contrived (in the natural environment setting).

In this study the non-contrived setting was used and the research was carried out in the natural environment within the bank as events continued normally with minimal interference from the researcher (Sekaran and Bougie, 2013: 99).

Time horizons of studies can be described as either:

- Cross sectional or
- Longitudinal.

A One shot or cross sectional study is when data is gathered once within a specified period only, whereas longitudinal studies entail data collection over multiple periods. For the purpose of this study a cross sectional study was used.

3.4 Research strategy

There are various research strategies or techniques for collecting data. Examples are:

- Experiments
- Observations
- Case studies
- Grounded theory
- Action research
- Surveys

Survey research was selected for this study. Surveys can be described as "a system for collecting information from or about people to describe, compare or explain their knowledge, attitudes and behaviour" (Sekaran and Bougie, 2013: 102). Surveys are relatively inexpensive to administer and can be sent to large number of people in a short time (Trochim, 2009: 108) which makes them ideal for cross sectional studies looking for primary data (Sekaran and Bougie, 2013: 113).

The survey method used to collect data in this study, was questionnaires. "A questionnaire consists of a number of questions printed or typed in a definite order on a form or on a set of forms" (Kothari, 2011: 100). They contain "pre-formulated

written questions to which respondents record their answers usually within rather closely defined alternatives" (Sekaran and Bougie, 2013: 147).

Two questionnaires were created; one specifically for managers within the sample and the other for any employee who has attended a training intervention or requires training and development interventions within the organisation. Questionnaires also work well for data collection in quantitative research approaches (Kothari, 2011: 103).

3.5 Questionnaire design

In order to minimise respondent bias and measurement errors three questionnaire design principles are necessary. The first is that the wording of the questionnaire needs to be appropriate and sophisticated and the type, form and sequencing of the questions should be well considered. The second refers to the researchers planning around how the variables are coded, scaled and categorised after the responses are received. The third principle pertains to the general appearance of the questionnaire (Sekaran and Bougie, 2013: 149)

In developing the questionnaire simple language was used to minimise doubt or bias. Questions were not contradictory and tricky and were kept short and concise. The questionnaire contained both rating and ranking scales and included nominal, ordinal, interval and ratio scales.

These scales are used in the following manner:

- Nominal scale – usually used to obtain personal data, example gender
- Ordinal scale – used to rank preferences, example rank the following in order of preference
- Interval scale – used when responses to varying number of points on a scale can be tapped and measured and then summed across the points. The Likert scale is a popular interval scale used.
- Ratio scale – used when numbers are required on objective factors

The questionnaires were formulated to answer the research questions of the study. These included:

- The current culture of training within Nedbank
- The current use of educational technology for training and development within Nedbank
- The current perceptions of training and development within Nedbank
- The perceptions of educational technology and its impact, if any, on training and development at Nedbank
- The effect of training and development on lost time or downtime at Nedbank
- The effect of educational technology on lost and downtime at Nedbank
- The preference of educational technology to traditional learning methods and platforms within Nedbank
- The ROI changes within Nedbank before and after educational technology initiatives

3.6 Method of questionnaire administration

Questionnaires can be personally administered or emailed to respondents. The main advantage of personally administered questionnaires is that bulk collection of the completed questionnaires can occur in a short period of time, and that on the spot clarification of doubts that respondents might have as they complete the questionnaire can occur. A disadvantage to this method is that the researcher could introduce a bias in responses based on the researcher's explanation of questions to respondents (Sekaran and Bougie, 2013: 147).

The main advantage of mail or electronic questionnaires is that it can be administered to a large group in a short period of time, and also offers the respondent with the convenience of completing the questionnaire at their leisure. One of the disadvantages though is that response rates are very low (Sekaran and Bougie, 2013: 147). In order to boost response rates follow up emails can be sent or respondents can be notified in advance of the questionnaires.

In this study the questionnaire for the Managerial sample group was emailed to them for online completion and submission using the Questionpro site, and the employee questionnaire was administered as a hardcopy within a controlled environment in the organisation. This resulted in a bulk collection of responses in a short period of time and a reduction of bias. The two week deadline set for the completion and collection of questionnaires was met successfully.

3.7 The study population and sample design

A population can be described as "the entire group of people, events or things of interest that the researcher wishes to investigate, and a sample is a subset of this population" (Sekaran and Bougie, 2013: 240). When carrying out research studies, a sample is selected as the focus of the study. "The group you wish to infer to is called the population, and a sample is the group that you select from this population to be in your study" (Trochim, 2009: 44).

The reasons for using samples as opposed to an entire population is because it is practically impossible, time consuming and costly for research to be carried out on thousands of elements in relatively short periods of time, and thus a subset of the population is researched and the results are then inferred to the population (Sekaran and Bougie, 2013: 240). The sample selected should also be bias free and needs to represent the characteristics of the population in order to draw valid conclusions (Kothari, 2011: 152).

In this study the population and the sample are from 30 retail Nedbank branches in the greater Durban area.

3.7.1. Sample design

To investigate the impact of educational technology on training and development in Nedbank all employees who have attended training interventions or require training and development interventions, or any Manager who manages employees who attend or require training and development initiatives, were considered part of the

sample frame. The sample frame is a "representation of all the elements in the population from which the sample is drawn" (Sekaran and Bougie, 2013: 245).

There are two types of sampling design.

1. Nonprobability sampling, where the elements do not have a known chance of being selected for the sample, and
2. Probability sampling, where the elements have some known chance of being selected for the sample.

Probability sampling can be further classified as simple random sampling or complex probability sampling. "Random sampling ensures the law of statistical regularity which states that if on average the sample chosen is a random one, the sample will have the same composition and characteristics of the population" (Kothari, 2011: 60). The five most common complex probability sampling designs are:

1. Systematic sampling
2. Stratified random sampling (Proportionate and disproportionate),
3. Cluster sampling (single and double stage)
4. Area sampling
5. Double sampling.

For the purposes of this study two questionnaires were created; one for managerial employees and one for all other employees. When the "population is divided into mutually exclusive groups that are relevant, appropriate and meaningful in the context of the study, a process of stratification and segregation occurs followed by random selection of subjects from each stratum." This is known as stratified random sampling.

Stratified random sampling can be further classified into proportionate and disproportionate stratified random sampling. Proportionate sampling occurs when representations from each stratum are proportionate to the total number of elements in each strata, example 10% of members from each stratum. Disproportionate

sampling occurs when some strata are too small or large or when variability within a stratum is evident.

For the purposes of this study disproportionate stratified random sampling was selected, as the managerial group is much smaller than the employee group and proportionate sampling would have resulted in an inadequate number of managers studied.

The population for this study are the employees at Nedbank and the sample selected are employees at Nedbank in the greater Durban area. This form of sampling is known as "area sampling" because geographical sub divisions exist (Kothari, 2011: 65).

The sample design for this study is thus a multi-stage sampling design, using both cluster and disproportionate stratified random sampling methods (Trochim, 2009: 55)

3.8 Sample size

According to Sekaran and Bougie (2013: 269) the following rules for determining general sample size exist:

1. Sample sizes between 30 and 500 are generally appropriate for most research studies
2. A minimum of 30 elements are required when subsamples exist (male/female, managerial/non managerial etc)
3. The sample size in multivariate studies should be at least 10 times larger as the number of variables in the study
4. Samples of 10 to 20 is acceptable for simple experimental research with tight experimental controls.

The sample size for this study was 110 (20 managers and 90 non managerial). The responses received were from 15 managers and 84 non managerial staff (90% response rate).

3.9 Reliability and Validity

The quality of study results are only as good as the instruments developed to accurately measure variables that they are meant to measure. The reliability and validity of these instruments are thus critical.

 "Reliability is a test of how consistently a measuring instrument measures whatever concept it is measuring and validity is a test of how well an instrument that is developed measures a particular concept it is intended to measure" (Sekeran and Bougie, 2013: 225).

3.9.1 Reliability

The reliability of an instrument is an indicator of how stable and consistent the instrument is at measuring what it is intended to measure. There are two tests for stability (Sekaran and Bougie, 2013: 229)

1. Test – retest reliability: This involves administering the same questions to the same group of respondent at different times. The correlation of the scores obtained from each administration is known as the test – retest coefficient. A high score reveals a stable and reliable instrument.
2. Parallel – form reliability: By changing the order and wording of questions of the original instrument researcher test for error variances that could be caused by wording and question sequence. If the results of both the instruments are highly correlated then the instrument is reliable with minimal error variance.

There are two tests for consistency:

1. Interim consistency reliability: the degree to which independent measures of the same concept is correlated with each other - high the coefficient, the better the instrument being used.
2. Split – half reliability: reflects the correlations between two halves of an instrument.

3.9.2 Validity

There are a few tests to measure the validity of instruments. These may be grouped under three broad headings. (Sekaran and Bougie, 2013: 226)

1. Content Validity

Content validity ensures that there is sufficient representation of the measures needed to tap the relevant concepts. Researchers could have a panel of expert judges evaluate the instrument for validity. If on the face of it the instrument looks like it contains effective measures to tap the relevant concepts then it can be said that the instrument is content valid (Face Validity).

2. Criterion – related validity

If the relevant measure differentiates elements on a criterion it is expected to predict then criterion related validity may be established. This can be done by establishing concurrent validity and construct validity.

- Concurrent validity: individuals should score differently when the scale discriminates those who are known to be different.
- Predictive validity: "the ability of the instrument to differentiate among individuals with reference to future criterion."

3. Construct Validity

Construct validity assesses if the instrument taps the relevant concept as theorised. This can be established using convergent validity and discriminant validity.

- Convergent validity: when scores on two different instruments measuring the same concept are highly correlated.
- Discriminant validity: based on theory, two variables are predicted to be uncorrelated and is empirically found to be so.

Validity can be established in the following ways (Sekaran and Bougie, 2013: 227)

1. Correlation analysis for concurrent, predictive, convergent and discriminant validity.
2. Factor analysis for establishing construct validity

3. In establishing measure robustness, the multi-trait, multi-method matrix of correlations can be used.

For the purpose of this study the questionnaires were evaluated by a statistician for validity and by five individuals for reliability. Feedback was received and any areas of doubt or contradiction were rectified. The test was again administered and no further issues were identified. The questionnaires were then administered to the sample group.

3.10 Ethics, confidentiality and anonymity

The data collected needs to be ethically managed by researchers. The data should be treated with confidentiality and the researcher needs to guard against the respondents privacy. Respondents cannot be forced to respond to the study and their self-esteem or self-respect should not be violated in any way. The researcher should not misrepresent the nature of the study and intrusive information cannot be solicited. (Sekaran and Bougie, 2013: 162)

For the purposes of this study a cover letter was sent out to all respondents notifying them of the nature of the study and respondents could choose to either participate in the study or not, without any repercussion or bias. The letter is attached as an annexure (Annexure 1).

3.11 Permission to conduct study

Permission was requested from the gatekeepers of the organisation to ensure that the data was collected with the knowledge of the organisation and results and recommendations of the study would be shared with the relevant gatekeepers.

3.12 Conclusion

In order to answer the research questions of this study, a research strategy was necessary. A quantitative approach was selected as ideal for the purposes of the

study. The research design of the study is descriptive in nature and was carried out in a contrived setting and a cross sectional time horizon was applied.

A multi-staged sampling design was employed, utilising both cluster and disproportionate stratified random sampling methods. The survey method was used for data collection and two questionnaires were created and administered to Managers and Non managerial employees within Nedbank. Reliability, validity, ethics and confidentiality factors were considered and adhered to, to ensure an accurate study with limited bias or error.

CHAPTER 4

4.1 Introduction

Two questionnaires were administered to managerial and non-managerial employees respectively at Nedbank in the greater Durban area. In this chapter we analyse the collated data from these questionnaires.

4.2 Results of non-managerial employee questionnaire

A total of 84 employees completed the questionnaire. Participants' socio-demographic information is summarised in figure 4.2.1 to figure 4.2.5.

Figure 4.2.1: Age distribution of the employees
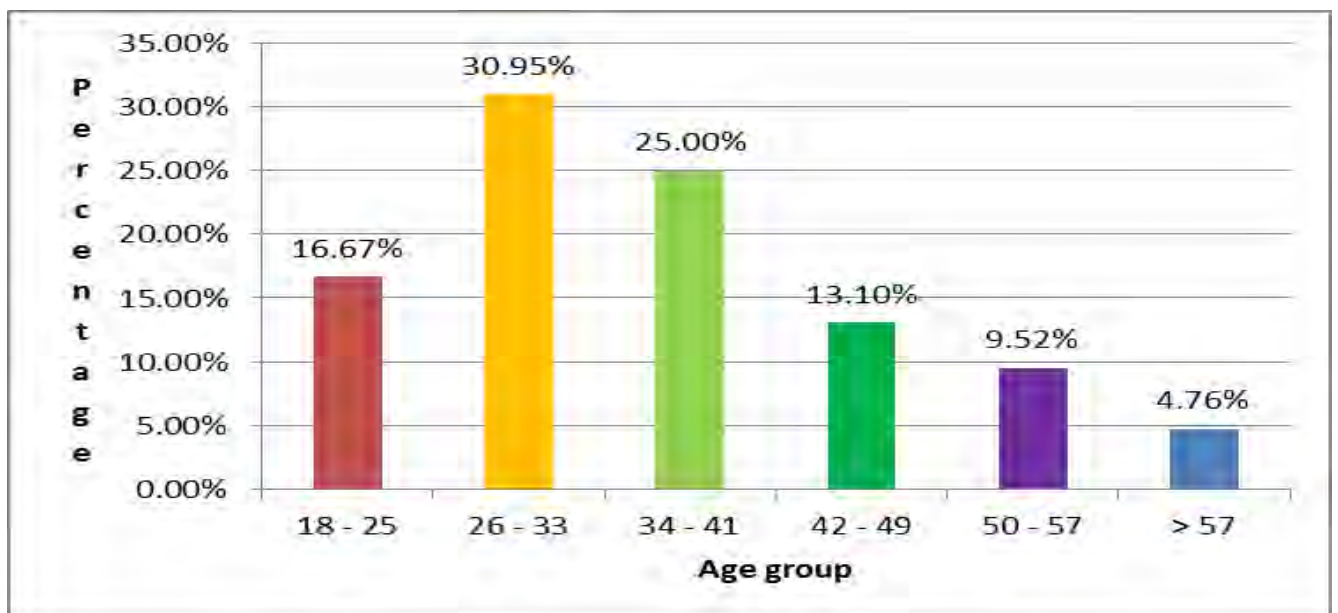
It was found that majority of the participants (72%) were below the age of 42 years.

Figure 4.2.2: Race distribution of the employees
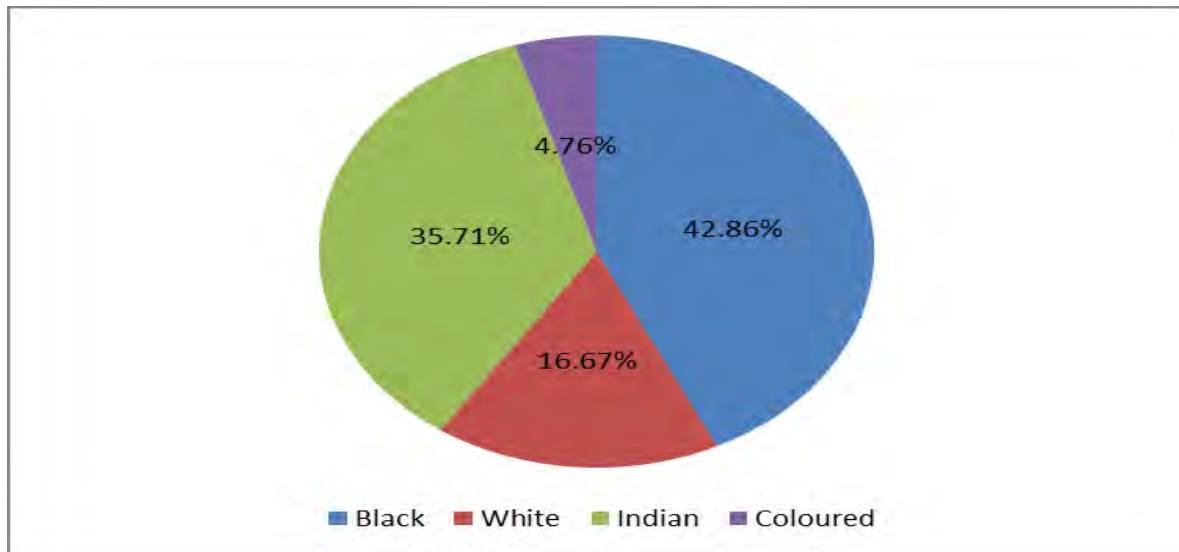
43% of the respondents were Black, in line with Nedbank's transformational initiatives.

Figure 4.2.3: Gender distribution of the employees
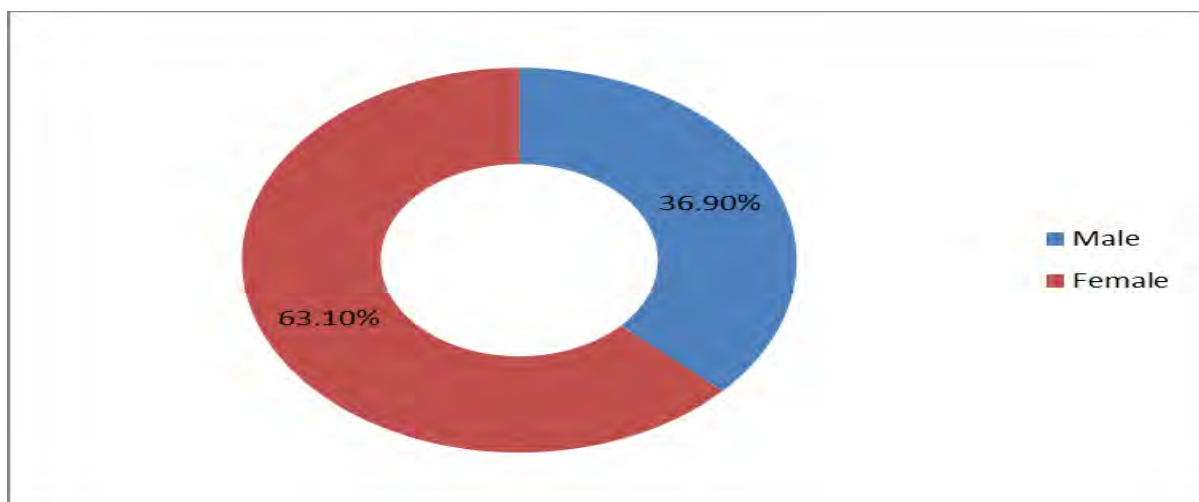
63% of the respondents were female, in line with Nedbank's transformational initiatives.

Figure 4.2.4: Distribution of academic qualification of the employees
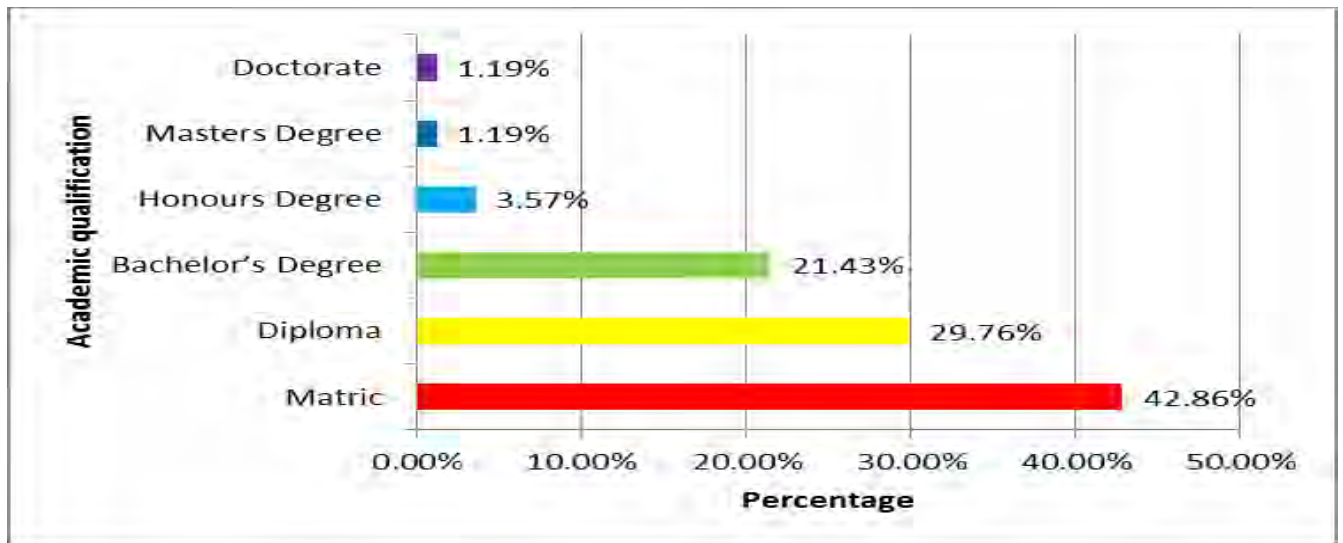
About 30% of respondents had a diploma and around 43% had matric only.

Figure 4.2.5: Frequency distribution of years of services of the employees
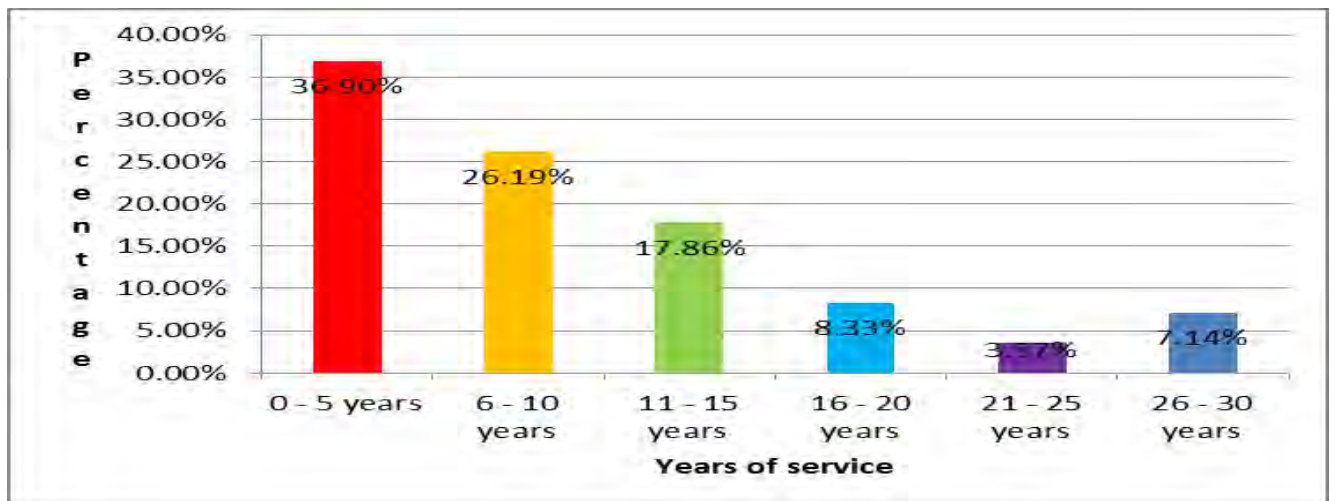
About 63% of respondents were working 10 years or less at Nedbank.

Table 4.2.1: Most preferred method of learning among the employees

Which of the following is your MOST preferred learning method?	Frequency	Percentage
Classroom training	**37**	**44.05%**
Online training	10	11.90%
Simulations/virtual classrooms	5	5.95%
One on one training/coaching	4	4.76%
On the job training	8	9.52%
Mixed method	20	23.81%

With regards to learner preferences, it was found that about half (44%) of the employees preferred classroom training followed by mixed method (24%) and then online training methods (12%). The rating of each method is summarised in table 4.2.2 below.

Table 4.2.2: Rating of methods of training delivery by the respondents

Methods of training delivery	Rating (5 = most preferred, 1 = least preferred)				
	1	2	3	4	5
Classroom training	3.57%	4.76%	20.24%	19.05%	**52.38%**
Online / systems training	14.29%	15.48%	**32.14%**	23.81%	14.29%
Simulations/virtual training	5.95%	10.71%	33.33%	**34.52%**	15.48%
On the job training	8.33%	15.48%	**34.52%**	23.81%	17.86%
One- on- one training	10.71%	19.05%	**32.14%**	20.24%	17.86%

Table 4.2.3: Rating of training material

Methods of training materials	Rating (5 = most preferred, 1 = least preferred)				
	1	2	3	4	5
Video	9.52%	1.19%	15.48%	32.14%	**41.67%**
Audio	9.52%	15.48%	**35.71%**	34.52%	4.76%
Text	4.76%	10.71%	16.67%	**34.52%**	33.33%

For the rating of training materials, video was the most preferred followed by audio and text material at 35%

Table 4.2.4: Likelihood to accept mobile learning as a training preference

Variable	Frequency	Percentage
How likely are you to accept mobile learning as a training preference?		
Most Likely	15	17.86%
Likely	**29**	**34.52%**
Maybe	18	21.43%
Unsure	8	9.52%
Least Likely	14	16.67%

When asked about mobile learning, more than half (52%) indicated that they were likely or most likely would accept mobile learning as a training preference.

Table 4.2.5: Association between acceptability of mobile learning as a training preference and being technologically savvy

```
    8. How
 likely are
    you to
    accept
    mobile
  learning
      as a
  training
preference    10. How technology savvy are you?
         ?       1        2        3        4 |    Total
───────────────────────────────────────────────────────────
         1      10        4        0        1 |       15
         2      10       10        8        1 |       29
         3       4        8        6        0 |       18
         4       1        3        1        3 |        8
         5       3        3        6        2 |       14
───────────────────────────────────────────────────────────
     Total      28       28       21        7 |       84

          Pearson chi2(12) =   26.5858    Pr = 0.009
             Fisher's exact =               0.012
```

It was found that there was significant association between acceptability of mobile learning as a training preference and being technologically savvy (p = 0.012).

Table 4.2.6: Use of technology and social media by the employees

Variables	Frequency	Percentage
How technologies savvy are you? (Technology Savvy - comfortable with technology, confident in your use of different technologies)		
Very technology savvy	**28**	**33.33%**
Technology savy	28	33.33%
some-what technology savvy	21	25.00%
Not technology savvy at all	7	8.33%

Own or have access to (multiple answers)		
Cell Phone	**55**	**65.48**
smartphone	46	54.76
Laptop	43	51.19
Desktop	49	58.33
Tablets	22	26.19
Webcams	20	23.81
The social media sites that you frequently visit (multiple answers)		
Facebook	**61**	**72.62**
Twitter	26	30.95
YouTube	36	42.86
LinkedIn	20	23.81
Tumblr	5	5.95
Google+	48	57.14
Foursquare	4	4.76
On average, how many hours a day do you spend on these social media sites?		
0 hours	11	13.10%
Up to 1 hour	27	32.14%
Between 1 and 2 hours	**28**	**33.33%**
Between 3 and 4 hours	12	14.29%
More than 4 hours	6	7.14%

Results indicated that two-thirds of the employees were technology savvy. More than half of the employees had cell phone (65%) or smart phone (55%). It was found that majority (73%) of the employees visit Facebook followed by Google+ as a social media site. Those who used social media, among them a third used the social media between 1 – 2 hours.

Table 4.2.7: Preference regarding information session and time of learning

Do you prefer:	Frequency	Percentage
long / comprehensive training sessions	22	26.19%
short / to the point information sessions	**62**	**73.81%**
Which of the following is your most preferred:		
I prefer learning at work during working hours	16	19.05%
I prefer learning at a learning institution during working hours	**37**	**44.05%**
I prefer learning at home out of working hours	14	16.67%
I prefer learning at a learning institution out of working hours	17	20.24%

Majority of the employees preferred short/to the point information session (74%), and 44% indicated that they prefer learning at a learning institution during working hours.

Table 4.2.8: Association between employees preferred methods of training platform and training materials accessibility

```
   15.Which
    of the
  following
    is your      16. If your training material was accessible to you
      most                     anywhere at any time, how li
 preferred:        1         2         3         4         5  |    Total
-----------+--------------------------------------------------+---------
          1         2         6         4         2         2  |       16
          2         3        15         6         6         7  |       37
          3         7         5         1         1         0  |       14
          4         5         5         5         2         0  |       17
-----------+--------------------------------------------------+---------
      Total        17        31        16        11         9  |       84

            Pearson chi2(12) =  19.2245    Pr = 0.083
                Fisher's exact =                 0.106
```

The study did not find any significant association between employees preferred methods of training platform and training materials accessibility ($\chi 2$ = 19.22, p = 0.106).

Table 4.2.9: Distribution of rate of change after training intervention

After a training intervention, rate the changes	Rating (5 = noticeable change, 1 = no change at all)				
	1	2	3	4	5
Performance/productivity	7.14%	2.38%	14.29%	36.90%	**39.29%**
Understanding	3.57%	3.57%	13.10%	35.71%	**44.05%**
Confidence	2.38%	3.57%	13.10%	33.33%	**47.62%**
Quality	3.57%	1.19%	14.29%	32.14%	**48.81%**

With regards to the impact of educational technology on ROI, the study highlighted that there were noticeable changes regarding performance /productivity, understanding, confidence, and quality after the training intervention in the organisation.

Table 4.2.10: Frequency of training intervention occurs at the organisation

Training interventions are often postponed or cancelled due to operational reasons	Frequency	Percentage
Often	8	9.52%
Sometimes	**31**	**36.90%**
Rarely	28	33.33%
Never	17	20.24%

More than half of the employees mentioned rarely or never as the training intervention gets postponed or cancelled. Therefore, it could be concluded that there is a positive impact of educational technology on ROI in Nedbank.

Table 4.2.11: Perception on training and development at the organisation

If your training material was accessible to you anywhere at any time, how likely are you to learn anywhere at any time outside working hours?	Frequency	Percentage
Most Likely	17	20.24%
Likely	**31**	**36.90%**
Maybe	16	19.05%
Unsure	11	13.10%

Least likely	9	10.71%
How do you rate the importance of training and development within your organisation?		
Extremely important	**52**	**61.90%**
Important	14	16.67%
Some-what important	14	16.67%
Not important	4	4.76%
Is training an inconvenience to your workday?		
Often	13	15.48%
Sometimes	**44**	**52.38%**
Rarely	11	13.10%
Never	16	19.05%
Does your workload accumulate while you are away on a training intervention?		
Often	25	29.76%
Sometimes	**43**	**51.19%**
Rarely	10	11.90%
Never	6	7.14%
Do you consider training to be a refreshing break away from your normal tasks?		
Often	29	34.52%
Sometimes	**43**	**51.19%**
Rarely	3	3.57%
Never	9	10.71%
How likely are you to initiate your own development and up-		

skilling?		
Most Likely	**28**	**33.33%**
Likely	25	29.76%
Maybe	21	25.00%
Unsure	6	7.14%
Least Likely	4	4.76%

More than half of the employees (57%) reported that they would access training material if they were accessible to them anywhere at any time outside working hours. Majority (78%) rated training and development as important within the organisation, more than half (>50%) mentioned that training is sometimes an inconvenience to their workday, workloads sometimes accumulate while they are away on a training intervention, and sometimes they considered training to be a refreshing break away from their normal tasks. About two-thirds (63%) of the employees indicated that they would most likely or are likely to initiate their own development and up-skilling.

Table 4.2.12: Relationship between Organisational Culture at Nedbank and preferred learning methods

```
. spearman var13  istraininganinconveniencetoyourw doesyourworkloadaccu
> mulatewhiley doyouconsidertrainingtobearefres howlikelyareyoutoinitia
> teyourown, star(0.05)
(obs=84)


                  |    var13 istrai~w doesyo~y doyouc~s howlik~n
     -------------+----------------------------------------------
            var13 |   1.0000
     istraining~w |   0.0825   1.0000
     doesyourwo~y |  -0.1094   0.4559*  1.0000
     doyouconsi~s |   0.0357   0.0054   0.0093   1.0000
     howlikelya~n |   0.0911  -0.0239  -0.0845  -0.0970   1.0000
```

The results indicated that the preferred learning methods were not significantly related to the Organisational Culture at Nedbank (p > 0.05). But the study found significantly positive relationship between the scales of training being an inconvenience to workdays and the likelihood of accepting mobile learning as a training preference (p<0.05).

Table 4.2.13: Relationship between the importance of training and development and the likelihood of accepting mobile learning as a training preference

```
. spearman howlikelyareyoutoacceptmobilelea howdoyouratetheimportanceof
> train istraininganinconveniencetoyourw doesyourworkloadaccumulatewhil
> ey doyouconsidertrainingtobearefres howlikelyareyoutoinitiateyourown,
>  star(0.05)
(obs=84)


              |  howlik~a howdoy~n istrai~w doesyo~y doyouc~s howlik~n
 -------------+------------------------------------------------------
 howlikelya~a |   1.0000
 howdoyoura~n |  -0.3635*  1.0000
 istraining~w |   0.2424* -0.1878   1.0000
 doesyourwo~y |  -0.0603   0.0709   0.4559*  1.0000
 doyouconsi~s |  -0.0467   0.2321*  0.0054   0.0093   1.0000
 howlikelya~n |   0.1533   0.2966* -0.0239  -0.0845  -0.0970   1.0000
```

There was negative relationship between accepting mobile learning as a training preference and the rating of the importance of training and development within the organisation (p <0.05).

4.3 Results of managerial employee questionnaire

Fifteen managers completed the questionnaires. The manager's socio-demographic information is summarised below in Table 4.3.1 below.

Table 4.3.1: Socio-demographic information's of the managers

Socio-demographic variables	Frequency	Percentage
Age		
34 - 41	**6**	**40.00**
42 - 49	6	40.00
50 - 57	2	13.33
> 57	1	6.67
Race		
Black	2	13.33
White	5	33.33
Indian	**8**	**53.33**
Gender		
Male	2	13.33
Female	**13**	**86.67**
Highest Academic Certification / Qualification		
Matric	2	13.33
Diploma	**8**	**53.33**
Bachelor Degree	4	26.67
Master Degree	1	6.67

Years of Service		
6 - 10 Years	2	13.33
11 - 15 Years	3	20.00
16 - 20 Years	**5**	**33.33**
26 - 30 Years	3	20.00
> 30 Years	2	13.33

The majority (80%) of the managers were between the ages of 34 years and 49 years, female (87%), more than half (53%) were Indian, two-thirds had diploma or below educational qualifications and working more than 15 years in the bank (67%).

Table 4.3.2: The effect that educational technology has on training and development at Nedbank

Effect of educational technology on training and development	Frequency	Percentage
Is the time spent away on training interventions get recorded as lost / downtime?		
Yes	**9**	**60.00**
No	5	33.33
I am unsure	1	6.67
Do you have access to the recorded lost / downtime for training interventions?		
Yes	**9**	**60.00**
No	6	40.00
Does the training downtime data reveal negative impacts on productivity?		

Yes	**10**	**66.67**
No	1	6.67
Somewhat	3	20.00
I am unsure	1	6.67
Did training downtime decrease with online training interventions?		
Yes	4	26.67
No	4	26.67
Somewhat	**6**	**40.00**
I am unsure	1	6.67
What is the average length of your training interventions?		
5 - 8 hours	**13**	**86.67**
9 - 16 hours	2	13.33
How can you accelerate training interventions to meet the demands of today's time-strapped employees?		
Fewer classroom interventions	7	46.67
Shorter classroom interventions	8	53.33
After hour classroom interventions	3	20.00
No classroom interventions	1	6.67
More online interventions in working hours	**10**	**66.67**
After hour easily accessible online interventions	7	46.67

Table 4.3.2 summarises the effect that educational technology has on training and development at Nedbank. Results had shown that 60% of the managers indicated that the time spent away on training interventions get recorded as lost / downtime and two-thirds (67%) mentioned that the training downtime data revealed negative

impacts on productivity. Only a quarter (27%) of the managers highlighted that training downtime decreased with online training interventions. When asked how to accelerate training interventions to meet the demands of today's time-strapped employees, 67% mentioned more online interventions in working hours, followed by shorter classroom interventions (53%).

Table 4.3.3: Learning platforms at Nedbank

Learning platform in Nedbank	Frequency	Percentage
What are the current training delivery methods within the organisation?		
Classroom Training	8	53.33
Online Training	7	46.67
Simulations / virtual classrooms	4	26.67
One on One Training / Coaching	7	46.67
On the job Training	7	46.67
Mixed methods / Blended	**10**	66.67
What percentage of training within your organisation is delivered online?		
0% - 20%	1	6.67
21% - 40%	4	26.67
41% - 60%	**8**	**53.33**
>60%	2	13.33
What new training delivery methods can you start to explore right now? Select more than one if applicable.		
Simulations	11	73.33

Webinars	7	46.67
More online assessments	**12**	80.00
Mobile learning	9	60.00
Will your approach to training become more blended in the future (Offering different training delivery methods)?		
Yes, substantially	**12**	**80.00**
Yes, to some degree	3	20.00
How can you accelerate training interventions to meet the demands of today's time-strapped employees?		
Fewer classroom interventions	7	46.67
Shorter classroom interventions	8	53.33
After hour classroom interventions	3	20.00
No classroom interventions	1	6.67
More online interventions in working hours	**10**	66.67
After hour easily accessible online interventions	7	46.67
Would mobile learning work at your organisation?		
Yes	**9**	**60.00**
Maybe	6	40.00

With regards to learning platforms at Nedbank, two-thirds of the managers indicated that the main training delivery method was the mixed/blended method (67%), followed by classroom training (53%). More than half (53%) mentioned that 41%-60% of the training within the organisation is delivered online. Majority of the managers highlighted that more online assessment (80%) followed by simulations (73%) could be the new delivery methods that can be implemented immediately. To accelerate training interventions to meet the demands of today's time-strapped

employees, two-thirds of the managers mentioned the implementation of more online interventions during working hours and also shorter classroom interventions (53%).

Table 4.3.4: Return on investment from education technology

Variables	Frequency	Percentage
What has the Return on Investment (ROI) been on training and development in the last 3 years?		
> 10 %	4	26.67
5% to 10%	**7**	**46.67**
0% to 5%	1	6.67
- 0% to - 5%	1	6.67
I am unsure	2	13.33
Have ROI results improved with online training?		
Yes, significantly	3	20.00
Yes, on a small level	**8**	**53.33**
No, not at all	1	6.67
We have not measured it	3	20.00
What has the impact of training cancellations and postponements been on:		
Productivity		
Decrease	5	33.33
Increase	**8**	**53.33**
We have not measured it	2	13.33
Quality		

Decrease	**5**	**33.33**
Increase	5	33.33
No Change	3	20.00
We have not measured it	2	13.33
Employee Confidence in performing tasks		
Decrease	3	20.00
Increase	**5**	**33.33**
No Change	5	33.33
We have not measured it	2	13.33

About half of the managers (47%) indicated that the Return on Investment (ROI) has been between 5%-10% on training and development in the last 3 years. One in five managers (20%) reported that ROI results significantly improved with online training. It was surprising to see that more than half of the managers indicated that as a result of training cancellations and postponements there was an increase in productivity (53%), quality (33%), and employee confidence in performing tasks (33%).

Table 4.3.5: Organisational culture at Nedbank

Variables	Frequency	Percentage
Does training get deferred or cancelled due to operational reasons?		
Often	4	26.67
Sometimes	5	33.33
Rarely	**6**	**40.00**
What does the employee of the future look like in your organisation? Select more than one.		

Technologically advanced	11	73.33
Technologically Challenged	2	13.33
Motivated to learn	**12**	80.00
Not motivated to learn	1	6.67
Young	11	73.33
Old	1	6.67
Middle Aged	4	26.67
Qualified	10	66.67
Unqualified	1	6.67
Learn on the go	9	60.00
How does this differ from employees today? Select more than one.		
Technologically advanced	3	20.00
Technologically Challenged	**10**	66.67
Motivated to learn	1	6.67
Not motivated to learn	8	53.33
Young	5	33.33
Old	5	33.33
Middle Aged	8	53.33
Qualified	6	40.00
Unqualified	7	46.67
Classroom Learners	9	60.00
Learn on the go	4	26.67
How would you describe training attendance in the organisation?		

Average	**10**	**66.67**
Good	5	33.33
What two things will you change right now to improve training attendance?		
Duration or length of interventions	**7**	**46.67**
Time of interventions (working hours or after working hours)	2	13.33
Venue of interventions	1	6.67
Intervention delivery methods	5	33.33
If you were given an unlimited budget to create a learning and development organisation of the future, how will you prioritise the following:		
Upgrade existing resources		
1	2	13.33
2	2	13.33
3	**9**	**60.00**
4	2	13.33
Upgrade venue		
1	4	26.67
2	2	13.33
3	**6**	**40.00**
4	3	20.00
Design / structure interventions to minimise downtime		
2	2	13.33
3	3	20.00

4	**10**	**66.67**
Invest in Educational Technology		
2	1	6.67
3	5	33.33
4	**9**	**60.00**
Would mobile learning work at your organisation?		
Yes	**9**	**60.00**
Maybe	6	40.00

With regards to organisational culture, more than a quarter (27%) of the managers mentioned that training gets deferred or cancelled due to operational reasons. Majority of the mangers reported that future employees are motivated to learn (80%) and are technologically advanced (73%). Training attendance in the organisation is average (67%). To improve the training attendance, the managers would like to change the duration or length of interventions followed by Intervention delivery methods (47% and 33% respectively). If unlimited budget is available to create a learning and development organisation of the future, the managers will prioritise as follows: Design / structure interventions to minimise downtime (67%), Invest in Educational Technology (60%) and Upgrade existing resources (60%).

4.4 Conclusion

The statistical analysis shows that although Nedbank employees are technologically capable and have access to most modes of technology, classroom interventions are still the most popular delivery method. Nedbank has a strong organisational culture, but there are a few areas that could be enhanced, for example return on investment and downtime recording and awareness and work reallocation for employees on training interventions. The following chapter offers suggestions and recommendations for Nedbank based on the statistical analysis in this chapter.

CHAPTER 5

5.1 Introduction

This chapter outlines a few recommendations and suggestions to Nedbank based on the outcomes of the statistical analysis and with reference to the study's research questions.

5.2 What is the effect that educational technology has on training and development downtime in Nedbank?

Organisations that understand the high costs of downtime can plan accordingly so as not to lose competitive advantage. Training and development technology aids in fewer classroom interventions, or shorter classroom interventions freeing up costly hours that can be utilised in operations for better productivity and efficiency (Lopes and Teixeira, 2013).

The results of this study showed that 30% of respondents often had work accumulate whilst away on training interventions, with a further 51% stating that their work sometimes accumulated. Only 19% of employees suggested that they never had work accumulate whilst away on training.

The recommendation for Nedbank is to ensure that due dates and critical work of absent employees are satisfactorily reallocated in order to remain efficient. Most departments are interdependent, and a backlog of work in on area could have a ripple effect across other departments thus affecting the effectiveness and efficiencies of customer service. In today's competitive environments a banks survival depends on the value that they create for their customer (Chakrabarthy, 2012) and turnaround time inefficiencies will have a negative impact on customer value creation. Learners will also be able to concentrate and focus better at training interventions rather than being distracted with the knowledge of accumulating work on their desks.

The study showed that 67% of managers saw a decrease in downtime with the advent of online training intervention at Nedbank and the majority suggested that if they had an unlimited budget to change the face of training and development at Nedbank they would, as a priority, invest in educational technology and design and structure interventions that minimise downtime further.

The results of the managerial survey showed that 60% of managers within Nedbank, recorded or were aware of downtime being recorded within Nedbank and that they also had access to the downtime data. However, the other 40% do not record downtime as a result of training interventions or were unsure if the data existed, or did not have access to such data.

The recommendation for Nedbank would be to ensure that all managers keep a record of, and have access to lost time or downtime as a result of training interventions in order to better manage operational efficiencies and to also aid in more effective decision making around training intervention design and structure.

87% of managers at Nedbank agree that training and development downtime impacts negatively on operations. 53% of them state that productivity increases when training and development interventions are cancelled or postponed.

A recommendation to Nedbank is to be wary that critical training and development interventions are not cancelled in order to boost operations. Whereas cancelling training interventions might boost productivity in the short run, it will have negative repercussions in the long run.

Research carried out by Owoyemi et al., (2011) found that organisations that cut back on necessary training and development initiatives, will experience poor labour output in the long run and the organisation would be at risk competitively. Leaser (2010) states that trained employees are more cost effective to support than untrained ones.

5.3 What are the learner preferences for different learning platforms in Nedbank and how does this impact on training and development accessibility?

In recent years, as technology has become a part of the daily lives of both old and young people, and as technology evolves into providing easier to use more intuitive user interfaces across multiple platforms, educational technology has improved e-learning experiences. It is becoming a tool that is accepted and trusted in training environments. (Aitken, 2010)

The study revealed that 66% of employees at Nedbank considering themselves technologically savvy, with the majority having access to or owning cellphones, smartphones and desktops. 36% of them prefer a mixed approach to training (both classroom and online methods), with 53% willing to try mobile learning. 74% of employees preferring shorter training interventions and 57% of employees show that if training material was made easily available to them they would access this material from anywhere at any time.

As suggested by Little and Knihova (2014) technology allows for learners e-learning material to be waiting for them in an easily accessible cloud. The cloud enables for smooth integration of mobile learning and social learning into the learning process. With the advent of Apples iCloud, iPhones, iPods and iMacs learners now have access to content synchronisation. This results in the anytime and anywhere downloading and uploading of the most current versions of learning content by the learners in an easy and convenient manner.

The study revealed that employees at Nedbank have the capacity for educational technology and they have access to the tools or devices necessary for educational technology initiatives. A recommendation to Nedbank would be to move from conventional classroom type training to more online initiatives using the various tools available.

There are also many successes recorded of the impact of mobile technology (cell phones and smart phones) and their apps and tablets as tools in learning and development. These devices are changing the landscape of learning within organisations (Kukulska – Hulme, 2013). With 53% of employees at Nedbank willing to try mobile learning with 60% of managers in the study stating that they would use

this method of training delivery, Nedbank should evaluate the benefits of this technology for themselves.

The study also revealed that employees have access to and visit social media sites like Facebook and YouTube at an average of an hour a day. It is recommended that Nedbank consider utilising these sites for more innovative training delivery methods.

Social networking sites are inexpensive and practical platforms on which to share short videos on particular skills or to share necessary training and development material. Technology allows for trainers to upload data to an organisations dedicated channel on these sites which can then be accessed by the organisations users. Social media sites like Twitter, Facebook and YouTube are expected to be utilised to a great extent for training and development in the near future (Aitken, 2010).

100% of the managers in the study stated that they would introduce a more blended approach to training delivery methods in the future and 50% believe that more online interventions and shorter classroom interventions will accelerate training and development initiatives in a time strapped environment.

A recommendation to Nedbank would be to design and structure training and development delivery methods taking employee preferences into account. The study revealed that 44% of employees still prefer classroom training to other methods, which means that 56% of employees prefer other delivery methods like online interventions, virtual or simulated environments, on the job training or mixed and more blended approaches.

Hejazifar (2013) suggested that organisations shy away from customising training interventions and rather prefer the "one size fits all" type of interventions as this has a lessor negative impact on return on investments (ROI). However, research has been undertaken to study the impact of customised training and development and learning on organisations. A report published in 2010 by Adams, who performed a study within a large Canadian Bank, suggested that there was a "definite link between learner uniqueness and characteristics and job performance in the workplace". When employees learnt something in a preferred training method, their assessments were better than when they had no control on the learning method

used. Technology and rapid technology advancements already support training customisation.

5.4 What is the impact of educational technology on Return on Investment (ROI) in Nedbank?

A challenge for many organisations is how to technologically enhance training and development initiatives in order to both improve access to training and also cut down on training and development downtime whilst achieving desired return on investment (ROI) (Percival et al., 2013).

A study carried out in 2013 by Percival et al. showed that whilst training and development sometimes resulted in a low or no ROI, it is still a critical investment, and a necessity for as long as technology advanced. Organisations would need to analyse their return on investment for training and development initiatives carefully and strategically for competitive results.

Managers at Nedbank revealed that training and development ROI in the last 3 years is on average 5% to 10%. With about of 50% of training interventions being online, 73% of the managers in the study have noticed an improvement in ROI because of online interventions. 20% of managers indicated that they did not measure ROI and 13% were unsure of the current ROI figures.

A recommendation to Nedbank would be to ensure that all managers measure, evaluate and are aware of ROI with regards to training and development. This will ensure better decision making around training and development initiatives; and investments in educational technologies and resources will be a more scientific approach leading to effective budget management and satisfactory or positive returns on investments.

Phillips and Phillips (2011) suggest that new technology implementation has for year's eluded accountability. Organisations willingly implemented technology without fully understanding how or if the implementation would result in appropriate ROI.

O'Connor and Little (2012) stated that oftentimes organisational training and development is disconnected from the core purpose of business and organisations are unable to explain if well designed training and development initiatives have achieved organisational goals and targets. Therefore proper evaluation techniques

become necessary to ensure that training and development investments are of value to the organisation.

Proper analysis and evaluation also determines if sufficient evidence exists that proves that the firm's investment will result in significant returns on that investment. Careful analysis and evaluation will also ensure that executives understand the economic impacts of the organisations investment or non-investment in training and development programmes. (Aragon Sanchez as cited by Percival et al., 2013)

Also, Ng and Dastmalchian (2011) suggest that for training and development programmes to be truly effective, close attention needs to be paid to the evaluation of these programmes effectiveness. This will ensure that training is given for the right reasons, at the right time and with appropriate design and structure that will both motivate employees and make the most of training and development budgets.

5.5 What is the Organisational Culture at Nedbank and how does this impact on training and development and educational technology?

Organisational culture lies at the heart of the training and development programmes which are generally aimed at boosting innovation and creativity, productivity, creating an environment that enables learning in response to challenges and competitive pressures. Thus creating an adaptive culture to educational technology and a culture conducive to training and development, should be all managers' priorities (Adewale and Anthonia, 2013).

Existing elements of culture within an organisation, like artifacts, Patterns of behaviour, norms, values, and underlying assumptions, can impact on the effectiveness of training and development initiatives within organisations. Hassi (2011) and Bunch (2007) suggest that training and development does not exist in a vacuum, and that organisational culture and training and development is inseparably linked. Without organisational support, even the best designed programmes or the best trainers will not have positive results. "Training failure can be a manifestation of the values, beliefs, and assumptions shared by members of various levels of organisational culture" (Hassi, 2011).

Nedbank on the whole has a strong training and development culture with almost 80% of employees asserting that Nedbank places extreme importance on their training and development. 57% of employees suggest that should their training material be made accessible to them anywhere at any time, they would be likely to access this material anywhere at any time. 63% of employees submit that given the opportunity, they would be likely to initiate their own development within the organisation.

A suggestion to Nedbank would be to utilise these findings to introduce more technological training delivery methods and to design training and development interventions to allow employees to take responsibility for their own upskilling, not just at work during working hours, but from anywhere at any time. This could reduce the number of hours of training and development downtime and also cut the costs of in house resources.

Nedbank needs to be wary of the following data revealed by the study. 65% of employees refer to training as an inconvenience with 96% suggesting that training is a break away from normal tasks.

There are various reasons for this data, for example, employees might be stressed about accumulating workloads and looming deadlines, or might consider the training irrelevant or not important or urgent. The risks associated with this is that a negative attitude or perception of training begins to fester and can then become ingrained in the organisations culture. New employees who seek cues from existing employees could also begin to develop an indifferent attitude towards training and development interventions.

Managers at Nedbank are recommended to ensure that employees are sent on relevant interventions when they are needed, and to ensure that workloads are reallocated away from the learner during training interventions.

Rewards and incentives, like certificates, accreditations or even salary adjustments could be considered in order to change the perceptions of employees from that of training and development being an inconvenience, to one of training and development resulting in positive gains. Potential benefits to employees of training and development is a better prediction of training success than needs assessments

and evaluations are if employees only perceive training within the organisation as inconvenient, a waste of time or a means to avoid work (Bunch, 2007).

5.6 Conclusion

The study revealed mostly positive impacts of educational technology on training and development within Nedbank. The data collected regarding return on investment, increased use of online or e-learning initiatives, and popular training preferences are also in line with the data from the South African Banking Learning and Development 2012 Report highlighted in chapter 2.

The suggestions and recommendations in this chapter will enhance the results already experienced at Nedbank. They suggestions are simple and most can be implemented immediately at no or low costs. Research already exists to support the relevance and importance and success factors of implementing these suggestions.

Taking the limitations of the study into consideration, management at Nedbank need to exploit the findings of this study to develop solutions and programmes that will escalate their successes with educational technology for training and development within the organisation.

5.7 Limitations of the study

The following are the limitations of this study:

1. Actual downtime cost calculations did not form part of the scope of this study, but it would be critical for managers to calculate actual Rand value costs of training and development downtime before and after the introduction of educational technology.
2. Rand value calculations of ROI did not form part of the scope of this study, but is critical in order to make informed educational technology investment decisions.

3. Only a few aspects of the impact of culture on learning was touched on, but culture and learning is a massive study with an immense number of elements that also need to be taken into consideration by organisations when implementing culture change.

4. The study does not account for Rand value costs of technology implementation (hardware or software) within an organisation like Nedbank, but managers looking to invest in these technologies would need to analyse the ROI of such investment costs carefully.

5. The study does not cover the capacity of servers and other IT related concepts currently at Nedbank, but a complete evaluation of these systems would need to be carried out before further technological adoptions take place.

6. Current training and development evaluation processes at Nedbank did not form part of the scope of this study, but the evaluation of training and development programmes, techniques and processes are highly critical in any training and development environment as suggested in this study.

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APPENDICES

ANNEXURE 1: Research Questionnaires

UNIVERSITY OF KWAZULU-NATAL

GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MBA Research Project

Researcher: Razia Khan (0845083138)

Supervisor: Dr. A Kader (031-5849900)

Research Office: Ms P Ximba (031-2603587)

Dear Respondent,

My name is Razia Khan and I am a MBA student at the Graduate School of Business and Leadership, at the University of Kwa-Zulu Natal.

You are invited to participate in a research project entitled "The Impact of Educational Technology on Training and Development in Banks (A case study on Nedbank)". The aim of this study is to investigate if new innovative methods and technologies will cut down on training downtime, make training interventions more accessible to all employees, and if offering different learning platforms to provide for different learner preferences will have positive impacts on training and development in a banking environment.

Through your participation I hope to understand how educational technology will impact on training and development within banks. The results of the focus group are intended to contribute to this study.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this survey/focus group. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The survey should take you about ten minutes to complete. I hope you will take the time to complete this survey.

Sincerely

Investigator Name: Razia Khan

I hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.*Required

○ Yes

○ No

Section A

1. Age*Required

○ 18 - 25

○ 26 - 33

○ 34 - 41

○ 42 - 49

○ 50 - 57

○ > 57

2. Race*Required

○ Black

○ White

○ Indian

○ Coloured

○ Other

3. Gender*Required

○ Male

○ Female

4. Highest Academic Certification / Qualification*Required

○ Matric

○ Diploma

○ Bachelor's Degree

○ Honours Degree

○ Master's Degree

○ Doctorate

○ None of the Above

5. Years of service*Required

○ 0 - 5 years

○ 6 - 10 years

○ 11 - 15 years

○ 16 - 20 years

○ 21 - 25 years

○ > 25 years

Section B

6. Which of the following is your MOST preferred learning method?*Required

○ Classroom training

○ Online training

○ Simulations/virtual classrooms

○ One on one training/coaching

○ On the job training

○ Mixed method

7. On a scale from 1 to 5, with 5 being your most preferred and 1 being your least preferred, rate the following methods of training delivery

	1	2	3	4	5
Classroom training	○	○	○	○	○
Online/systems training	○	○	○	○	○
Simulations/virtual training	○	○	○	○	○
On the job training	○	○	○	○	○
One- on- one training	○	○	○	○	○

8. With the advent of smartphones and the range of applications available for them, mobile learning is said to grow. On a scale from 1 to 5 how likely are you to accept mobile learning as a training preference?*Required

    1   2   3   4   5

least likely	○	○	○	○	○	most likely

9. On a scale from 1 to 5, with 5 being your most preferred and 1 being your least preferred, rate the following methods of training material*Required

	1	2	3	4	5
Video	○	○	○	○	○
Audio	○	○	○	○	○
Text	○	○	○	○	○

10. On a scale from 1 to 5 how technology savvy are you?*Required (Technology Savvy - comfortable with technology, confident in your use of different technologies)

	1	2	3	4	5	
not at all	○	○	○	○	○	very

11. Select all the devices that you own or have access to*Required

☐ Cell Phone

☐ smartphone

☐ Laptop

☐ Desktop

☐ Tablets (eg iPad)

☐ Webcams

12. Select the social media sites that you frequent*Required

☐ Facebook

☐ Twitter

☐ YouTube

☐ LinkedIn

☐ Tumblr

☐ Google+

☐ Foursquare

13. On average, how many hours a day do you spend on these social media sites?*Required

○ 0 hours

○ Up to 1 hour

○ Between 1 and 2 hours

○ Between 3 and 4 hours

○ More than 4 hours

14. Do you prefer*Required

○ long / comprehensive training sessions

○ short / to the point information sessions

15. Which of the following is your most preferred:*Required

○ I prefer learning at work during working hours

○ I prefer learning at a learning institution during working hours

○ I prefer learning at home out of working hours

○ I prefer learning at a learning institution out of working hours

16. If your training material was accessible to you anywhere at any time, how likely are you to learn anywhere at any time outside working hours? *Required

	1	2	3	4	5	
least likely	○	○	○	○	○	most likely

17. How do you rate the importance of training and development within your organisation? *Required

	1	2	3	4	5	
not important at all	○	○	○	○	○	extremely important

18. Is training an inconvenience to your workday?*Required

○ Often

○ Sometimes

○ Rarely

○ Never

19. Does your workload accumulate while you are away on a training intervention?*Required

○ Often

○ Sometimes

○ Rarely

○ Never

20. Do you consider training to be a refreshing break away from your normal tasks?*Required

○ Often

○ Sometimes

○ Rarely

○ Never

21. How likely are you to initiate your own development and up-skilling? *Required

     1   2   3   4   5

least likely	○	○	○	○	○	most likely

22. After a training intervention, rate the change in your (scale 5 being noticeable change and scale 1 being no change at all)*Required

	1	2	3	4	5
Performance/productivity	○	○	○	○	○
Understanding	○	○	○	○	○
Confidence	○	○	○	○	○
Quality	○	○	○	○	○

23. Training interventions are often postponed or cancelled due to operational reasons.*Required

○ Often

○ Sometimes

○ Rarely

○ Never

Thank you for completing this survey!

UNIVERSITY OF KWAZULU-NATAL

GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MBA Research Project

Researcher: Razia Khan (0845083138)

Supervisor: Dr. A Kader (031-5849900)

Research Office: Ms P Ximba (031-2603587)

Dear Respondent,

My name is Razia Khan and I am a MBA student at the Graduate School of Business and Leadership, at the University of Kwa-Zulu Natal.

You are invited to participate in a research project entitled "The Impact of Educational Technology on Training and Development in Banks (A case study on Nedbank)". The aim of this study is to investigate if new innovative methods and technologies will cut down on training downtime, make training interventions more accessible to all employees, and if offering different learning platforms to provide for different learner preferences will have positive impacts on training and development in a banking environment.

Through your participation I hope to understand how educational technology will impact on training and development within banks. The results of the focus group are intended to contribute to this study.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this survey/focus group. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

 If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The survey should take you about ten minutes to complete. I hope you will take the time to complete this survey.

Sincerely

Investigator Name: Razia Khan

I hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.*Required

○ Yes

○ No

Section A

1. Age*Required

○ 18 - 25

○ 26 - 33

○ 34 - 41

○ 42 - 49

○ 50 - 57

○ > 57

2. Race*Required

○ Black

○ White

○ Indian

○ Coloured

○ Other

3. Gender*Required

○ Male

○ Female

4. Highest Academic Certification / Qualification*Required

○ Matric

○ Diploma

○ Bachelor's Degree

○ Honours Degree

○ Master's Degree

○ Doctorate

○ None of the Above

5. Years of Service*Required

○ 0 - 5 Years

○ 6 - 10 Years

○ 11 - 15 Years

○ 16 - 20 Years

○ 21 - 25 Years

○ > 25 Years

Section B

6. What are the current training delivery methods within the organisation?*Required

☐ Classroom Training

☐ Online Training

☐ Simulations / virtual classrooms

☐ One on One Training / Coaching

☐ On the job Training

☐ Mixed methods / Blended

7. What has the Return on Investment (ROI) been on training and development in the last 3 years?*Required

○ > 10 %

○ 5% to 10%

○ 0% to 5%

○ - 0% to - 5%

○ - 5% to -10%

○ < -10%

○ I am unsure

8. What percentage of training within your organisation is delivered online?*Required

○ 0% - 20%

○ 21% - 40%

○ 41% - 60%

○ >60%

9. Have ROI results improved with online training?*Required

○ Yes, significantly

○ Yes, on a small level

○ No, not at all

○ We have not measured it

10. Is the time spent away on training interventions get recorded as lost / downtime?*Required

○ Yes

○ No

○ I am unsure

11. Do you have access to the recorded lost / downtime for training interventions?*Required

○ Yes

○ No

○ I am unsure

12. Does the training downtime data reveal negative impacts on productivity?*Required

○ Yes

○ No

○ Somewhat

○ I am unsure

13. Did training downtime decrease with online training interventions?*Required

○ Yes

○ No

○ Somewhat

○ I am unsure

14. Does training get deferred or cancelled due to operational reasons? *Required

○ Often

○ Sometimes

○ Rarely

○ Never

15. What has the impact of training cancellations and postponements been on:*Required

	Decrease	Increase	No change	We have not measured it
Productivity	○	○	○	○
Quality	○	○	○	○
Employee confidence on	○	○	○	○

	Decrease	Increase	No change	We have not measured it

certain tasks

16. What does the employee of the future look like in your organisation? Select more than one.*Required

☐ Technologically advanced

☐ Technologically Challenged

☐ Motivated to learn (Proactive culture)

☐ Not motivated to learn (Reactive Culture)

☐ Young

☐ Old

☐ Middle Aged

☐ Qualified

☐ Unqualified

☐ Classroom Learners

☐ Learn on the go

17. How does this differ from employees today? Select more than one.*Required

☐ Technologically advanced

☐ Technologically Challenged

☐ Motivated to learn (Proactive culture)

☐ Not motivated to learn (Reactive Culture)

☐ Young

☐ Old

☐ Middle Aged

☐ Qualified

☐ Unqualified

☐ Classroom Learners

☐ Learn on the go

18. What new training delivery methods can you start to explore right now? Select more than one if applicable. *Required

☐ Simulations

☐ Webinars

☐ More online assessments

☐ Mobile learning

19. Will your approach to training become more blended in the future (Offering different training delivery methods)?*Required

○ Yes, substantially

○ Yes, to some degree

○ No, not at all

20. What is the average length of your training interventions? *Required

○ 0 - 4 hours

○ 5 - 8 hours

○ 9 - 16 hours

○ > 16 hours

21. How can you accelerate training interventions to meet the demands of today's time-strapped employees?*Required

☐ Fewer classroom interventions

☐ Shorter classroom interventions

☐ After hour classroom interventions

☐ No classroom interventions

☐ More online interventions in working hours

☐ After hour easily accessible online interventions

22. How would you describe training attendance in the organisation?*Required

○ Poor

○ Average

○ Good

○ Excellent

23. What two things will you change right now to improve training attendance?*Required

☐ Duration of interventions

☐ Time of interventions

☐ Venue of interventions

☐ Intervention delivery methods

24. If you were given an unlimited budget to create a learning and development organisation of the future, how will you prioritise the following:*Required

	1	2	3	4
Upgrade existing resources	○	○	○	○
Upgrade venue	○	○	○	○
Design / structure interventions to minimise downtime	○	○	○	○
Invest in Educational Technology	○	○	○	○

25. With the advent of smartphones and the range of applications available for them, mobile learning is expected to grow. Would this work at your organisation? *Required

○ Yes

○ No

○ Maybe

Thank you for completing this survey!

ANNEXURE 2: Ethical Clearance Certificate

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

07 April 2014

Ms Razia Khan (212538090)
Graduate School of Business & Leadership
Westville Campus

Protocol reference number: HSS/0137/014M
Project title: The impact of Educational Technology on Training and Development in Banks (A case study of Nedbank)

Dear Ms Khan,

Full Approval – Expedited

In response to your application dated 18 March 2014, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted FULL APPROVAL.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 5 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Shenuka Singh (Chair)

/ms

cc Supervisor: Dr Abdulla Kader
cc Academic Leader Research: Dr E Mutapo
cc School Administrator: Ms Zarina Bullyraj

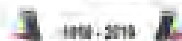Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 Facsimile: +27 (0) 31 260 4609 Email: _____ / _____ / _____
Website: www.ukzn.ac.za

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