FINANCIAL LITERACY AS CORE COMPETENCY OF SOUTH AFRICAN MILITARY OFFICERS: A MEASUREMENT INSTRUMENT

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Dissertation presented for the
Degree of Doctor
in Public and Development Management
at Stellenbosch University

Promoter:
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December 2009

DECLARATION

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ABSTRACT

Since 1994, education and training in South Africa has experienced various changes, driven mainly by the Green Paper on Skills Development and the White Paper on Education which set objectives and outcomes and gave guidelines on how education and training should be approached, planned, and managed.

The White Paper on Education necessitated change in SA tertiary institutions such as Stellenbosch University and its respective faculties. The Faculty of Military Science, which is situated at the South African Military Academy (SAMA) in Saldanha, accepted the challenge of contributing to the full personal development of students, by undertaking to shape people capable of organising and managing themselves and their human activities, including their financial activities, responsibly and effectively.

The success of higher education institutions in empowering young people to be financially capable is questioned by various publications and surveys. Preliminary findings from surveys in 2004 and 2005 among students at the SAMA suggest that they are largely financially illiterate, thus potentially economically volatile.

These findings introduce the research problem and serve as a foundation for the development of a scientific, socially relevant, valid and reliable financial literacy measurement instrument. A combined qualitative and quantitative research methodology is applied to develop a measurement instrument, which is then assessed for validity and reliability by applying it in a case study.

The secondary objective of this research is the social study of the financial knowledge, financial behaviour and financial attitude levels of individuals. To ensure relevance between the case study and the measurement instrument, financial literacy is initially evaluated as a management competency. Financial literacy is stated as a key competency in the South African National Defence Force (SANDF).

The financial literacy measurement instrument was constructed after an exploration of the contextual and conceptual nature of financial literacy. A questionnaire was selected as the ideal method of gathering the required information. The questionnaire's validity and reliability were assessed as part of descriptive research in the development phase, as well as in the case study. The face and content validity were proven through input from respondents and subject experts.

Reliability of the measurement instrument was assessed by calculating item difficulty, item discrimination, means, standard deviations and ultimately the internal consistency of the financial knowledge, behaviour and attitude sections of the measurement instrument.

In the case study first-year students achieved an average of 50.17% for their financial knowledge although they rated their own knowledge levels to be 60.8%. The respondents struggled most with questions pertaining to investment, insurance, and inflation, and least with retirement and income and expenditure questions.

This research underlines the importance of financial literacy as a management competency and its importance at a global, national, organisational and personal level. It produces a valid and reliable financial literacy measurement instrument that can be used by different stakeholders in South Africa to assess financial knowledge, behaviour and attitude, and thus indicate where intervention is required. Having a valid and reliable measurement instrument for measuring financial literacy creates opportunity for future research and development.

OPSOMMING

Sedert 1994 het die opvoeding- en opleidingsteater in Suid-Afrika dramatiese veranderinge ondergaan met veral die die Groenskrif op Vaardigheidsontwikkeling en die Witskrif op Opvoeding, wat die doelwitte en uitkomste gestel het en die toon aangegee het in terme van hoe opvoeding en opleiding aangepak, beplan en bestuur behoort te word.

Verandering genoodsaak deur die Witskrif op Opvoeding sou by assosiasie ook verandering noodsaak in SA tersiêre inrigtings soos Stellenbosch Universiteit en haar fakulteite. Die Fakulteit Krygskunde, gevestig by die Suid-Afrkaanse Millitêre Akademie (SAMA) in Saldanha, het die uitdaging aanvaar om by te dra tot die totale persoonlike ontwikkeling van studente deur te onderneem om mense te vorm wat in staat sal wees om hulself en hul aktiwiteite verantwoordelik en doeltreffend te bestuur, insluitend hul finansiële aktiwiteite.

Hoër Onderwys se sukses met die bemagtiging van jong mense tot finansieel vaardige individue is deur verskeie navorsingsverslae bevraagteken. Voorlopige bevindinge van studies in 2004 en 2005 onder voograadse studente van die SAMA is dat hulle grootliks finansieel ongeletterd is en gevolglik ekonomies kwesbaar.

Die bevindinge is die vertrekpunt van die probleemstelling vir hierdie studie, en vorm die basis vir die ontwikkeling van 'n wetenskaplik- en sosiaalrelevante, geldige en betroubare finansiële geletterdheidsmetingsinstrument. 'n Gekombineerde kwalitatief-kwantitatiewe navorsingsmetodologie is toegepas in die ontwikkeling van 'n metingsinstrument, en die verbandhoudende bepaling van sy geldigheid en betroubaarheid deur die toepassing daarvan in 'n gevallestudie.

Die sekondêre doelwit van hierdie navorsing is die sosiale studie van die finansiële kennis-, finansiële gedrags- en finansiële houdingsvlakke van individue. Ten einde relevansie tussen die gevallestudie en die metingsinstrument te verseker, is finansiële geletterdheid aanvanklik as 'n bestuursvaardigheid geëvalueer. Finansiële geletterdheid word in die Suid-Afrikaanse Nasionale Weermag (SANW), as kernvaardigheid aangedui.

Die finansiële geletterdheidsinstrument is gekonstrueer na 'n verkenning van die konteksuele en konsepsuele aard van finansiële geletterdheid. 'n Vraelys is

geselekteer as die ideale metode om die relevante data te bekom. Die vraelys se geldigheid en betroubaarheid is as deel van deskriptiewe navorsing in die ontwikkelingsfase, en ook tydens die gevallestudie, bepaal. Die gesigs- en inhoudsgeldigheid is bevestig deur respondentterugvoer en vakspesialisinsette.

Betroubaarheid van die metingsinstrument is bepaal deur die berekening van itemmoeilikheidsgraad, itemdiskriminasie, gemiddelde, standaardafwyking en uiteindelik interne betroubaarheid van die finansiële kennis-, gedrags- en houdingsafdelings van die metingsinstrument.

In die gevallestudie, het eerstejaarstudente 'n gemiddeld van 50.17% vir die kennisfaktor behaal, alhoewel hulle hul eie kennisvlakke gemiddeld as 60.8% aangedui het. Respondente het hoofsaaklik gesukkel met kennisvrae wat handel oor beleggings, versekering en inflasie. Hul het die minste gesukkel met kennisvrae wat handel oor aftrede en inkomste en uitgawes.

Hierdie navorsing bevestig die belangrikheid van finansiële geletterdheid as bestuursvaardigheid, asook op 'n globale, nasionale, organisatoriese en persoonlike vlak.

Hierdie studie het 'n geldige en betroubare finansiële geletterdheidsmetings-instrument opgelewer; een wat deur diverse finansiële geletterdheidsaandeelhouers in Suid-Afrika aangewend kan word. Hierdie metingsinstrument sal empiriese inligting oor finansiële kennis-, gedrags-, en houdingsvlakke genereer en aantoon waar intervensie benodig word. Die belangrikheid van finansiële geletterdheid, sowel as die noodsaak vir 'n geldige en geloofwaardige metingsinstrument, is geleenthede vir verdere navorsing en ontwikkeling.

ACKNOWLEDGEMENTS

This research was inspired by the many eager faces and worried eyes of financial management students since 1998. Scared of finances and calculations, but eager to learn and enjoy class while learning. They inspired me to adapt corporate finances so that we as individuals can empower ourselves financially, and ultimately to find a way of measuring financial literacy. Hopefully with this instrument we can identify the limitations of educational intervention and empower people to manage their finances in such a way that personal wealth is increased.

The process of developing this measurement instrument involved family, personal and academic, and I would like, in particular, to show my sincere appreciation and gratitude to them:

- My hemelse Vader vir genade onbeskryflik groot en enkel voetspore.

- My ouers Hans en Irmgard vir jul direkte en indirekte invloed op hierdie studie. Pa, omdat jy my pro-aktief groot gemaak het en Ma, dankie omdat jy bereid is om enige iets te doen om jou kinders geleenthede te bied en dat jy die droom subtiel lewendig gehou het. Ma kan nou maar aftree, die werk is klaar.

- My vrou Elsa, omdat jy altyd geluister het, nooit my navorsing gekritiseer het nie, en altyd in my geglo het. Nou is dit jou beurt.

- My kinders, Heinrich en Marí, julle toekoms was my inspirasie en hopelik is my inspirasie julle toekoms.

- My study leader, Prof Erwin Schwella, for believing in the topic, for sharing your knowledge, experience, and tremendous work ethic, for critically assessing my research, structures, and writing style, and thus providing the ultimate learning experience.

- My colleagues at the SAMA, each expert in his/her field. My golf partner Gerhard, for your friendship, understanding, and linguistic brilliance. Oscar, thank you for the psychological insight you provided so eagerly, and Ariane for simplifying statistics and SPSS. To my colleagues in my subject group, Neethling, Ishmael and Beauty, thank you for tirelessly listening to my theories and explanations.

- My colleagues at Stellenbosch University: Professors Malan and Nel, for the input you provided at a crucial stage of my research.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Since 1994, South Africa has seen various changes in education and training policies on a national level. Some of the most significant changes in education and training occurred during 1997 when the Green Paper on Skills Development and the White Paper on Education were published. These documents changed the way that education and training are approached, planned and managed, but more importantly, specified what the objectives and outcomes of training and education should be.

The first significant change was in March 1997 when the Minister of Labour presented the Green Paper on Skills Development. This was one of the first steps in the establishment of the Skills Development Strategy (SDS), which guided the approach to education and training in South Africa. This strategy is supported by three acts of parliament that set out the detail of how training and education should be conducted. These are the South African Qualifications Authority Act (SAQA, Act no 58 of 1995), the Skills Development Act (SDA, Act no 97 of 1998), and the Skills Development Levies Act (SDLA, Act no 9 of 1999). These acts are of particular significance to training and education development as can be seen from the mission and purpose of the SDS.

The mission of the SDS is that it: "…contributes to sustainable development of skills growth, development and equity of skills development institutions by aligning their work and resources to the skills needs for effective delivery and implementation" (Department of Labour, 2005: 3). The SDS for 2005-2010 spells out the national priority areas to which income from the skills development levy will be allocated over the five years. According to Mdladlana (Department of Labour, 2005: 2), Minister of Labour, it has as its aim the support of the broader goals of government which are to halve unemployment and poverty, to reduce inequality, and further to ensure that the institutions of skills development, which in the main are the Sector Education and Training Authorities (Setas) and the National Skills Funds (NSFs), use their resources to advance the skills revolution. The five objectives set for 2005-2010 are:

- "Prioritising and communicating critical skills for sustainable growth, development and equity.

- Promoting and accelerating quality training for all in the workplace.
- Promoting employability and sustainable livelihoods through skills development.
- Assisting designated groups, including new entrants to participate in accredited work, integrated learning and work-based programmes to acquire critical skills to enter the labour market and self-employment.
- Improving the quality and relevance of provision." (Department of Labour, 2005: 4-20).

The purpose of the SAQA Act (RSA, 1995: 3-4) is to create a unified system of education and training qualifications. This is to be achieved by, amongst others, overseeing the development and implementation of the National Qualifications Framework (NQF). The NQF is a system that places all training into structured levels of qualification. The objectives of the NQF are to:

- "create an integrated national framework for learning achievements;
- facilitate access to, and mobility and progression within education, training and career paths;
- enhance the quality of education and training;
- accelerate the redress of past unfair discrimination in education, training and employment opportunities; and thereby
- contribute to the full personal development of each learner and the social and economic development of the nation at large." (RSA, 1995: 2).

The purpose of the SDA (RSA, 1998: 8), amongst others, is to develop the skills of the South African workforce and to improve the quality of life of workers and their prospects of work. It also strives to improve productivity in the workplace and the competitiveness of employers and to promote self-employment. The mission of the SDLA is to provide for the imposition of a skills development levy and for matters connected therewith. This act has imposed a levy on all employers since April 2000, excluding any public service employer in the national or provincial sphere of Government (RSA, 1999: 7-8).

The second significant change was the Education White Paper of July 1997 called: Education White Paper 3 - A Programme for the Transformation of the Higher Education System (DoE: July 1997). The aim of this White Paper was to provide ways and means for the reconstruction and development of South African society (RSA, 1997: 4). This was necessitated by changes in the social, cultural and economic environment because of the revolution in information and communications technology brought about by globalisation. The White Paper also indicates that the role of higher education (this includes SU and the SAMA) in a knowledge-driven world is:

- “Human resource development: the mobilisation of human talent and potential through lifelong learning to contribute to the social, economic, cultural and intellectual life of a rapidly changing society.
- High-level skills training: the training and provision of person power to strengthen this country's enterprises, services and infrastructure. This requires the development of professionals and knowledge workers with globally equivalent skills, but who are socially responsible and conscious of their role in contributing to the national development effort and social transformation.
- Production, acquisition and application of new knowledge: national growth and competitiveness is dependent on continuous technological improvement and innovation, driven by a well-organised, vibrant research and development system which integrates the research and training capacity of higher education with the needs of industry and of social reconstruction.” (White Paper, 1997: 1.12).

The Council on Higher Education, in a report in 2000, stated that:

> “Higher education, and public higher education especially, has immense potential to contribute to the consolidation of democracy and social justice, and the growth and development of the economy...These contributions are complementary. The enhancement of democracy lays the basis for greater participation in economic and social life more generally. Higher levels of employment and work contribute to political and social stability and the capacity of citizens to exercise and enforce democratic rights and participate effectively in decision-making. The overall well-being of nations is vitally dependent on the contribution of higher education to the social, cultural, political and economic development of its citizens.” (Council on Higher Education, 2000: 25-26).

The Ministry of Education states that the National Plan for Higher Education, which was started in 1998, is based on the policy framework outlined in the White Paper and the goals, values and principles that underpin that framework. These goals, values and principles intend to develop a higher education system that will:

- “Promote equity of access and fair chances of success to all who are seeking to realise their potential through higher education, while eradicating all forms of unfair discrimination and advancing redress for past inequalities;
- meet, through well-planned and co-ordinated teaching, learning and research programmes, national development needs, including the high-skilled employment needs presented by a growing economy operating in a global environment;
- support a democratic ethos and a culture of human rights through educational programmes and practices conducive to critical discourse and creative thinking, cultural tolerance, and a common commitment to a humane, non-racist and non-sexist social order;
- contribute to the advancement of all forms of knowledge and scholarship, and in particular address the diverse problems and demands of the local, national, Southern African and African contexts, and uphold rigorous standards of academic quality.” (White Paper, 1997: 1.14).

The first goal of the National Plan according to the White Paper of 1997 is: “To provide a full spectrum of advanced educational opportunities for an expanding range of the population irrespective of race, gender, age, creed or class or other forms of discrimination.” (White Paper 1997: 1.27). The strategic objective of the National Plan is to produce graduates with the skills and competencies necessary to meet the human resource needs of the country (Draft National Plan for Higher Education in South Africa, 2001: 14). Outcome five of the proposed National Plan, suggests an increase in enrolments in business and commerce studies from 26% (2001) to 30% in the following five to ten years (Draft National Plan for Higher Education in South Africa, 2001: 26).

Naturally, SU as a constituent of Higher Education supports these objectives in its assessment of what the ideal students’ characteristics should be. To mention a few: “…shaping developed and cultivated people whose potential is unlocked in a balanced manner to the maximum profundity and breadth…”; “…training people…to play a constructive role in the responsible and sustainable development [and so] contribute to the well-being and quality of life of people.” (Hattingh, 2005: 2). All faculties of the SU therefore should strive to achieve the enhancement of these characteristics, including the FMS housed at the SAMA.

The SAMA is an institution as envisioned by the strategic objective of the Draft National Plan for Higher Education. This unit is used by the Department of Defence (DoD) to produce graduates to meet the human resource needs of the country within the Defence environment. Although it is a military training unit it also provides undergraduate university education and professional military development for career-orientated officers. The aim of the education is to equip officers with knowledge, analytic skills and insight, and thus enable the SANDF to cope with a fast-changing environment, and to meet the demands of the future. This is very similar to the original aim at its establishment on 1 April 1950.

The SAMA was established under the auspices of the University of Pretoria, as a branch of the SA Military College (later renamed SA Army College) at Voortrekkerhoogte (now Thaba Tswane). The initial purpose of the Academy was to elevate the education of Permanent Force cadets to the level of a Baccalaureate in the Natural or Human Sciences, in order to provide the then Union Defence Force with a competent, highly professional corps of officers. Apart from their academic studies, the Academy students were also to continue their normal military training as cadets at the SA Military College. The Academy, based on the West Point model as far as was practicable, was thus created as a traditional military academy, producing officers for the Union Defence Force (Visser, 2007: 1).

In 1953 the SAMA moved to Saldanha to operate as a separate, independent institution that included naval students, and resort under the trusteeship of the University of Stellenbosch. In January 1961, the SAMA became a faculty in its own right – the FMS of SU. Over the years, the SAMA has transformed from being a traditional academy to being a military university, and back to being a traditional military academy that trains and educates candidate officers/midshipmen only (Visser, 2007: 1).

In order to confirm the relevance of the education on offer at the SAMA the institution had to compile a student profile and base it on the generic outcomes set by the Higher Education Quality Committee. A few of these outcomes are highlighted: “organising and managing oneself and one’s activities responsibly and effectively”, “developing entrepreneurial opportunities”, “contributing to the full personal development of each learner and the social and economic development of society at large”, and “exploring education and career opportunities” (Hattingh, 2005: 1). The profile, however, is also affected by inputs from the higher command of the SAMA, which is the Chief Joint Training Formation (CJTRNG).

Complementary to the academic profile, CJTRNG recently completed an outcomes analysis to determine the skills, knowledge and aptitudes required by officers at various operating levels (Smit, 2005: 1-5). In order to operate at these levels SANDF members will now have to complete various programmes that develop, educate, and train to achieve the necessary outcomes. The development of members focuses on leadership, communication and personal mastery skills. The educational aspect addresses academic development and the training aspect addresses functional military training. The personal mastery skills refer to the different forms of literacy of which financial literacy is envisaged as one.

Although ample evidence exists in the aforementioned discussion of the envisaged outcomes and objectives of education and training, there is also evidence that suggests that these outcomes are not achieved. Various publications such as the *Sunday Sun* and *Management Today* question the education of South Africans, and preliminary tests completed at the SAMA support these concerns by measuring low financial knowledge levels.

“A nation of financial dunderheads” was the statement made by the *Sunday Sun* on 23 June 2003 (Anon, 2003: 33). Swart (2005: 49), of Unisa, echoed this sentiment in the May 2005 edition of *Management Today* by stating that financial empowerment of learners and young people has not been addressed by the educational system as a whole. He continued by saying that no structured and effective education and training is received by these young people, and his statements can be supported by statistics on bankruptcy, savings and debt. According to the South African Institute of Race Relations (2006: 13) there were 3 225 liquidations and 808 939 judgements for debt in 2005. Added to this, household savings compared to disposable income were only 0.2%, and household debt compared to disposable income was 63.4% in 2005. In 2004, these figures were 0.3% and 56.8% respectively.

It has also become noticeable to the researcher that the financial knowledge and skills of young students at the SAMA are not as expected. Numerous enquiries by students in the Financial Management class, over a number of years, about personal finances confirm an under-developed skill and knowledge base. An informal questionnaire completed by students every year since 1998 has confirmed this perception and experience. The informal questionnaire included questions such as the rand/dollar exchange rate, return on a savings account, and the income level at which registration was required for tax purposes.

These are some of the financial issues that young soldiers who earn a salary face and with which they should be conversant. These young officers should know when to register for personal tax purposes. They should also know how much interest they are earning on the account into which their salaries are paid, and should have an idea of basic indicators such as the rand/dollar exchange rate. The informal study was carried out on the Military Management (Financial Management) class that has completed the questionnaire annually since 1998. The result of the research was that the majority of the students could not provide the correct answers to most of the questions.

The final confirmation of the low levels of financial knowledge and skills was the average of 48.86% obtained by 172 first-year students when completing a preliminary financial literacy test in February 2006. This survey, conducted by means of a questionnaire, consisted of 53 questions of which 31 questions tested financial knowledge. Students between the ages of 19 and 29 from all nine provinces completed the questionnaire. The 122 males represented 70.9% of the 172 respondents. Of these students 36% indicated that they had attended some classes/training that addressed financial literacy. All of these students earned a salary and 5.8% earned an additional income. The knowledge section covered questions on budgeting, savings, retirement, insurance, tax, inflation, financing and investments.

The questions asked in the preliminary questionnaire were very similar to the 2004 Personal Financial Survey of High School seniors in the United States. More than 4 000 grade 12 students in 215 high schools in over 33 states completed this survey, with a pass rate of 52.3% (Casserly, 2004).

In summary, although many changes have taken place since 1997 in policies on education and training, there is a perception that these policies have been unsuccessful in empowering people by improving their financial literacy. The perception of the nation being financially illiterate was expressed in various publications, and is supported on a small scale by the findings of measurement instruments that still have to be assessed for their validity and reliability, which brings us to the statement of the problem.

1.2 PROBLEM STATEMENT

In brief, the problem is the development of a valid and reliable measurement instrument of financial literacy. In order to measure the financial knowledge, behaviour, and attitude of people in South Africa a scientific, socially relevant, valid and reliable measurement instrument should be developed.

Currently, there are no such measurement instruments available in South Africa. The test used at the SAMA in 2006 consists of questions adapted from international questionnaires. The validity and reliability of the individual questions, and the questionnaire as a whole, are yet to be assessed. These international questionnaires are also linguistically and culturally insensitive.

For an instrument to be valid, it needs to measure what it claims to measure. Different types of validity can be assessed such as face, content, and construct validity. For the same instrument to be reliable, it needs to be a consistent measurement instrument. To develop such a valid and reliable measurement instrument the following research goals and objectives can now be formulated.

1.3 RESEARCH GOALS AND OBJECTIVES

As indicated in the previous section the problem is the correct and accurate measurement of the financial knowledge, behaviour and attitude levels of South Africans. The primary goal, therefore, of this research is the development of a reliable and valid financial literacy measurement instrument that is scientifically and socially relevant in the South African context. To assess its validity and reliability the measurement instrument will have to be applied within a case study environment such as the SAMA.

In order to achieve the above-mentioned primary goal the following objectives will have to be achieved:

- What is financial literacy?

- What constitutes a financial literacy measure?
- Are the first-year officers at the SAMA financially literate?
- What is first-year SAMA students' own perception of their financial literacy (financial knowledge and behaviour)?
- What is the attitude and behaviour of young officers towards financial issues?
- What financial products do first-year years at the Military Academy have?
- How can the financial literacy measurement instrument be improved in view of the application and validation of the measure in this particular case?

1.4 IMPORTANCE OF THE STUDY

There are many reasons why this research study is important. This study will stress the importance of financial literacy as a management competency; it will illustrate the importance of financial literacy at a global, national, and organisational level and it will develop a valid and reliable measurement instrument that can be used by different stakeholders in South Africa. Because of the importance of financial literacy, having a valid and reliable measurement instrument will create opportunity for future research and development.

By studying management competencies at the general and public level, and by scrutinising the profile of a military officer, this study will identify financial literacy as a core competency requirement for young officers within the SANDF. Although no evidence exists of financial literacy being defined as a core competency for managers in general, or within the public sector, financial literacy is identified in Chapter 2 as an essential management competency.

In reflecting on the contextual nature of financial literacy, this research will also illustrate the importance of financial literacy at the global, national, and organisational level. At the global level, there is a perception that the financially literate contribute to improved social cohesion and more effective resource allocation. At the national level, it is believed that financial literacy is required to address the knowledge imbalances of changing markets, changing technology and changing personal needs. The financially literate will ensure and improve the effective functioning of financial markets, will reduce the need for regulation and decrease the paternalistic role of government. The benefits to an organisation such as the SANDF are not only the already-mentioned required competency, but also the reduced administration associated with employees in financial difficulty, an improvement in effectiveness at work, and less fraud and corruption. For the individual, improved financial literacy could mean an increase in financial well-being and less financial stress.

The benefits of developing a valid and reliable measurement instrument apply to various stakeholders and are twofold. Firstly, having a valid and reliable measurement instrument will allow stakeholders to measure financial knowledge, behaviour and attitude consistently. Secondly, stakeholders will be able to draw useful conclusions on the findings. Globally, countries that illustrate unacceptable levels of financial literacy could be identified, and the areas of concern addressed. At the national level, the results from the measurement instrument could indicate where additional educational and training interventions are required, what interventions are required, and how they should be presented. Also at the national level, it could indicate where regulation is required to protect the community. Various examples exist throughout the world of risky investments that investors continued investing in. In Italy in the past few years companies such as Parmalat and Cirio collapsed, leading to losses for thousands of investors. In the USA, there was Enron and in Ireland there was the state-owned telecommunications company Eircom. A booming stock market in the late 1990s in the Netherlands saw 6% of families borrowing money to buy shares. When the market collapsed, so did these families.

For organisations such as the SANDF, the measurement instrument can indicate the level of financial literacy, and the risk that this holds for the organisation. Measuring financial literacy not only indicates if an individual is competent as an officer, but it can also be an indication of financial stress levels and financial well-being. If financial literacy levels are high, the financial stress levels should be low, financial well-being should be high, employees should be more effective at work, and the risk of theft and fraud should be low. The instrument can also indicate where education and training by the organisation can be improved, and what subjects need to be presented.

For organisations such as the Department of Education and Labour, SU and the SAMA the value of the financial literacy measurement instrument lies with the information it provides on educational and training interventions. Not only will it indicate the effectiveness of existing interventions, but also indicate where there is room for improvement. The measurement instrument may also prove useful in determining a relationship between financial success and financial literacy. If no such relationship can be proven, academics, educationalists and trainers will have to find alternatives to improving financial well-being.

Other stakeholders such as financial institutions can also benefit from a valid and reliable measurement instrument. Information gathered with the instrument can indicate the need for financial products and services, as well as the marketing required to promote different products and services.

Lastly, the importance of financial literacy as a concept and the importance of developing a valid and reliable financial literacy measurement instrument will create further opportunities for research and development. For now, it is imperative to develop a South African financial literacy measurement instrument, and to do so effectively it is important to follow a sound methodology.

1.5 METHODOLOGY

To address the research problem and to achieve the research goal and objectives both a qualitative and quantitative research methodology will be followed. A qualitative approach is required to develop a measurement of financial literacy and a quantitative approach is required to ensure that the measure instrument is valid and reliable. The research design, according to Ghauri, Grønhaug, and Kristianslund (1995: 14, 26), relates to the choice of strategy used to collect the information needed for answering the research problem in the best possible way within the given constraints. Bless and Higson-Smith (1995: 63), refer to this process as being research management or planning, and therefore prefer the adoption of a definition that relates to the testing of a hypothesis. To test such a hypothesis, according to Bless and Higson-Smith (1995: 63-64), a good research design requires answers to fundamental questions such as the focus, the unit of analysis, and the time dimension.

The focus of achieving the primary goal of this research is the development of a financial literacy measurement instrument. The focus of the secondary goal is the social study of the financial knowledge, behaviour and attitude levels of people that can be classified in three categories: conditions, orientation, and actions (Bless & Higson-Smith, 1995: 64). The measurement instrument should give information on the condition of the financial knowledge and understanding; the orientation or attitudes and beliefs of subjects toward financial activities and products; and the financial actions of the respondents.

A financial literacy measurement instrument will be constructed after reviewing the literature on the contextual (Chapter 3) and conceptual nature (Chapter 4) of financial literacy, and consultation with subject experts. The subject or unit of analysis of the designed measurement instrument will be the individual as defined by Bless and Higson-Smith (1995: 65). The development of the financial literacy measurement instrument is of general interest because it will allow the measurement of financial literacy by various stakeholders. The SAMA may find the application to be of intrinsic value, or, as defined by Mouton and Marais (1996: 49-50) of contextual interest. As stated in the previous section, organisations, especially within the educational environment, will be able to measure the gap between actual and preferred financial knowledge, behaviour, and attitude.

The distinction between contextual and general interest is important in determining the eventual validity of the research. Contextual interest research is internally valid if *"*the constructs were measured in a valid manner, the collected data are accurate and reliable, the analyses are relevant for the type of data, and the final conclusions are adequately supported by the data*",* according to Mouton and Marais (1996: 50-51). Research of a general nature has to be internally and externally valid, where external validity refers to findings being *"*generalizable to all similar cases*"* (Mouton & Marais, 1996: 51). Therefore, this research will also have to assess the external validity of the measurement instrument.

The third fundamental aspect of testing a hypothesis is the manner of dealing with time. The aim of the study is to measure financial literacy so that the results can be acted on. Therefore, the research and specifically the measure instrument is not developed to explore reasons or relationships but to measure the state of affairs at a specific point in time. This is an important consideration in the development of the financial literacy measurement instrument. The instrument should be developed so that it is applied as a once-off measurement of a specific subject.

The research design is twofold. In developing a measurement instrument of financial literacy the research design is primarily exploratory, but the assessment of the validity and reliability forms part of descriptive research. Measurement is defined by Ghauri*, et al.* (1995: 42) as: "rules for assigning numbers (or other numerals) to empirical properties", and numerals have no quantitative meaning unless they are given such a meaning. Measurement is also seen as the link between the conceptual and the empirical levels (Ghauri*, et al.,* 1995: 43), and there are various examples of measurement instruments. Welman, Kruger, and Mitchell (2008: 149-174) mention measurement instruments such as: unobtrusive measurement, group contacts such as survey questionnaires, personal visits and communication by telephone, individual apparatus and direct observation. Having studied the definition of each instrument it was decided to make use of survey questionnaires as measurement instrument of financial literacy. According to Bless and Higson-Smith (1995: 109), and Welman, *et al.* (2005: 152), a questionnaire is the ideal technique to collect survey data because it generally provides information on:

- what a person knows: knowledge, factual information;
- what a person likes or dislikes: values, preferences, interests, tastes;
- what a person thinks: attitudes, beliefs;
- what a person has experienced or what happens at present;
- the typical behaviour of a person.

Questionnaires also have the advantage of being easily standardized, cheap and time effective (Bless & Higson-Smith, 1995: 114) if the following basic conditions are met with regard to the objectivity of information received (Bless & Higson-Smith, 1995: 109). Firstly, the respondent should cooperate willingly and be motivated to share their knowledge. Secondly, respondents must express their reality rather than what they wish the reality was, or what they think it ought to be, or what they believe to be the best answer to satisfy the researcher. The third condition is that respondents must be aware of what they feel and think and be able to express these in order to communicate information. Consequently, if these conditions are met, it should be possible to determine, according to Chapter 4, for instance, the ability of first-year students at the SAMA to face their financial issues. A chapter outline is now presented to indicate the process of developing a valid and reliable financial literacy measurement instrument.

1.6 CHAPTER OUTLINE

The scope of this study will be divided into six chapters. The summary of each chapter is as follows:

Chapter 1 introduces the reader to the changes that have taken place within the training and education environment at various levels since 1997, with specific emphasis on the strategy, aims, objectives and outcomes envisaged. The background also indicates that the effectiveness of these training and educational changes are questioned in various publications, as well as when measured. The validity and reliability of the reactions towards the changes in training and education results in the problem statement and the research goals and objectives. The chapter then focused on the importance of the study at global, national and organisational level. The research methodology is broken down into its various components, addressing the approach and strategy to be followed to collect required information. The methodology incorporates the research design required to find answers to aspects such as focus, unit of analysis, and the time dimension. The focus is the development of a valid and reliable financial literacy measurement instrument, in the form of a questionnaire, to be used on any South African individual as the unit of analysis at a specific point in time.

Chapter 2 focuses on life skills and the management competencies required by managers. The definition of Draginidis and Mentzas (2006: 53) is used in the chapter as a departure for the discussion on competencies. The chapter will then proceed to identify the management competencies for both the private and public sector, and the specific competencies required by the SANDF manager (officer) by scrutinising the profile of an officer. Boyatzis' application of competency clusters to specific levels of management is accepted as the competencies required by an entry-level manager, and acknowledging the differences that exist between private and public management, Virtanen's competency clusters are used as the basis for management competencies. The competencies identified within the SANDF are defined as either functional or personal, with financial literacy being a personal competency. These SANDF competencies are identified by scrutinising performance assessment criteria, educational offerings, code of conduct, and the preliminary competencies as identified by Chief Joint Training. The aim of the chapter is the establishment of financial literacy as a core competency of public managers and the ideal officer in the SANDF. The importance of financial literacy, however, is only established in Chapter 3.

Chapter 3 addresses the contextual nature of financial literacy by identifying the need for financial literacy and studying the scope of financial literacy presentations and the impact of financial literacy training and education on a global and national level. The chapter makes a case for the importance of financial literacy education and training by scrutinizing the global, national, and organisational environment. The need for financial literacy will be identified, amongst others, as the answer to ineffective utilization of limited resources, the lack of social cohesion, unproductive global debate, ineffective functioning of markets, taking responsibility for personal financial planning, improved organisational effectiveness, and personal financial stress levels, and, to organisations such as the SANDF, decreased operational readiness.

Chapter 3 also highlights the efforts to address financial literacy education and training by various stakeholders, ranging from governments to private institutions individually and in collaboration. These efforts are aimed at improving skills, knowledge and financial behaviour by addressing broad financial literacy, investment, savings and indebtedness. The impact of these interventions is also addressed in the chapter.

Chapter 4 addresses financial literacy as a concept, and by scrutinising synonyms and various definitions identifies an acceptable definition for financial literacy. The accepted definition is then developed in concepts such as essential mathematical reading and comprehension skills, financial knowledge and understanding, and competent financial behaviour and attitude. These concepts will then be contextualised by focusing on the financial issues relevant for 18-24 year olds, and the abilities required to be financially literate. Financial issues will be identified through scrutinising the functional requirements of the SANDF, the learning area outcomes within the SA educational environment, the internationally accepted financial literacy outcomes, the financial and financial information needs of 18-24 year olds, and the general outcomes associated with a life cycle that is applicable to 18-24 year olds.

The financial ability required refers to financial knowledge, skills, attitudes, awareness and behaviour, and the chapter focuses on research by Roy Morgan Research and Widdowson and Hailwood to identify the basic requirements and the advanced competence required to be financially literate. Research by Hilgert and Hogarth will be quoted in Chapter 4 to illustrate acceptable financial behaviour and a list of financial products that indicate positive financial activity will be given. These are the elements that should be included in a measurement tool that measures financial literacy. This will be developed in the next chapter.

Chapter 5 will focus on the development of a valid and reliable measurement instrument of financial literacy. A five-step approach will be followed in which financial literacy as a phenomenon is developed into concepts, indicators, and, ultimately, questions to be included in a measurement tool. The first step will indicate the process of determining the specific information required and from whom it should be sought. The second step will show how a questionnaire is selected as measuring instrument, and in the third step a draft questionnaire will be constructed. The draft questionnaire will then be developed by addressing the aspects of question content, question wording, response format, structure and layout. The fourth step of the questionnaire development in Chapter 4 deals with the pre-testing and revision of the questionnaire. Ultimately, this step will assess the validity and reliability of the measurement instrument and will draw attention to issues to be resolved in a main survey.

Chapter 6 will summarize the process followed through the chapters to arrive at the main survey and then present the findings of the main survey. The findings will be presented as descriptive results of the survey, and, more importantly, as an assessment of the validity and reliability of the financial literacy measuring instrument. The chapter will conclude by reflecting on the limitations of the study, make general recommendations on financial literacy, and specific recommendations on the measurement instrument. Finally, the chapter will highlight possible future research topics.

1.7 CONCLUSION

This chapter outlined the research problem and research goals by reflecting on the changes that have taken place within the training and educational environment. It proposed a research methodology to address the research goal and objectives and outlined the proposed chapters. Chapter 2 will now focus on life skills and management competencies for managers within the private and the public sector and generate a theoretical profile of the skills and/or competencies required by a young officer in the SANDF. The primary aim will be to establish financial literacy as a necessary core competency.

CHAPTER 2

FINANCIAL LITERACY AS CORE COMPETENCY

2.1 INTRODUCTION

The previous chapter identified the changes that have taken place in the educational and training environment with the aim of increasing the skills and knowledge of learners. The chapter also made brief mention of the perceived lack of financial literacy empowerment, and the low financial knowledge levels of young officers at the SAMA. These young officers are also public employees and the future managers of the Department of Defence, whose career development may depend on mastering financial literacy as a personal mastery skill and competency. Although financial literacy within the SANDF may be seen as a personal mastery skill, the personal and professional capacities are not necessarily distinct. And as quoted by Young and Dulewicz (2005: 228): “As long as there is potential gain to be derived from identifying the relationships between managerial success and the individual attributes, there is a clear need for studies exploring links between managerial performance, specific competencies and underlying personality”.

The aim of this chapter is to define and identify the competencies required by a manager, specifically a public sector manager, and then, specifically, an officer in the SANDF. The focus will be on the manager at entry level in the SANDF context, that is, from a lieutenant to the rank of a full colonel. The idea is to determine if financial literacy is a necessary core competency of public managers and of the ideal officer in the SANDF. The focus of this chapter will therefore include the following:

- defining the term “competency” within the human resource context;
- identifying general competencies required at management level;
- identifying management competencies required in the public sector;
- profiling the young officer in the SANDF with reference to competencies.

This overview, collection and comparison of, firstly, competencies, and secondly, of officer profiling as described by various national and international authors, both in the private and public sectors, will provide the basis for developing a financial literacy measurement instrument so that it can be tested on officers at the SAMA to determine its validity and reliability. The results of measuring financial literacy will indicate if young officers are financially literate, and if concern is appropriate.

2.2 DEFINING MANAGEMENT COMPETENCIES

In order to improve the validity of the measurement instrument, it will be a good idea to apply it within a case study where financial literacy is important as a life skill or competency, but to do so, competencies should first be defined and identified. The aim of this section, therefore, is to define the management competencies by exploring current research, and, then in the next section to identify some of the general management competencies. The discussion will commence with a discussion of the intricacies of defining competency, competency types, and competency characteristics before accepting an appropriate definition for both competency and corporate competence.

In searching for an acceptable comprehensive definition for competency it became clear that this not a new concept. The earliest existence of this concept was during the time of the early Romans, according to Draginidis and Mentzas (2006: 52), where the aim was to use competency profiling in an attempt to detail the attributes of the "good Roman soldier". Draginidis and Mentzas identify McClelland, a distinguished Harvard psychologist, as being responsible for introducing the idea of "competency" into the recent human resource literacy, and Mitrani, Dalziel, and Fitt, (1992: 18), date the existence of a competency movement within the American industrial organisational psychology to the late 1960s.

Although it is not a new concept, defining competency is not a clear-cut issue, because competency means different things to different people. Each of the different stakeholders involved has their own agenda and therefore their own definition of competency (Hoffman, 1999: 275). The "competency stakeholders" referred to are people such as psychologists, management theorists, human resource managers, educationalists and politicians. Therefore, Boyatzis (1982: 22), as early as the eighties stated that to define a competency "… we must determine what the actions were and their place in a system and sequence of behaviour and what the results or effects were and what the intent or meaning of the actions and results were".

To enhance the complicacy, distinction is made in the UK between competence and competency. Similar to terms such as effectiveness and efficiency these terms are used arbitrarily. As a result, Hoffman (1999: 275) suggested that competence be defined according to the job description set, and that competency be defined according to the individual behaviour illustrated. Hoffman's explanation is illustrated in Figure 2.1, and is supported by authors Young and Dulewicz (2005: 229) in 2002. They referred to aspects of the job at which a person is competent (competence) compared to aspects of the person (competency) that enable him/her to be competent. For example, a person making a financial transaction illustrates competency by having money available and the competence by being able to make the transaction.

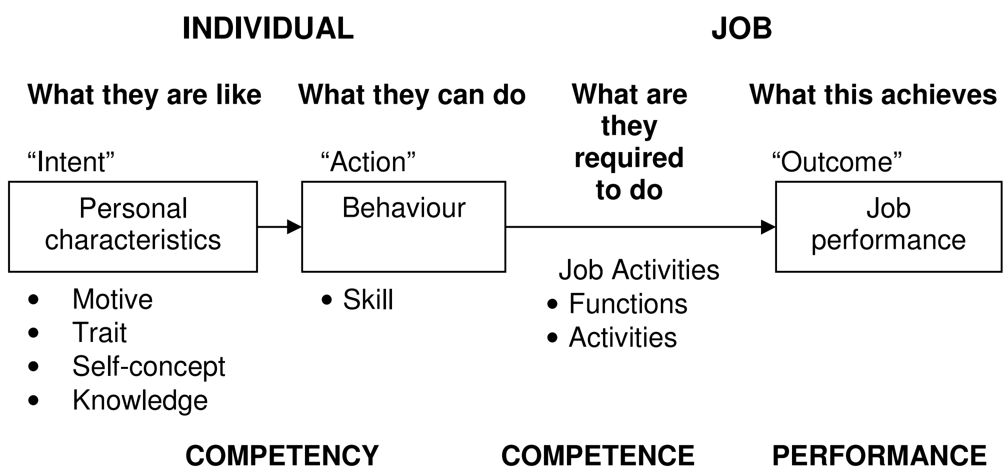

Figure 2.1: Adjusted competency causal flow model
Source: Adjusted from Mitrani*, et al.*, 1992: 29 and Young and Dulewicz, 2005: 229.

The behaviour or behavioural competencies can be common or specific, according to May (1999: 336). Common behavioural competency is self-explanatory, but in the context of this study, a brief explanation of specific behavioural competency will suffice. Specific behavioural competencies are specific because of the business of the organisation. The officer acting as a gentleman/lady is a specific behavioural competency required within the military environment.

Boak and Coolican (2001: 213), in quoting Mitchell (1989), argue that in theory, behavioural competencies and occupational standards are complementary, because behavioural competencies also expresses the skills and abilities required for effective performers to achieve the outcomes expressed by the occupational standards. In trying to clarify the confusion that might exist, Boyatzis (1982: 23) suggests that behavioural competence be referred to as “capabilities”, but for the purpose of this study, the term competency will suffice.

What is also clear from the figure and the arguments of Hoffman (1999: 275), and Young and Dulewicz (2005: 229), is that there is the supply (input) side and the demand (output) side to competency and competence. Various authors, as quoted by Hoffman (1999: 276), in defining competency have taken a stance to either side:

- observable performance (Boam and Sparrow,1992; Bowden and Masters, 1993);
- the standard of quality of the outcome of the person’s performance (Rutherford, 1995; Hager*, et al*., 1994);
- the underlying attributes of a person (Boyatzis, 1982; Sternberg and Kolligian, 1990).

However, defining competency is not restricted to an input and output side, but may also be defined by various terms, classifications, and characteristics. Firstly, the research done by Draginidis and Mentzas (2006: 52) illustrates that competency can be defined by aspects such as:

- Category: A group to which homogeneous and/or similar competencies belong.
- Competency: A descriptive name for the specific competency.
- Definition: Statements that explain the basic concept of competency.
- Demonstrated behaviour: Behaviour indicators which an individual should demonstrate if the specified competency is possessed.

Secondly, there are various classifications of competencies. Competencies can be classified as differentiating, and threshold or essential competencies. Differentiating competencies distinguish between superior and average performers, while threshold or essential competencies refer to the requirements for minimally adequate or average performance (Mitrani, *et al.*, 1992: 27-28). Boyatzis (1982: 23) identified threshold competencies as referring to a person’s generic knowledge, motive, trait, self-image, social role, or skill that is essential to performing a job.

All non-technical competencies have been classified as being generic competencies and cover individual characteristics such as: attitudes, motivation, and personality traits (Agut, Grau, & Peiró, 2003: 906). Mitrani*, et al.* (1992: 28-29) included these characteristics when identifying five classes of competencies: motive, trait, self-concept, content knowledge, and cognitive and behavioural skills. The first four are examples of personal characteristics, and skills are behavioural in nature as can be seen in Figure 2.1. Motive simply is what drives a person. Traits that are important for managerial effectiveness are locus of control; self-esteem; the need for achievement; affiliation and power (George & Jones, 2006: 48). To improve effectiveness the easiest characteristics to influence are knowledge and skills, because employees can be trained and/or educated. Therefore, Mitrani*, et al.* (1992: 29) suggests that organisations should appoint employees according to the required motives and traits, and then develop the required knowledge and skills.

Thirdly, Chan (2006: 146), in studying authors such as Cooper (2000), Parry (1996) and Shippman, *et al.* (2000) identified the following characteristics of competencies:

- a cluster of knowledge, skills, abilities, motivation, beliefs, values and interests;
- related to a major part of the job;
- associated with effective and/or superior performance;
- observable and measurable against well-accepted standards;
- linked to future strategic directions;
- can be improved via training and development.

So far, the approach to defining competency has been either input based, output based or according to terms, classification and characteristics. Although the process of defining competency is interesting, this research needs to identify an acceptable definition, and the search continues by listing various definitions put forward over a number of years as illustrated in Table 2.1.

The definitions in the table are best summarized by referring to the work done by Mitrani *et al.* (1992: 18, 27, 31), the HR-XML Consortium Competencies Schema, and Draginidis and Mentzas (2006: 51-64). Firstly, Mitrani *et al.* suggest that a competency is what people bring to the job, but that this should causally relate to effective or superior performance, and secondly that the competencies should reflect the behaviour required for the future success of the organisation. Although some authors relate competencies to successful performance, it should be noted that not all competencies have a causal relationship with superior job performance. Ketel (2005: 39) refers to Meyer as supporting this opinion by stating that competency does not necessarily result in satisfactory performance. Successful performance is the result of a combination of competency, motivation and opportunity.

Table 2.1: Current Definitions of the Competency Concept

Definitions	
Klemp (1980)	An underlying characteristic of a person which results in effective and/or superior performance in a job.
Boyatzis (1982)	An underlying characteristic of a person in that it may be a motive, trait, skill, aspect of one's self-image or social role, or a body of knowledge which he or she uses.
Marrelli (1998)	Competencies are measurable human capabilities that are required for effective work performance demands.
Dubois (1998)	Competencies are those characteristics – knowledge, skills, mindsets, thought patterns, and the like – that, when used either singularly or in various combinations, result in successful performance.
LeBoterf (1998)	Competencies are not themselves resources in the sense of knowing how to act, knowing how to do, or attitudes, but they mobilize, integrate and orchestrate such resources. This mobilization is only pertinent in one situation, and each situation is unique, although it could be approached as an analogy to other situations that are already known.
Selby*, et al.* (2000)	Ability expressed in terms of behaviour.
Perrenaud (2000)	A capacity to mobilize diverse cognitive resources to meet a certain type of situation.
Jackson and Schuler (2003)	Competencies are defined as "… the skills, knowledge, abilities and other characteristics that someone needs to perform a job effectively".

Source: Adapted from Draginidis and Mentzas, 2006: 52

Another comprehensive and recent definition of competency is the one offered by the HR-XML Consortium Competencies Schema, as quoted by Draginidis and Mentzas (2006: 52). They defined competency as: "A specific, identifiable, definable, and measurable knowledge, skill, ability and/or other deployment-related characteristic (e.g. attitude, behaviour, physical ability) which a human resource may possess and which is necessary for, or material to, the performance of an activity within a specific business context." Important to note is that the existence and possession of the competency might not even be known by the holder thereof (Boyatzis, 1982: 21).

To conclude this general assessment of competency the definition presented by Draginidis and Mentzas (2006: 53) is accepted as the working definition for this research. The definition states that competency is: “A combination of tacit and explicit knowledge, behaviour and skills, which gives someone the potential for effectiveness in task performance.”

This definition is accepted as the working definition because it also relates to the public sector, the corporate environment and the military environment. With regard to the public sector Bone and Griggs, according to Lawton and Rose (1994: 189), listed competency as one of the three C’s of quality in public service, suggesting a causal relationship between what employees bring to the public organisation, and what is expected to be successful.

From a corporate perspective competence is seen as something an organisation is good at doing (Thompson, Strickland & Gamble, 2005: 900). A core competence is a competitively important activity that is central to company strategy and competitiveness, and that a company performs better than other internal activities, and better than their rivals (Thompson, *et al.*, 2005: 91). Most often, this competence is cross-department knowledge-based, residing in people, is in a company’s intellectual capital, and not in its assets on the balance sheet. Important to note is that all companies have competencies and the core competencies are the ones that make them competitive. Also of importance, and worth repeating, is the fact that the competency resides in people.

Table 2.2: Typologies of Meaning and Purpose of the Term “Competency”

	Individual	Corporate	Purpose
Output	Performance standards	Benchmarks	Performance based objectives (training)
Input	Knowledge, skills and abilities	Distinctive strengths	Subject matter content (education)

Source: Hoffman, 1999: 283

Hoffman summarized the different approaches to individual and corporate competency and the purpose of each in Table 2.2. The table indicates on the vertical axis that an approach is either input or output based. The horizontal axis indicates that the approach be applied to either individual or corporate types of competency descriptions. On the far right is the purpose of that specific typology.

As a concept in the military environment, Vuono (1990: 3) of the United States Army defines competency as being an expert in the profession of arms, and having knowledge of your job at every level. He adds that competence is not an inherited trait but is due to dedication, education, experience, tough realistic training, and plain hard work. Now that competencies are defined within a personal, public, corporate, and military context, the general management competencies should be identified.

2.3 GENERAL MANAGEMENT COMPETENCIES

Having defined personal and organisational competency, and summarized the different approaches to competency, the discussion will now focus on identifying the general management competencies required of managers. In order to arrive at the specific competencies required of entry-level managers a process will be followed where management, managers and their roles and skills will be discussed. This is to ensure a good understanding of the outcome that is required and the input necessary to achieve it.

Cronje, Du Toit, and Motlatla (2001: 100) defined management as the process whereby human, financial, physical, and informational resources are employed for the attainment of the objectives of the organisation. Given the scarcity of resources, efficient management depends on managers being able to fulfil important functions and roles and to illustrate various skills.

A manager, according to Kroon (1995: 8) is a person who has been appointed in a leading position to take charge of people, to motivate them and to decide how to do things correctly. In laymen terms it means that managers have to decide what to do, how to do it, have to order that it be done, and lastly, have to check that it was done. Stoner and Freeman (Kroon, 1995: 14-17) elaborates on this general statement by indicating the following as examples of what is expected from managers:

- to work through and with other people to achieve the goals of the organisation;
- to serve as channels of communication in the organisation;
- to balance the competing goals and set priorities;

- to think analytically and conceptually;
- to make complex decisions;
- to fulfil different roles;
- to delegate tasks to competent subordinates;
- to be responsible and accountable for the execution of their duties;
- to act as mediators;
- to fulfil the role of politicians;
- to act as diplomats.

Colour is added to the picture when Kroon (1995: 23) suggests that management is an art as well as a science. He motivates this by saying that science consists of as much verified and systemized knowledge as possible but even if it is applied together with good vision and successful communication skills, it does not necessarily guarantee that managers will be successful. The successful application of theory in practice, therefore, is an art, and one of the biggest challenges facing managers. Bateman and Zeithaml, according to Kroon (1995: 9), characterized effective managers as follows:

- They are good leaders.
- They create a favourable work environment.
- They work with and through other people.
- They provide opportunities and incentives to achieve high performance.
- They use limited resources optimally.

The above discussion illustrates the functions of management and can be summarized as planning, organising, leading and controlling. The suggestion by Appleby (1991:16) that decision-making should be another function highlights the fact that the tasks of management are rather complex and time consuming. According to Appleby two British studies found that managers spend 66-80% of their time in oral communication (Appleby, 1991: 26), and Mintzberg's research found that top management spent their time as follows: 59% on scheduled meetings, 22% at their desks, 10% on unscheduled meetings, 6% on telephone calls and 3% on inspecting the facilities of the business (Cronje*, et al.*, 2001: 109). Figure 2.2 illustrates the time allocation for the basic management functions by different managers as seen by Kroon.

Within the functions as illustrated in Figure 2.2 there are various roles to be played by managers. Mintzberg identified the various roles to be an interpersonal role, an information role, and the decision role. Each of these roles has specific functions to complete. For instance, the interpersonal role requires the manager to be a figurehead, leader, and liaison. The information role requires the manager to be a disseminator, spokesperson, and a monitor. The decision role can be executed as an entrepreneur, resource allocator, negotiator or disturbance handler (Appleby, 1991: 26). These roles are also illustrated in the competing values framework as developed by Quinn, Faerman, Thompson, and McGrath (1990: 15), and illustrated in Figure 2.5.

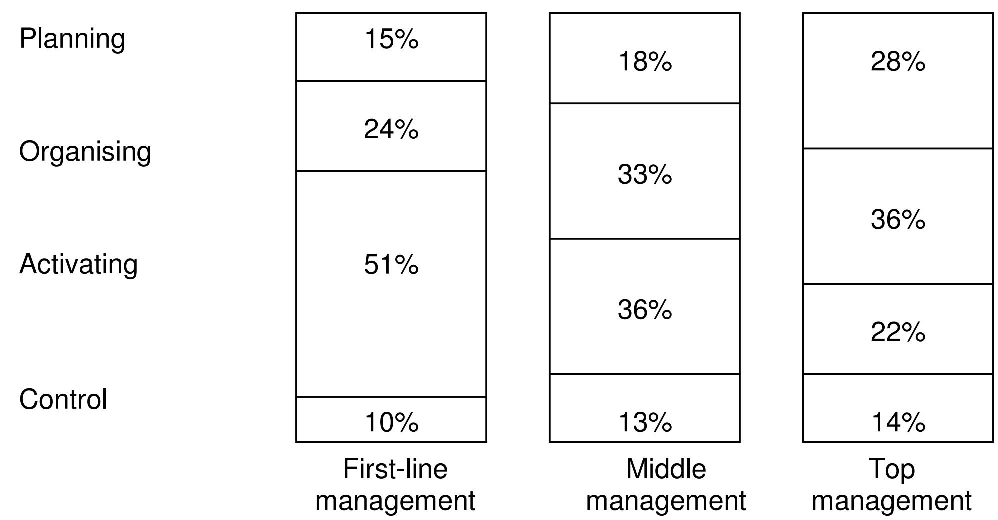

Figure 2.2: Time allocation for basic management functions

Source: Kroon, 1995: 20

Not only does each function of management have its different roles, with its own activities, it also has main supplementary or supporting management activities that can be distinguished. Cronje, *et al.* (2001: 109) identified these activities as the gathering and processing of information to make decisions possible, decision-making, communication and negotiation. Kroon (1995: 7), in referring to Schermerhorn, added some more activities such as motivation, coordination, delegation, and disciplining to the ones already referred to by Cronje. To be able to complete these activities there are definite skills that should be acquired, and these skills are the skills referred to in the definition of competencies as accepted in the previous section. Draginidis and Mentzas (2006: 53) defined competency as a combination of tacit and explicit knowledge, behaviour and *skills*, which gives someone the potential for effectiveness in task performance.

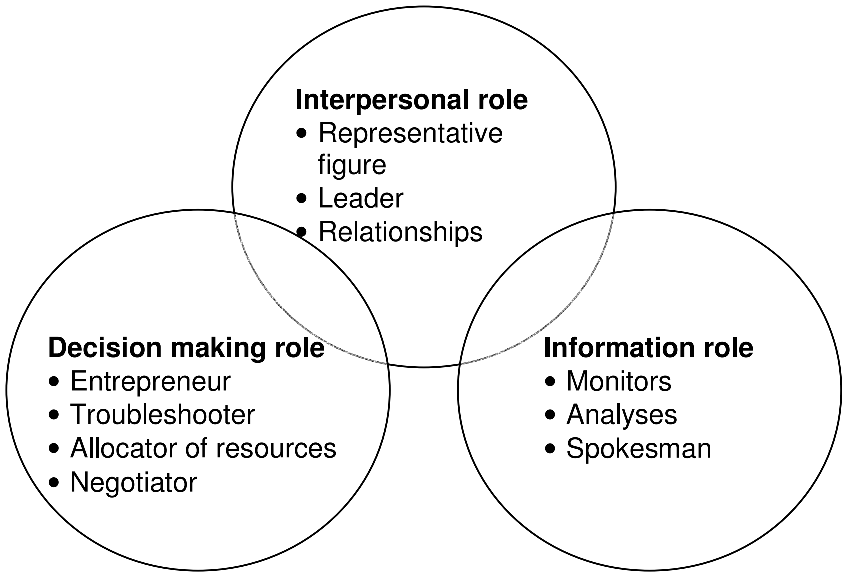

Figure 2.3: The overlapping roles of managers

Source: Cronje*, et al.*, 2001: 108.

Katz classified three basic management skills as essential to effective management. These skills are: technical, human and conceptual. Technical skills, also referred to as functional skills, are the ability to use tools, procedures, and techniques in a specialised area. Human skill is the ability to work with, understand, and motivate people as individuals or groups. Human skills are also referred to as interpersonal skills in more recent literature. Conceptual skills are the mental ability to coordinate and integrate all of an organisation's activities, especially in the long-term decisions affecting the organisation (Appleby, 1991: 25-26).

Cronje*, et al.* (2001: 106) added diagnostic and analytical skills to the existing three, and qualified this inclusion by stating that different personal skills are required at different levels of management. Katz (Kroon, 1995: 17) agrees, by stating that the importance of these skills depends on the manager's rank or level in the organisation. The levels of management are top, middle, and lower management. Top management is responsible for the management of the organisation as a whole, which implies the strategic management of the organisation and comprises the development of a mission, strategy and goals, drafting a strategic plan, developing an organisation structure, the transfer and execution of important decisions, and control by means of various methods. Middle management is responsible for the tactical management that implies that operational plans and programmes be drawn up and that business and functional policies are applied (Kroon, 1995: 19). According to Rautenbach (1992) these are the people that will most likely replace top management, and according to Stumpke (1996) should attempt to create harmony, effectiveness, and efficiency in the organisation as a whole (Ketel, 2005: 47). Lower management or first-line management as indicated by Kroon (1995: 19) is responsible for the operational management of smaller sections or departments by means of operational plans and programmes that seek to achieve the objectives set by middle management.

Figure 2.4 indicates the importance of the different skills at the various levels of management. From the figure, it is clear that technical and human skills are more important at a lower level where more manager-subordinate interactions occur (Appleby, 1991: 25-26). This is the level of management, within which the sample of this study will fall. Cronje*, et al.* (2001: 105) support the idea of needing different skills and identified twelve functional types, of which only general management is a universal one.

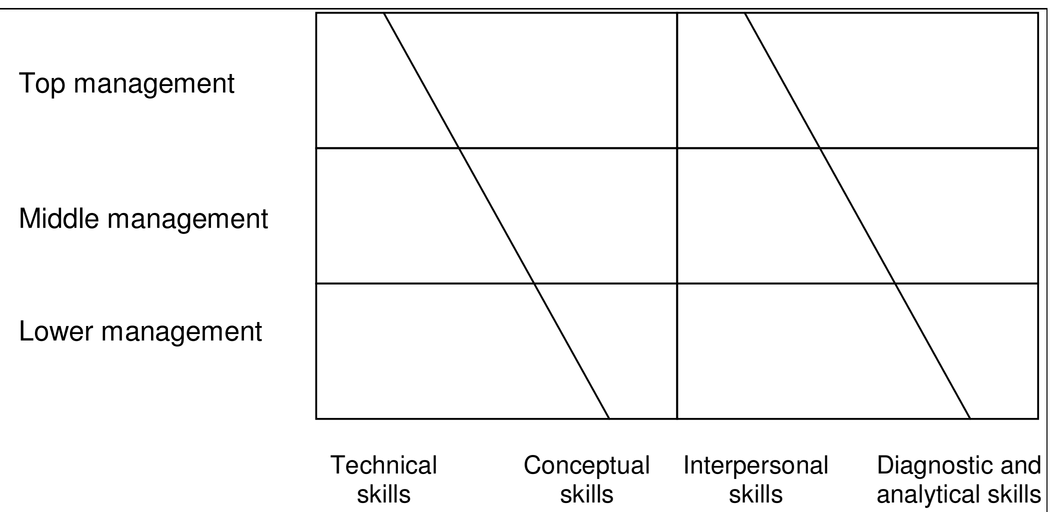

Figure 2.4: The skills needed at various managerial levels
Source: Cronje*, et al.*, 2001: 107.

Although management skills are an important component of competencies as already defined, it is still only a component. Skills and knowledge on its own are not enough to be efficient, and therefore the focus should rather be on the specific competencies required by management. Various authors highlight the specific management competencies required by managers but mention will be made of only three studies. These studies identify general competencies, competencies associated with the roles of managers and competencies associated with the functions of managers. The quoted authors are Mitrani, *et al.* (1990), Quinn*, et al.* (1990), and May (1999). Mitrani*, et al.* (1990: 42-43) identified the following competencies as being important to future managers:

- Flexibility to change managerial structures and processes when necessary to implement changed strategies.
- Change implementation to communicate the organisation's need for change to co-workers; and "change management" skills, such as communication, training and group process facilitation, needed to implement change in their work groups.
- Interpersonal understanding to understand and value the inputs of many different types of people.
- Empowering by sharing information, soliciting co-workers ideas, fostering employee development, delegating meaningful responsibility, providing coaching feedback, expressing positive expectations of subordinates (irrespective of differences) and rewarding performance improvement – all of these make employees feel more capable and motivated to assume greater responsibility.
- Team facilitation to get diverse groups of people to work together effectively to achieve a common goal, e.g. establishing goal and role clarity, giving everyone the chance to participate, resolving conflicts.
- Portability – to adapt rapidly and function effectively in foreign environments – a manager must be "portable" to a position anywhere in the world.

Quinn and Rohrbaugh (1990: 15) determined that there are four management models that are competing or complementary elements in a larger model of management. The four models are: rational goal, internal process, human relations and an open systems model. The result of combining these models is the competing values framework as illustrated in Figure 2.5. The framework illustrates the competing roles that managers have to play, and then indicates 24 embedded competencies that are required. This competing value framework of Quinn, *et al.* (1990: 14) is considered to be comprehensive in defining required management competencies by addressing the competencies required within the different roles played by managers. According to the authors, when people take on a position of leadership, they should operate effectively in all areas of the competing value framework by acquiring the behavioural competencies.

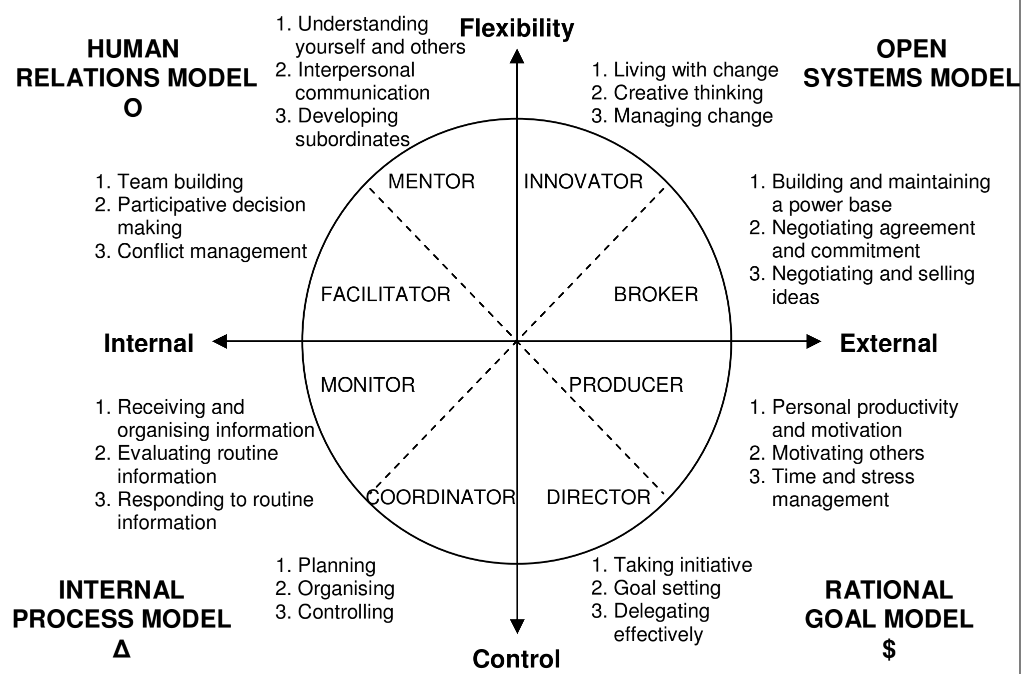

Figure 2.5: The competencies and the leadership roles in the competing values framework

Source: Quinn, R.E., *et al.*, 1990: 15.

A more recent study by May (1999: 339), identified some common management competencies relevant to all managers with responsibility for organisational resources and it is reflected in Table 2.3. May (1999: 339), similar to Boyatzis (1982: 236), and authors such as Dror, Edwards and Gregory, and Holmes and Joyce, linked competencies to the various generic management functions. However, the functions identified by May, as illustrated in Table 2.3, are different to the ones illustrated in Figure 2.2. The functions, in Table 2.3 are those of managing people, managing operations, financial management, and managing information.

By defining management as a process, defining what a manager is, and identifying their required functions, roles and skills, various management competencies have been identified by the studies of Mitrani, *et al.*, Quinn, *et al.*, and May. These competencies, however, are still general in nature and should be scrutinised to identify the entry-level competencies that are relevant to this research.

Table 2.3: Common Management Competencies

Operations management	People management	Financial management	Information management
Managing time effectively • Control of time scheduling • Project control **Planning and decision-making** • Controlling planning • Option evaluation • Evaluation plan performance **Managing change** • Identifying improvement opportunities • Formulating change objectives • Monitoring and evaluating change **Quality management** • Quality measurement • Conditions monitoring and diagnostics **Systems control**	**Team leadership** • Leadership styles • Structured teams • Delegation • Counselling • Meeting participation **Performance measurement** • Assessing competencies • Job design and review • Target setting and review • Assessing competencies • Motivating staff **Influencing others** • Planning process management • Negotiating **Legal issues of employment** • Health and safety • Recruitment and employment conditions • Industrial relations	**Financial control** • Cost monitoring • Financial statement analysis • Results presentation • Financial systems awareness **Financial planning** • Investment appraisal • Systems development • Managing outsourcing	**Communications** • Presenting information • Selling ideas • Behaviour interpretation **Marketing** • STEP and PESTE • Marketing strategies **Behavioural competencies** • Entrepreneurial • Creative thinking • Management synergy • Logical thinking • Analytical ability

Source: May, 1999: 339

As referred to by Ketel (2005: 52), authors such as Cronje (1994: 67), and MacMillan and Venkataraman (1995: 23) linked Boyatzis' competency clusters to specific levels of management. For the entry-level managers the following competency clusters and competencies apply. From the goal and action management cluster the diagnostic use of concepts, efficiency orientation and proactivity is important. Developing others, spontaneity and use of unilateral power are important competencies of the directing subordinate cluster. Other competencies required at this level of management are accurate self-assessment, self-control, stamina and adaptability, and the use of socialised power. As stated, these are the entry-level competencies for managers in general and will form the base from which public sector management competencies are identified in the next section. However, there is no indication of financial literacy being a general management competency.

2.4 PUBLIC SECTOR MANAGEMENT COMPETENCIES

The management competencies identified in the previous section are the competencies for entry-level managers in a general sense. The question now is whether general competencies are also applicable to public sector managers, such as the military officer, or if there are different competencies required. In order to identify the public management competencies, the point of departure will be to identify the tasks of the public manager based on the perceived principles of good public management. Then, a comparison will be made between the private and public sectors, and the relevant competencies of the public manager will be identified by applying the competency definition of Draginidis and Mentzas (2006: 53). The aim remains the determination of financial literacy as a public management competency.

The competencies of public managers should be derived from good public management principles. According to Lawton (1998: 44), principles are guides to action and are built upon values. Principles are also important from a military perspective where they guide the actions and bearing of the soldier, and although each public management environment has its own principles, brief mention will be made of the principles identified by the Nolan Committee (Lawton, 1998: 46) and the Open University Business School in the UK (Lawton, 1998: 47). The Nolan Committee recommended seven principles to govern public life. These principles are:

- Selflessness
- Integrity

- Objectivity
- Accountability
- Openness
- Honesty
- Leadership

The Open University Business School (OUBS) (Lawton, 1998: 47) conducted a study with the input of 45 MBA students who are employed in middle and senior management in the public sector in the UK. As part of the research, the students had to indicate what they thought *should be* the principles for managing public services, and what they think really *are* the principles. The results appear in Table 2.4. As can be seen in the table, there is a significant difference between what should be and what the principles for managing public services actually are. Therefore, it is not that simple to derive competencies from the principles alone. Various other considerations such as the ethos of public management, actual activities, and the time spent on the activities will influence the defining of public management competencies.

Authors such as Lawton and Ives say that the ethos of public management has to make provision for the new professionalism. Lawton (1998: 65) continues by saying that the old virtues of the traditional public service ethos should be recognized, but should make provision for the values associated with the new ways of working and the new tasks. This supports the reference to Redman and Mathews, as quoted by Ketel (2005: 55), to "the future 'rounded' public sector manager that will need many of the skills and attributes associated with the private sector manager".

The new ways of working within the public sector should incorporate the real time spend on activities. Although managers might say that they plan, control, organise and coordinate, their activities might not substantiate this. In a study done by Conway (Lawton, 1998: 69) it was found that operational managers within the UK social services spend 23% of their time exchanging information, 20% handling papers, 22% socializing or politicking, and 18% motivating or reinforcing.

Hales, in 1986, argued that evidence indicates that the manager as strategist, planner and thinker is a myth, and Lawton and Rose (1994: 198) support this statement by saying that variation and contingency are key themes. Lawton and

Rose (1994: 198) argue that managerial work should be seen as contingent upon function, level, type, structure, and size of the organisation, and the environment.

Table 2.4: OUBS Research on Public Management Principles in the UK

What do you think **should** be the key principles for managing the public services?		What do you think **are** the key principles for managing the public services?	
Position	Respondents who gave it a ranking (%)	Position	Respondents who gave it a ranking (%)
1 Integrity	100	1 Meeting targets	85
2 Accountability	100	2 Obeying rules	70
3 Responding to client/customer	85	3 Obeying superiors	55
4 Openness	85	4 Political awareness	90
5 Committed to public service ethos	80	5 Competitiveness	52
6 Objectivity	77	6 Accountability	95
7 Loyalty	50	7 Responding to client/customer	70
8 Honesty	88	8 Integrity	68
9 Leadership	73	9 Opportunism	72
10 Selflessness	20	10 Honesty	40
11 Meeting targets	55	11 Openness	28
12 Thoroughness	62	12 Working hard	62
13 Exercising initiative	72	13 Committed to public service ethos	47
14 Working hard	50	14 Leadership	65
15 Opportunism	17	15 Objectivity	55
16 Competitiveness	17	16 Loyalty	40
17 Loyalty	50	17 Thoroughness	35
18 Obeying rules	25	18 Selflessness	33
19 Obeying superiors	0	19 Exercising initiative	22

Source: Lawton, 1998: 47

Principles, however, are only guides to action, and in order to move along to the real issue of public management competencies the public management tasks should be identified. According to Cloete (Thornhill & Hanekom, 1995: 21), the tasks of the public manager are the enabling function, the functional activities, and the auxiliary functions as illustrated in Table 2.5. The amount of attention devoted to each of these functions depends on the hierarchy and the level of employment. From the perspective of this study it could be assumed that the lower level public manager, or young officer, will spend more time on the functional and auxiliary functions, but when promoted should be capable in the enabling functions.

Table 2.5: Tasks of the Public Manager

1. **Enabling functions:** • policy making • organising • financing • staffing • the development of work procedure and • the exercising of control
2. **The functional activities distinctive to the public institution performing the specific service, for example:** • defence
3. **The auxiliary functions which can be utilized in the** • execution of the generic administrative functions and • functional activities, for example • systems analysis and • research

Source: Thornhill and Hanekom, 1995: 21

The tasks as reflected in Table 2.5 could be argued to be very similar to what managers do in the private environment, and therefore it would be natural to presume private management competencies to be public management competencies and thus easily transferable. This suggestion, however, has been subjected to critical debate as mentioned by Redman and Mathews (Ketel, 2005: 55). Stewart and Ranson, among others, are of the opinion that transferability is not possible due to the difference between the sectors and therefore insisted that general models of management cannot be applied to the public sector (Lawton & Rose, 1994: 195-197). They used a framework, as illustrated in Table 2.6, to indicate the differences that exist between the two sectors. From this table it is clear that differences exist with regard to purpose and conditions, but not necessarily tasks. Van der Merwe agrees that there is a difference and bases the difference on a complex public management environment and a complicated public performance assessment process. Difficulty in assessing the results of policies, activities, and programmes complicate performance assessment (Ketel, 2005: 56).

Table 2.6: Management Comparison between Public and Private Sectors

Public Sector	Private Sector
Purpose (what are their goals)	
• multiple and fuzzy objectives • arena for the pursuit of collective values • expressed through collective choice • need to serve clients and citizens, not just customers • driven by the needs and availability of resources rather than the market	• promote individual choice in the market • pursue profit • promote competition • increase market share • clear objectives
Conditions (the context in which they carry out their operations)	
• multiple stakeholders • constraint by politics and the law • public accountability • short-termism of politicians • funds raised through taxation • complex and debated performance indicators • complexity of policy implementation	• through competition • operate in markets • free from constraints • accountable to shareholders • secrecy in terms of business confidentiality • can take long-term view on investments • resourced from operational returns and borrowing • raise capital • measurable outputs in terms of product or service.
Tasks (what they do)	
• pursue collective goals • bound by regulations • balance competing interests rather than pursue one interest • operate under the gaze of the public eye • little scope for negotiation of inputs – determined by politicians • cannot measure outcomes • not involved in policy formulation	• managers have the freedom to manage, to take risks • flexibility and discretion to take decisions • responsiveness to the customer • driven by clear goals and responsibilities

Source: Lawton & Rose, 1994: 195-197

Ketel (2005: 57-58) made use of the Boyatzis' competency framework to study the difference and discovered that the differentiation between the private and public sector on issues such as "goal" and "action" management, and "human resource management" is insignificant. However, when referring to the remaining areas of competence such as "leadership", "directing subordinates" and "focusing on other clusters" it became significant.

Table 2.7: Key Roles and Associated Competencies

Manage operations 1. Maintain and improve service and product operations. 2. Contribute to the implementation of change in services, products and systems.
Manage finance 3. Recommend, monitor and control the use of resources.
Manage people 4. Contribute to the recruitment and selection of personnel. 5. Develop teams, individuals and self to enhance performance. 6. Plan, allocate and evaluate work carried out by teams, individuals and self. 7. Create, maintain and enhance effective working relationships.
Manage information 8. Seek, evaluate and organise information for action. 9. Exchange information to solve problems and make decisions.

Source: Lawton and Rose, 1994: 194.

The differences between the private and public sector are significant and therefore the competencies are not transferable. However, some practices from the private sector should be transferred, such as public managers becoming more entrepreneurial and market-minded (Ketel, 2005: 55). This insight necessitated the UK in the early nineties to develop the Management Charter Initiative (MCI), which identified the key roles of public service management and the competencies associated with them as illustrated in Table 2.7. This list of competencies, however, does not represent the full spectrum of public management competencies and may be dated, and therefore needs to be supported by further exploration. In order to identify as many of the required competencies as possible today, a brief overview of the last three decades, and an exploration of international emphasis on competencies follows.

Authors such as Stewart (1986), Robbins and De Cenzo (1998), and Ketel (2005) highlight the development of competencies within the last three decades. During the eighties, Stewart (Lawton & Rose, 1994:199) defined competencies as being an awareness of managers to:

- political sensitivity, awareness and understanding;
- the management of public pressure and protest;
- fulfilling the conditions of public accountability;
- marketing for equity and other purposes;
- strategic management;
- the management of rationing;
- assessing a multi-faceted performance.

During the nineties Robbins and De Cenzo (Cheminais, Bayat, van der Waldt, & Fox, 1998: 15) identified technical skills, interpersonal skills, conceptual skills and political skills as required public management competencies. When these are compared to Table 2.7 it can be seen that there has been a shift in focus from the roles that the public manager has to play to the skills that are required. Robbins and De Cenzo focus on the abilities and skills that the public manager brings to the work environment and not only an awareness as does Stewart's outcomes approach. The skills are qualified as follows:

- Technical skills refer to the ability to apply specialised knowledge or expertise in a given work situation or profession.
- Interpersonal skills are the skills required to work with, understand, and motivate other people, both individually and in groups.
- Conceptual skills refer to the mental ability to analyse and diagnose complex situations. This skill will allow managers to operate within a systems environment.
- Political skill refers the manager's ability to acquire and exercise power, to establish and maintain a network of contacts, and to influence the various role players in the management domain.

Ultimately the summary of competencies as stated and explained by Virtanen and quoted by Ketel (2005: 61-63) will serve as the most recent example of required public management competencies. Virtanen provided a framework of five competency areas to explain the competencies of "new" public managers, and these will serve as the basis for identifying specific competencies. These competencies closely relate to those proposed by Robbins and de Cenzo and are:

- task competence;
- professional competence in subject area;
- professional competence in administration;
- political competence;
- ethical competence.

Task competence as explained by Ketel (2005: 61-62) is the ability to perform given the means and the goals. The value competence is the motivation (why?), and the instrumental competence is the ability (how?). Professional competence is twofold. Competence is firstly required within either a substantive line function or a specific staff function. The value competence is the control of the policy object, and the instrumental competence is the expertise of the policy object. Secondly, professional competence is required within the field of administration. Once again, the value competence is control of the policy programme, and the instrumental competence the expertise of co-operation.

Political competencies are the power as previously explained by Robbins and De Cenzo, but they also have to do with the values. The ideology and interests of the public manager set the value competencies, and the instrumental competence is possession of power. Ethical competence is the compliance to prevailing moral values and norms. The value competence is morality and the instrumental competence is reasoning in terms of ethics (Ketel, 2005: 62-63).

A most comprehensive list of competencies is presented by Ketel as identified by Virtanen in 2000, and is illustrated in Table 2.8. For the purpose of this study, the significant competencies are the competencies with a financial connotation, which are entrepreneurial, resource allocator and financial management. It may seem, however, that these competencies are theoretical in nature and therefore it is prudent to identify the public management competencies and their prevalence internationally.

Fortunately, research by Bhatta (2001) analysed the competencies as identified in five countries: USA, New Zealand, Australia, the Netherlands and the UK. Although South Africa is not included, the findings in Table 2.9 suggest that the two competencies prevalent in all countries investigated are “leadership” and “results orientation”.

Table 2.8: Competencies for Public Sector Managers

1. Conceptualisation 2. Managing group process 3. Concern with impact 4. Diagnostic use of concepts 5. Efficiency orientation 6. Pro-activity 7. Self-confidence 8. Perceptual objectivity 9. Stamina and adaptability 10. Building and maintaining a power base 11. Presenting ideas 12. Figurehead 13. Leader – formal authority 14. Liaison with external and internal contracts 15. Monitor 16. Disseminator of information 17. Spokesperson externally 18. Entrepreneurial 19. Disturbance handler 20. Resource allocator 21. Negotiator – conflict resolver 22. Use analytical techniques	23. Interpersonal skills 24. Understand whole organisation as a system 25. Vision setter – basic purpose and direction 26. Communicate where organisation will be in 20 years 27. Create values and trust to achieve vision 28. Study emerging trends 29. Transfer intellectual output to service 30. Motivator 31. Emphasise organisation’s values 32. Create sense of excitement 33. Analyser – evaluate projects 34. Integrate conflicting perspectives 35. Questions staff 36. Task master – contribute knowledge 37. Focus on results	38. Influence decisions at lower levels 39. Make trade decisions and allocate resources 40. Building contextual competencies 41. Leadership 42. Human resource management 43. Promote creativity, learning & innovation 44. Skills of remote management 45. Use of information technology as a transformative force 46. Managing complexity 47. Communication 48. Decision-making 49. Financial management 50. Management skills 51. Technical background & experience 52. Credibility 53. Autonomy 54. Openness/trust 55. Empathy and understanding

Source: Ketel, 2005: 60-61

This section used the principles for good public management to identify the tasks of public management for comparison with management in the private sector. Once compared, significant differences appeared that restrict the transferability of general management competencies to public management. The process of identifying public management competencies explored competency development of the last three decades and accepted the research by Ketel that identified Virtanen's listed competencies as the most comprehensive indication of what is required in the public sector. Finally, a brief international comparison indicated the prevalence of public management competencies in practice. From this exploration, it is clear that financial literacy as a concept is not mentioned although it could be argued that it is implied as a public management competency.

Table 2.9: Comparison of Competencies across Countries

	EMPHASIS ON COMPETENCY					
COMPETENCY	**Degree of prevalence**	USA.	New Zealand	Australia	Dutch	UK
Team orientation	78%	▲▲▲				
Communication	65%	▲▲▲	▲▲▲	▲▲▲	▲▲▲	
Customer focus	65%	▲▲▲				
People management	58%	▲	▲▲▲	▲▲		
Results orientation	58%	▲▲▲	▲▲▲	▲▲▲	▲▲	▲▲▲
Problem solving	55%	▲▲▲		▲▲	▲▲▲	
Planning & organising	48%	▲		▲▲	▲▲▲	
Leadership	43%	▲▲	▲▲	▲▲	▲▲	▲▲▲
Business awareness	38%	▲▲▲	▲▲		▲▲	
Decision-making	35%	▲▲▲	▲	▲		
Technical skills	35%	▲▲▲	▲▲	▲▲		

▲ Scant emphasis

▲▲ Secondary (implied) emphasis

▲▲▲ Primary (specified) emphasis

Source: Ketel, 2005: 59.

However, the case study earmarked as an assessment of the validity and reliability of the financial literacy measurement instrument will focus on the young officer, and the competencies required for such a posting. Therefore, the following section will aim to define the profile of a young officer studying at the SAMA. This profile should indicate the competencies required by the SANDF as well as SU. For the research to proceed beyond this point financial literacy should be identified at least as a competency of the young officer.

2.5 SANDF OFFICER PROFILE

Defining the profile of an officer is not only important for this research, but should also be so for the human resource management section of the SANDF. Competency management can be used to define behavioural attributes required to perform a job and thereafter to measure them for control purposes. Competency management in the words of Page, Hood and Lodge (2005: 854) has moved away from the narrow and unique definition of requirements for an individual job in a job specification and moved towards the use of broad educational, career, background and character traits to focus on defining behavioural attributes.

Competencies can also be used to compare to standards, and if proven to be sub-standard they can be addressed in the form of training and education. Setting standards by which competencies are measured should, however, be approached with care. As indicated by Jubb and Robotham, in Boak and Coolican, (2001: 217-218) not all jobs are generic in nature and not all are equally important. Competencies are associated with success, but what is a successful officer, and what exactly are the competencies required by an officer?

Although the competencies: entrepreneurial, resource allocator and financial management have been indicated as public management competency requirements, it is as yet not clear if the officer is just another public employee and therefore should illustrate those competencies. The point of departure will be to define the term officer, to define the officer corps, and then to complete the profile of the SANDF Officer. The idea is to get an understanding of who and what the military officer is, and then identify the required competencies for officers. The literature on the South African officer is limited and consequently international authors and relatively old literature will be included in the discussion.

The SA Defence Act (42 of 2002) defines an officer in section six as "… in relation to the Defence Force, means a person on whom permanent or temporary commission has been conferred by or under this Act, and who has been appointed to the rank of officer". The commission appointment grants authority over the control of juniors, but compliance to the orders of seniors. Although the commission seems to be quite generic, the officer is a unique government employee who operates within an own code, the influence of military ethics, a code of conduct, regulation and policies, a post requirement and a student requirement. This makes the officer part of a special group of people, that of the officer corps.

"The officer corps has always been a vital component of armed forces: it is their leadership, it possesses and imparts professional expertise, it determines the military mind set, and it upholds and revises the military ethic" according to Caforio (2003: 255). This quote highlights the additional requirement of professionalism and a military ethic.

Vuono (1990: 3) of the US Army defined professionalism in the US Army as a leader who is expert in the profession of arms, is responsible for soldiers and units, is committed to the defence of the nation and is bound by a strong ethical framework. The qualities of professionalism are: competence, responsibility and commitment (Vuono, 1990: 3). Sendall (1995: 60) added another dimension to military professionalism by saying that it revolves around non-tangible, higher values that cannot be interpreted in black and white. Supplementary to these values, the universal principles of military professionalism are moulded or enhanced by the values, principles, and character of the political system within a country (SAMA, 2007: 3).

Ethics, as defined by Sendall (1995: 60), are: "… a higher order, common pattern or morals that form an ethical consciousness, similar to the ethical code that a medical practitioner observes". Military ethics according to Gabriel as quoted by Sendall (1995: 60) "… is the observance of those moral obligations ('oughts') and precepts that are appropriate to a person's role within the military". However, not everyone agrees that these obligations necessarily deviate from the values that an individual acquired in the normal socialization. Linderman (1990: 26), a Military History Professor, goes as far as to say that there is no experience of military culture or a military island within society on which values other than of society at large pertain. Therefore, there is no difference between US civilian culture and US military culture, and although the officer corps has sought sociological separateness, it still does interact with all the other social actors (Caforio, 2003: 255).

Sendall (1995: 60) elaborates on military ethics in quoting Smith when saying that "[a] man may adopt a moral code, as a result of his role in society that must subordinate itself to a higher ethic when these roles come into conflict. It is the relationship between this higher ethic and the values tied to his specific role in society that guides man's moral behaviour … when a man joins a special social order … he voluntarily adopts the unique obligations of his new social order. He does so while owing allegiance to a higher set of values. Validation of his new social order is now determined by how closely he emulates, or has internalized, these higher values … we must recognize a soldier's allegiance to a more noble purpose – preservation of the dignity of man". He also refers to Gabriel and Savage who stated that "… one is sustained within the community by strict fidelity to such values". The Code of Ethics applicable to the military profession includes the following values as identified by Sendall (1995: 62-63), and are as follows:

- Courage and the preservation of human dignity.
- Respect for the rule of law.
- Obedience and discipline.
- The primacy of the political system and upholding the Constitution and democracy.
- Loyalty, sacrifice and duty.

Because of the professionalism, ethics and the values that determine the code of ethics it can be argued that there is a uniqueness to the military profession and the military officer per se. Conversely, if there was no institutional uniqueness the implication would be that officer competencies are exactly the same as for public managers and that there is no evidence of financial literacy being a competency. However, because of the uniqueness, the profile of the officer should be further developed and the specific competencies for young officers should be defined.

Although the officer is shaped by values and ethics, the commission appointment requires authority over the control of juniors and compliance to the orders of seniors. This implies a leadership role, which is one of the core functions of management. This leadership role will shape the discussion for identifying the competencies of a young officer. The military leadership role according to Rendina (1990: 70) has three requirements. Firstly, the leader should be technically and tactically proficient in army weaponry and doctrine. Secondly, he must be prepared to exercise leadership of own forces and command and control of support services. The third requirement is for an officer to be able to interpret and anticipate the enemy.

Although the officer is granted the authority to control juniors, those juniors expect competent leadership. Competent military leadership is best explained by the US Army Leadership Field Manual (2004:2), hereafter referred to as FM22-100. According to this manual competent leadership depends on what the leader must *BE*, *KNOW* and *DO*.

What a leader must *BE* reflects the internal qualities such as values and attributes that shape the character, and character is the basic quality of the leader (FM22-100, 2004: 3). These values in the SA context were identified by Sendall and have already been discussed as part of defining officership. The skills are the things you KNOW how to do. These skills will range from interpersonal to tactical skills. Combining the character and the skills will lead to the actions what the leader will *DO*. The three attributes of leadership fit nicely within our working definition of competency being defined as a combination of tacit and explicit knowledge (KNOW), behaviour (BE) and skills (KNOW), which gives someone the potential (BE) for effectiveness in task performance (DO). Therefore, this classification will also suit the South African perspective and thus *BE, KNOW, DO* will now form the basis for identifying the required competencies of a young officer. These attributes will be defined within the American context and then be substantiated from a South African perspective in the following sections.

The character of any person is formed by values and attributes and are the BE of leadership. The values of importance are: loyalty, duty, respect, selfless service, honour, integrity, and personal courage (FM22-100, 2004: 4). The attributes that shape the character are: mental, physical, and emotional. Mental attributes include will, self-discipline, initiative, judgment, self-confidence, intelligence, and cultural awareness (FM22-100, 2004: 31). Physical attributes refer to health fitness, physical fitness, and military and professional bearing (FM22-100, 2004: 37). Emotional attributes are self-control, balance, and stability (FM22-100, 2004: 38).

The *BE* in a South African Military context is guided by publications such as the Defence Act (44 of 1957), *The Officer – His Men and His Job,* and *The Officer as Gentleman*. The mentioned publications cover issues on professionalism, military standards and behaviour that are required of an officer. These issues, however, are not included in the proposed competency matrix as developed by the SANDF because it is assumed to be in place for all officers. Its importance, however, is undeniable and should be addressed in this discussion.

Professionalism is an important part of the definition of officership and also supports the concept to *BE.* Within the South African context the White Paper on National Defence (RSA, 1996: 13) highlighted the importance of professionalism in declaring it to be detrimental to stable civil-military relations. The challenge, however, is to identify an approach to military professionalism that is consistent with the Constitution, democracy and international standards. The identified features of this professionalism at a political, ethical and organisational level are:

- Acceptance by military personnel of the principle of civil supremacy over the armed forces, and adherence to this principle.
- The maintenance of technical, managerial, and organisational skills and resources which enable the armed forces to perform their primary and secondary functions efficiently and effectively.
- Strict adherence to the Constitution, national legislation and international law and treaties.
- Respect for the democratic political process, human rights and cultural diversity.
- The operation of the Defence Force according to established policies, procedures and rules in times of war and peace.
- A commitment to public service, chiefly in defence of the state and its citizens.
- Non-partisanship in relation to party politics.
- The building of a South African military ethic based on international standards of officership, loyalty and pride in the organisation. This will serve as a basic unifying force which transcends cultural, racial and other potentially divisive factors.

During the negotiation phase that pre-empted the new SANDF on 27 April 1994, one of the core force design criteria was the retention of military standards. The concept military standards has two dimensions, namely military technical standards and military normative standards (Sendall, 1995: 58). The importance of normative standards is further emphasized with the reference to unacceptable behaviour by the SA Defence Act 44 (1957: 169). It states that "any officer who behaves in a scandalous manner unbecoming the character of an officer and a gentleman shall be guilty of an offence and shall on conviction be cashiered". This supports the notion that officers have a character of their own and that there is a military way of doing things. Evidence of the normative standard that applies to officership can be traced back as early as 1940 in the then Union of South Africa. The earliest publication was *The Officer – His Men and His Job* and was issued by Defence Headquarters, Pretoria, of the Union of South Africa. This document was followed by *The Officer as Gentleman*, of the SAMA, in 1970 with the latest publication in 1979. Both these publications described the character of an officer and will be discussed to create a profile of the ideal SANDF officer.

According to *The Officer – His Men and His Job* (1940: 5-8) the sole task of an officer is to "give of their best in battle". The purpose of this specific document is seen as "solely to enable an officer to see that his men are fit and competent to play their part on the battlefield" and not for "pampering the soldier". All told, a premium was attached to the happiness of the soldier. The authors stressed that training will only be successful if there is a degree of receptivity which is influenced by personal factors of the individual. Knowing your men should be the focus of the officer who is responsible for his men 24 hours each and every day. Reference is made to ancient times when it was said that one of the great commanders told his junior officers that their first duty was to see that their men were happy and that the rest would follow. The authors then proceeds by saying that "the soldier of today may have been invested with weapons the ancients never knew; but he remains a man – and not merely automation rigged out in battle dress".

Although the first priority of the officer is to know his men, it is also suggested that the officer requires a military background. This is seen as a quality of the mind that cannot be acquired if the individual sees himself as a civilian. To know the army was perceived as a condition of spiritual awareness of a great comradeship that could come only as a result of intimacy and experience. The officer was expected to think in terms of the army and improvise (The Officer – His Men and His Job, 1940: 5-8).

Further duties of the officer are to stimulate the men to think, to provide all possible information, and to discipline. Power of command was seen as largely a matter of personality. It was believed that if an officer applied these precepts a subtle bond would form that could lead to high morale, the first of soldierly qualities. Officership is regarded in such esteem that it is suggested that if anything goes wrong, be it at platoon level or high formation level, the fault will be with the officers and not the men. It is said that the officer worthy of his rank will never blame his men for command deficiencies (1940: 8-11).

The Officer as Gentleman (MA, 1979: iii-v) aims to introduce military traditions, responsibility, and be a guide to correct military conduct, ethics, and code of conduct. It addresses issues such as dress prescriptions for various occasions, military courtesy and customs, social etiquette, etiquette in military clubs (mess), the officer and his subordinates and other issues of military importance. This training manual is prescribed for officer training. As the title suggests, this document is aimed at men, and has references to Christianity, and so is not as applicable within the SANDF of today. However, there are still various guidelines that are relevant to officership and brief reference will be made to them.

According to the *Officer as Gentleman* (MA, 1979: 1-1) officership is an honourable occupation, practically second to none. All officers receive a deed of commission signed by the State President. That signature endorses the appointment and charges him to serve his country as an officer, with loyalty, courage, dignity and honour, to discharge his duties and responsibilities with zeal and diligence and to set a good example to those placed under his control. According to the SANDF service guide for newcomers (SANDF, 1996: 4-4 - 4-5) officers should create the conditions for other ranks to do the job in. Officers should focus on unit effectiveness and unit readiness and pay particular attention to standards of performance, training, and professional development of officers.

A successful officer according to the *Officer as Gentleman* (MA, 1979: 5) is someone that has been a good Christian, a good citizen, has been a good husband and father to his family and a good friend to his comrades. He has also taken all things in his stride and completed them creditably; he has set a good example to his subordinates and has had the courage of his convictions to do what he believed to be right. The officers' actions are determined by tradition as illustrated in the publication (MA, 1979:1-3) as general guidelines:

- Tradition of public service. The soldier is a public servant who goes where he is ordered and performs the tasks required by his duty.
- Tradition of achieving the mission. Achieving the mission is recognized as the primary responsibility of the military leader and therefore tasks are undertaken without question and completed to the best of the officer's ability within the time set.

- Tradition of taking good care of subordinates. This is second only to achieving the mission and should be directed at the welfare of subordinates without accepting a less-than-satisfactory standard.
- Tradition of leadership. The officer is trained to lead, to accept the leadership of superiors, to develop teamwork, and be a productive member of teams himself.
- Tradition of preparedness. The officer should be prepared at any level, he should be flexible, and show an increasing capacity for undertaking and accomplishing new ventures.
- Tradition of dependability. The officer's devotion and integrity must be beyond reproach. He should be trustworthy, dependable, and his word taken for granted.
- Tradition of unselfishness. The needs of his unit and the defence force are put before his own without hesitation.
- Tradition of discipline. The officer should set an example by both word and deed.
- Tradition of loyalty. A good officer is loyal to his men, fellow officers, organisation, his service, and to his Nation which he has sworn to protect. A disloyal officer should have the courage of conviction to voluntarily withdraw from the organisation.
- Tradition of cooperation. Between officers of different arms of service and officers in general.
- Tradition of a gentleman. A gentleman is defined as a man of stature, a person who knows how to conduct himself in any situation. An officer proves this in his moral standards, his conduct, appearance, manners and habits, as well as the professional standards he sets in the performance of his duties. The officers' corps accepts every officer as a gentleman until the contrary is proved.

The guide (MA, 1979: 3-5) also makes provision for those things that should be avoided by officers at all cost, and includes a few references to financial issues relevant to this research. These are as follows:

- Fraud – Deceit with regard to goods/money is unforgivable. The abuse of an official position to defraud is a violation of the public trust and a failure to the highest authority, his organisation and fellow officers.
- Other acts for personal gain – Theft and other petty offences such as accepting gifts and favours to act in a certain way are unacceptable.

- Bad cheques – Tendering cheques with insufficient funding causes irreparable harm to the trust placed in the officers' corps.
- Failure to pay accounts – Young officers should guard against getting into debt. Bad debt is disrupting to the individual's personal and family life, and the credit worthiness of fellow officers. Arrangements should be made with creditors.
- Dishonesty in any form – Cheating is the hallmark of a weakling who should not be an officer.

The SANDF also has requirements set for the relationship between officers and subordinates. The guideline of what is expected of an officer by his men indicates thirteen requirements (MA, 1979: 66-67). One of these requirements is that the officer takes a personal interest in his soldiers as individuals. This implies that the officer should take notice of personal problems such as financial problems that will negatively influence the soldier's motivation.

In summary the author is of the opinion that the *BE* part of being a leader is comprehensive in nature, it is traditionalist and important enough to be included in the competency make-up of the officer. Nevertheless, the military profession and especially leadership is not only about the *BE*. Leadership also entails the *KNOW* and *DO.*

Skills shape the *KNOW* of leadership. The skills required by effective officers based on the US Army Leadership Field Manual are interpersonal, conceptual, technical, and tactical (FM22-100, 2004: 4). Interpersonal skills consist of communication, team building, supervising and counselling (FM22-100, 2004: 75). Conceptual skills include competence in handling ideas, thoughts, and concepts. Technical skills are the skills required to know equipment and to operate it (FM22-100, 2004: 84). The tactical skills are the knowledge of doctrine and field craft (FM22-100, 2004: 86).

Within the South African context, with specific reference to the young officer studying at the SAMA, various skills and knowledge are required, and can be developed through training and education. For the purposes of this study, the focus will be on education, specifically at the SAMA, and only brief reference will be made to the training component of officer development. The required educational skills and knowledge can only be identified by including the requirements as set by the different stakeholders. The stakeholders are education and training scholars, the Department of Education, as represented by SU, and the SANDF, as represented by the Chief Joint Training.

Rendina (1990: 65-66) highlighted the importance of education in the military by comparing staff work and troop work from the 1930s. Staff work back then was seen as the way to the top and the more educated you were the more qualified you were for staff work. He stressed the importance of staff work by referring to the demise of the French army because of a lack of proper staff work. At the same time, the Americans profited from not having tunnel vision with regard to new technology and manoeuvre doctrines, by having educated staff workers that tested new technologies and adapted doctrines accordingly.

The right product is suggested to be an educated one, and the aim of education according to Sendall (1995: 60) is to provide intellectual, moral and social tuition and guidance as part of a formal process that leads to the development of character and mental ability. Education, according to the White Paper on National Defence (RSA, 1996: 13-14), is also a means of building and maintaining a high level of professionalism. The importance of education and training in the SANDF is further enhanced by the Constitution demanding that all members of the SANDF "… shall be properly trained in order to comply with international standards of competency". Special education and training was identified to "… facilitate an equal opportunity programme and upgrade the skills of black soldiers, women soldiers and other disadvantaged service personnel".

A quite comprehensive view of the scope of officer education was provided by Neethling (2006: 2-5) in his inaugural address by referring to Van Creveld, Kaufman, and by illustrating the Australian, Canadian and American perspectives. Firstly, Van Crefeld is quoted on the historic perspective of officer education that refers to studying subjects relevant to war. These subjects are national security, strategic studies, military theory and military history. Van Crefeld (2006: 3) added the so-called social sciences to this group including subjects such as *Economics*, *Management*, *Business Administration*, Political Sciences, "Government", and Sociology. Van Crefeld supports these inclusions by stating that the reason for the inability of German officers to stand up to Hitler was the fact that they were never required to study non-military subjects.

Kaufman, of the US Military Academy, (Neethling, 2006: 2) suggested that every student at a military academy should be a security studies student. He qualifies this statement by defining security studies as the range of threats to national survival, stability and sovereignty including environmental hazards, domestic crime, *economic* growth and questions of social justice.

The Australian perspective, as illustrated in Table 2.10, (Neethling, 2006: 3) qualified knowledge by identifying three core areas: the armed forces as an organisation; the physical elements of war; and the purpose for which armed forces are employed.

Table 2.10: Core Educational Requirements

Armed forces	The nature and character of the armed forces and their business. These range from an understanding of war in general to the behaviour of individuals: • Nature of war and strategy: history and politics • Military history: history • Leadership and behavioural studies: sociology/psychology • Standards of individual behaviour: ethics/politics
Physical elements of war	The physical elements of war, including force itself. These range from the physics of weaponry to the physical environment: • Weapons and weapons systems: science/engineering • Management and material: management/logistics • Management of information: information science • Physical environment: geography/engineering
Purpose of the armed forces	The purpose for which armed forces are employed range from an understanding of society and its political system, which set the goals the armed forces are to achieve, and extend to the global context in which policy is conducted: • Society and politics: *economics*/sociology/politics/history • Defence and foreign policy: politics/history/*economics* • Region: politics/history/*economics* • Global political-economic system: politics/history/*economics*

Source: Neethling, 2006: 3

The Canadian perspective (Neethling, 2006: 3) is based on the principle that all Canadian officers should have a degree upon commission. This degree should ensure that officers are trained and educated to master the art of war and therefore should acquire a comprehensive understanding of the political, *economic*, social, cultural and military issues and trends that may affect the security of Canada.

The American perspective, as highlighted by Kaufman (2007), Dean of the Academic Board of the United States Military Academy (USMA), is to address the challenge that the army officer faces of matching people and technology to accomplish diverse missions. It is acknowledged that the plethora of situations cannot be covered in training and therefore the curriculum should educate graduates broadly. This will enable graduates to anticipate and respond effectively to the social, political, *economic*, and technological challenges that may arise in an ever-changing global arena. To achieve this mission the army officer must understand the people they lead, follow, support and serve. To be successful they should understand the context of their social world, what motivates human behaviour, and how to influence such motivations. The USMA also sees the intellectual ethical development of students as being critical.

Esterhuyse (2005: 100) identified four meta-theoretical knowledge clusters as the essence of professional military education. These four knowledge clusters are rooted in an understanding of security; the military bureaucracy and professionalism; the employment of armed force; and the military operating environment. He is also of the opinion that even tactical situations require an understanding of the wider social, cultural, political, and *economic* context. He refers to the nature of strategy as having a Janus-like appearance. On the one hand, it is a professional military world and on the other, it is a bureaucratic world as illustrated in Figure 2.6.

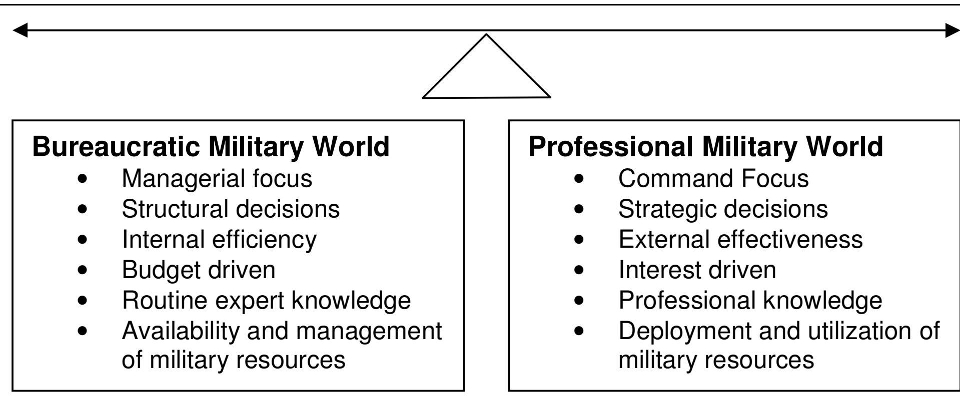

Figure 2.6: The bureaucratic and professional military worlds

Source: Esterhuyse, 2005: 109.

Another perspective on the education of soldiers, specifically at military academies, is offered by Caforio. According to Caforio (2003: 256) these institutes have two primary objectives. The first objective, as supported by most authors, is the endowment of the individual with the functional expertise to function in a profession, and, second is to transform the anticipatory socialization into professional socialization. Professional socialization aims to strengthen and better define existing values acquired in anticipatory socialization that are consonant with the military institution. Military socialization is seen as a higher order notion than training and education, and ties experience, training and education to provide cohesion in the making of officers (SAMA*,* 2007: 5).

Caforio (2003: 256) continues by stating that special procedures are used to induce strong normative compliance, such as community life, discipline, emphasized hierarchical authority, rules for public and private behaviour and a system of sanctions. These actions are also referred to as secondary socialization. A typical example is the guidance provided by publications such as *Officer as Gentlemen* as was discussed in forming the *BE* of leadership.

Table 2.11: Command Leadership and Management

Mission Command (Coping with challenge)	Leadership (Coping with change)	Management (Coping with complexity)
Clarifying superior intent Ensuring subordinate ability to meet remit Timely decision making Success through determination	Setting a direction Aligning people Motivating Mastery of the context	Planning and budgeting Organising and staffing Controlling and problem solving Control of the environment

Source: Young and Dulewicz, 2005: 230.

The *DO* part entails the actions that leaders have to take, and covers aspects such as influencing, operating and improving. The *DO* is also the basis for making comparisons when military management is compared to other forms of management. Some authors compare the functions of military leaders to those of the public and private sectors, and excluding the soldier-specific functions, declare the management functions to be similar. In conclusion, on this matter the opinion as voiced by an appointed task team on curricula development at the SAMA will suffice. The task team declared that there are two fundamental features that distinguish the military profession from other professions. The first is that militaries are instruments of war and should prepare accordingly. The second is that the military should be a servant to society (SAMA*,* 2007: 2-3).

To support the claim of institutional uniqueness of the military profession and specifically military officers, and to focus on what officers do, a model endorsed by the British Royal Navy can be used to explain the linkage between command, leadership, and management as shown in Figure 2.7 (also see Table 2.11). The table indicates a comparison between the key tenets of mission command according to British Defence Doctrine (2002) and leadership and management as proposed by Kotter (1990). From the figure, it is clear that management and leadership, with the exception of military ethos, in the defence environment are very similar to other management environments. In conclusion, it can be said that the military ethos differentiates the military profession from other management professions.

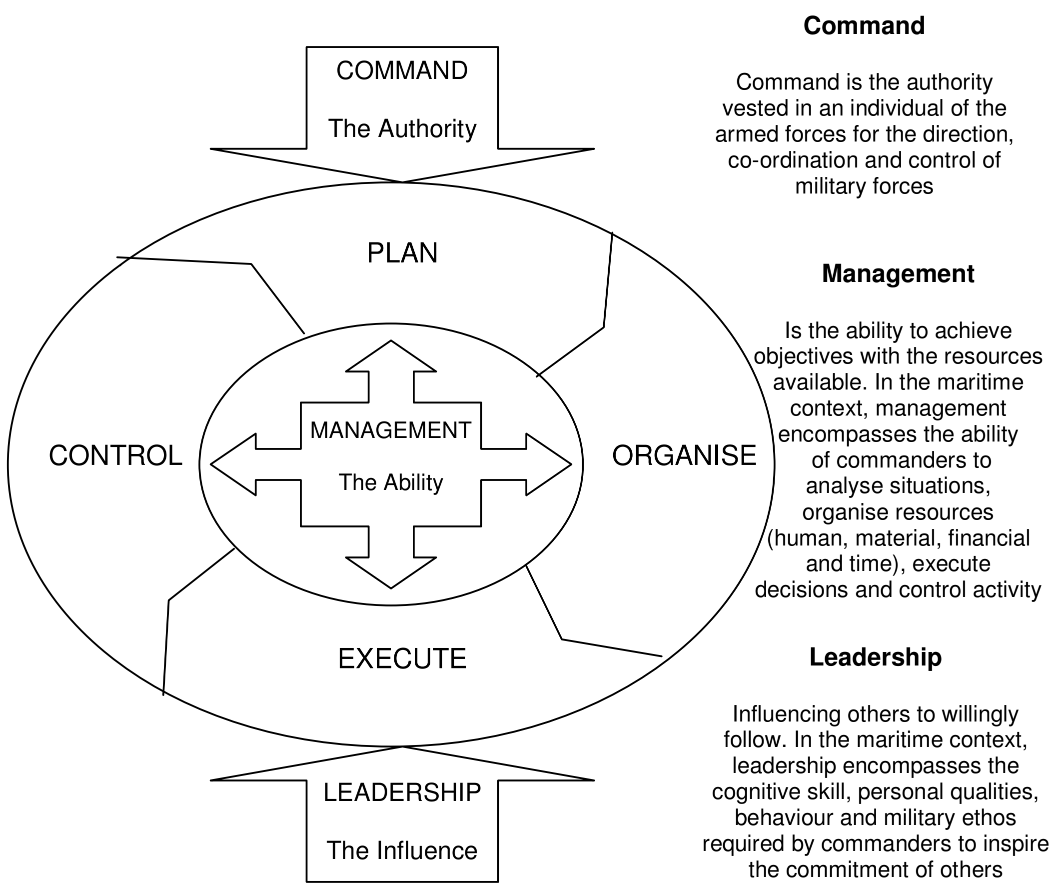

Figure 2.7: “Getting things done” model of command, leadership and management
Source: Young and Dulewicz, 2005: 230.

The SANDF has its own requirements with regard to what the officer needs to *DO*, and the focus will now move towards the assessment requirements of a young officer (lieutenant) and the competency matrix as developed by Joint Training for lieutenants. Assessments aim to compare behaviour and performance to the acceptable standards and are a good indication of what the profile of an officer should be. The efficiency assessment of middle managers in the SANDF falls in the category that makes provision for the rank group private/airman/seaman up to major/lieutenant commander. This assessment evaluates the managerial and job ability, as well as the adaptability of lower to middle management in the SANDF as illustrated in Table 2.12.

Table 2.12: SANDF Efficiency Assessment for Pte/Amn/Sea to Maj/Lt Cdr

MANAGERIAL ABILITY	JOB ABILITY	ADAPTABILITY
• Control of the flow of work • Control of subordinates' work • Ability in determining job priorities • Ability in determining objectives/goals • Upholding of standards • Providing against difficulties that may occur • Ability to take timeous decisions • Self-confidence • Judgement • Handling of emergency assignments	• Willingness to proceed on own initiative • Compliance with time tables • Standard of work • Willingness to accept responsibility • Contribution to improve work methods • Perseverance during long and difficult tasks • Ability to cope with various assignments • Eagerness to undertake assignments • Ability to switch from one task to another • Knowledge of the detail of present work	• Reaction to suggestions and criticism • Co-operation • Tactfulness and courtesy • Ability to adapt to new methods/procedures • Control of temper under normal circumstances • Maintenance of discipline • Disposition towards the SANDF • Willingness to share in unpleasant tasks • Self-control under difficult circumstances • Attitude, neatness and general behaviour
1 = Unacceptable	4 = Acceptable	7 = Above Average
2 = Weak	5 = Satisfactory	8 = Excellent
3 = Below Average	6 = Good	9 = Outstanding

Source: Department of Defence.

As can be seen in the table it is a very subjective test of performance that needs to be completed by the supervisor. The assessment, however, covers the three aspects referred to in the FM 22-100: *BE, KNOW, DO.* As an indicator of entry-level management requirements, this assessment fails because of the inclusion of non-commissioned officers, but it at least provides a useful framework from which the required competencies of young officers can be derived. The British Royal Navy's competency requirement will be used as the point of departure, and the reason for doing so is the similarity that exists with current efforts in South Africa to define officer competencies.

Young and Dulewicz (2005: 228) developed a model that clarified the competencies relevant to effective command, leadership and management as experienced in the British Royal Navy. Four "supra-competencies" clusters were identified and are now the basis of command, leadership and management training and development with possible use in officer selection. These competencies, as indicated in Table 2.13, were developed by validating a study of leadership against formal performance appraisal data. Although this is broad in scope there are various similarities with the SANDF efficiency assessment, as already discussed, and the SANDF competency requirement as will be discussed in the next section.

An integrated project team of CJTRNG as recently as 2006 compiled an outcomes analysis to determine the skills, knowledge and aptitudes required by officers at the various operating levels. In order to achieve these levels SANDF members have to complete various programmes that develop, educate and train them. This development focuses on leadership, communication and personal mastery skills over six stages: pre-commissioned, service primary, service intermediate, service senior, joint ops level, and the joint strategic level. The educational aspect addresses academic development and the training aspect addresses the functional military training. The personal mastery skills refer to the different forms of literacy and it was mentioned during a personal interview that financial literacy should be included in this section.

Annexure 1 illustrates the SANDF competency matrix for officer's that is still a work in process. Similar tables were developed for the different ranks but this table refers to the competencies as required by the rank of lieutenant, which is a junior officer. A number of the first-year students at the SAMA, that will be the subjects of the case study, fall within this category.

Table 2.13: The Royal Navy's Command, Leadership and Management Competencies Model

Competency cluster	Activity		
	Command (exercising the authority)	Leadership (influencing the people)	Management (using the resources)
Conceptualise – get the picture	Clarifies the superior intent, exercising critical analysis and judgement to accurately establish the required contribution to the overall strategy	Sets a direction based on the important imperatives and in so doing creates a vision that provides a clear unambiguous focus for team members	Adopts a strategic perspective, plans innovative and integrated goals for the future, to deliver effective and efficient performance
Align – focus controllable assets	Confident to decentralize command by accepting responsibility for tasking, delegating accordingly and ensuring subordinate ability to meet the remit	Aligns people, getting them moving in the same direction by being credible, demonstrating integrity and empowering appropriately	Converts long-term goals into action, managing risk where appropriate. Organises tasks, sets SMART targets and develops subordinates to maximize their potential contribution
Interact – work with and through other people	Takes charge, making timely and effective decisions, promoting freedom and speed of action and initiative whilst remaining responsive to superior direction	Energises team performance using communication and empathy to support the required interpersonal relationships	Influences the operating environment by monitoring and evaluating performance then taking action, where appropriate, to ensure the required standards are being met
Create success – habitually deliver results	Succeeds through professional effectiveness, commitment to the task and unwavering determination to achieve objectives	Delivers performance through personal commitment and involvement in the creation and maintenance of teams	Achieves results through effectively deploying and constantly improving the infrastructure of the organisation and the skills of its people

Source: Young and Dulewicz, 2005: 239.

The rank of lieutenant is at a junior level and these officers will aspire to be promoted to become senior officers. To become senior officers (middle management), junior officers have to be trained, educated and developed to function effectively within an abstract military environment where unfamiliar multi-dimensional (multi-mustering) military problems will be encountered in a limited supervised work environment. To ensure this development it is foreseen that these junior officers enrol through the SAMA or other universities to be educated in specific academic fields augmenting military training (Smit, 2005).

Although profiling of the required competencies is still a work in process, the competencies as identified by CJTRNG are closely related to those identified for managers in the public and private sector. The profile is further enhanced by the unique requirements set within the defence environment as part of military ethics, code of conduct and regulations. These requirements identify a special relationship between officer, subordinate and the organisation, and the relationship requires leadership that shows character (*BE*), knowledge and skills (*KNOW*), and actions (*DO*). Part of the character are the personal mastery skills as identified by JTRNG that include financial literacy.

2.6 CONCLUSION

This chapter has defined competence and competencies, and identified the different competencies for managers in general, in the public sector, and those as officers of the SANDF.

Firstly, competency was defined by Draginidis and Mentzas (2006: 53) as a combination of tacit and explicit knowledge, behaviour and skills, which give someone the potential for effectiveness in task performance. Secondly, general management competencies were identified depending on the role and functions that need to be performed. Boyatzis' application of competency clusters indicating the required competencies to specific levels of management was accepted for the entry-level manager.

Thirdly, public management competencies were identified after acknowledgement of the differences that exist between private and public management and scrutinizing competency development over the last three decades. Virtanen's competency clusters were accepted as the basis for this research. Lastly, a profile was created for the officer at lower-management level by including assessment criteria, educational offerings, code of conduct and the preliminary competencies as identified by Chief Joint Training. Within the competency matrix developed by Chief Joint Training financial literacy was identified as a personal mastery skill.

Is financial literacy really a core competency for the officer, a public official, at lower management level? Given the definition by Draginidis and Mentzas (2006: 53) the answer lies within the task description of the young officer. As a manager in general, financial literacy is not specified at entry-level. Although not specified in the public management competency framework, Virtanen identified resource allocator, project evaluator, entrepreneurial and financial management as some of the 55 competencies for public managers. It could be argued that these competencies require financial literacy as a basis. The issue of whether financial literacy is a competency will be resolved once financial literacy is defined. Most important, however, is that financial literacy is identified within the SANDF Competency Matrix for Officers – Lieutenant as a required competency of personal mastery. This in itself is a good enough reason to measure financial literacy.

But what exactly is financial literacy and what questions should be asked to measure financial literacy? Financial literacy as a competency could be: "…a combination of tacit and explicit knowledge, behaviour and skills…", but this generic definition needs to be confirmed first. Consequently, Chapter 3 will briefly focus on the contextual nature of financial literacy by identifying the need for, and the presentations of, financial literacy training and education at a global and national level. The impact of these presentations will also be assessed in a review of existing literature, and then in Chapter 4 a proper definition will be formalised as a point of departure for the development of a valid and reliable measurement instrument.

CHAPTER 3

FINANCIAL LITERACY: A CONTEXTUAL ANALYSIS

3.1 INTRODUCTION

In the previous chapter, competencies were defined, and the competencies identified that are required by managers in general, within the public sector, and as a young officer in the SANDF. Although none of the competencies identified for managers in the public and private sector mentions financial literacy as a required competency, it is specified as a personal mastery skill within the SANDF. Therefore, the importance of financial literacy as a military competency is established and logically one could proceed in measuring it. The problem, however, is that as a concept financial literacy is ambiguous and should be defined and described before it can be measured. Therefore, this chapter will focus on the description of financial literacy and will aim to determine the contextual nature of financial literacy. This will be done by scrutinising the need that exists internationally, nationally, and within the organisational environment for financial literacy and the scope and results of financial literacy education and training presentations. As a result, what the broad community sees as financial literacy will be identified. The next chapter will then define financial literacy as a concept and identify the elements that constitute financial literacy so that this can be included in a valid and reliable measure of financial literacy. Specifically, the research objectives of this chapter are to:

- make a case for financial literacy at a global level, at a national level that includes South Africa, and at the relevant organisational level (SANDF) by scrutinising the need for financial literacy that exists and the consequences of not being financially literate;
- identify the efforts aimed at improving financial literacy at the international, national and organisational level, and specifically reflect on the scope of what is presented as financial literacy education and training;
- determine the impact of these financial literacy interventions by scrutinizing unsuccessful and successful interventions within the international arena, specifically the USA;
- draw conclusions on the contextual nature of financial literacy.

The collation and presentation of information should indicate the need for financial literacy, clarify the ambiguous nature of financial literacy and illustrate the scope and success of financial literacy education and training on a global, national and organisational level.

3.2 THE CASE FOR FINANCIAL LITERACY

The previous chapter listed financial literacy as a core competency requirement within the SANDF. However, no reasons were given as to why it is important as a personal mastery skill. Therefore, this section will aim to establish the importance of financial literacy by making a case on the global, national, and organisational level as to why it is so important. The case for financial literacy is bigger than just being a skill requirement set for young officers within the SANDF. Globally, nationally and at organisational level there is a need for individuals to improve their financial knowledge and financial behaviour. Changing markets and technology, changing support structures and personal changes necessitate an improvement in financial knowledge and behaviour. The result of financial literacy is individuals that are better informed, markets that will function more effectively, and social cohesion and personal wealth that will improve. Wealth improvement, however, is not only the result of increased knowledge, but also of behaviour such as increased saving, better management of debt, retirement provision, and can result in less financial stress and increased effectiveness.

Conversely, if financial knowledge and behaviour does not improve, stakeholders remain confronted by a situation of low savings, high debt, little provision for retirement and ultimately high financial stress levels and ineffectiveness in the work environment. There are many more consequences of financial illiteracy that can be listed at a global, national, and organisational level, and most of them involve the individual and are not restricted to any level.

It would be prudent to begin at the highest level of concern, and that is the global level. According to the Oxford English Dictionary (1989), *global* as a concept has replaced international, "… is a synonym of worldwide**,** and means of, or relating to, or involving, the entire world in the general sense or as the planet Earth". It is "… a way of referring to issues, processes and structures that affect human beings collectively", and the primary issues of concern are the use of scarce resources and the attainment of social cohesion.

Any financial decision made by the individual is a claim against global resources. Even when an individual refrains from acting, it is a financial decision with consequences for society. Global organisations are therefore concerned with the financially-related decisions made by individuals and the quality of those decisions, because they affect the world economy by affecting social cohesion and financial markets.

Social cohesion according to Johnston (2005: 1), Secretary General of the Organisation for Economic Co-operation and Development (OECD), is what enlightened societies strive to ensure, and depends primarily on savings and the building of capital. He pronounced that imbalances of wealth will undermine this cohesion and therefore countries should address the creation and distribution of wealth through financial education. Social cohesion, from an American perspective at a more fundamental level, is the social fabric and national image, and are intimately connected to material aspirations and having the tools and ability to improve lives and livelihoods (NCEE, 2002: 4). Therefore, people should be financially literate to apply their tools and abilities effectively within financial markets, and as a result, financial markets will distribute limited resources more effectively (Clementi, 2004: 1).

Krueger (2002: 19-20), Deputy Managing Director of the International Monetary Fund, at the Financial Literacy International Conference in 2006, questioned the effective application by individuals of financial abilities. She referred to the demonstrations against globalization and expressed her concern that demonstrators advocate the opposite of what they actually covet, based on a lack of financial knowledge. Examples of these expressions are the fear that globalization will lead to lower labour and environmental standards, and that the relationship between debtor nations and creditors is exploitive in nature (NCEE, 2002: 3). She concludes her argument by stating that the more economically literate people are, the more productive debates would be on global issues, and this would result in a more productive and economically viable society. In the same vein, Braunstein and Welch (2002: 445) contend that the poor financial literacy illustrated by consumers compromises market operation and competitive forces.

The effective functioning of markets, and therefore financial literacy, is even more important at the national level where governments intervene by means of regulation. Financial markets are the result of the financial activities of individuals and organisations, but also influence the activities of those role players. For markets to operate efficiently, consumers should be knowledgeable and illustrate the relevant behaviour and skills (Anon, 2006: 1). As stated by Hilgert and Hogarth (2003: 309), in classical economies the informed consumers act as the checks and balances that keep unscrupulous sellers out of the market, and are less likely to react prematurely or overreact, which will allow governments to limit the regulation of financial markets.

Feslier and Crossan (2006: 7-9) elaborates on the relationship that exists between financially literate consumers and regulation. Firstly, if regulation were complex consumers would need more knowledge. The complexity of disclosures, because of regulation, with regard to products, services, fees, risks and returns requires advanced financial understanding. Secondly, if regulation is light handed consumers need to be more alert and understand products and financial principles even better to be safe. Either way the consumer needs to be financially literate, but as indicated by Feslier and Crossan (2006: 7-9), and the OECD (2005c: 4), financial training and education should complement regulation rather than replace it.

Limiting regulation in practice is not as easy as just excluding it. Although governments are trying to limit regulation and their involvement in the market, changing demography, amongst other things, is posing challenges to them. Firstly, there is a growing trend globally for governments to limit their involvement in the market by reducing their responsibilities as income, pension, and tuition fee providers. This will mean that individuals have to provide for themselves and need to be educated to do so. Secondly, because of changing demographies, countries are becoming more diverse and need to integrate foreign-born households and minorities within existing financial systems (Anon, 2006: 1).

The integration of minorities, however, is not always effective and should be complemented by financial education. A case in point is the USA where foreign-born households, such as Hispanics and African-Americans', net worth is far less than that of white Americans (NCEE, 2002: 2). The integration of minority students, according to Muir (2005: 38), is also not effective. Minority students in the USA are financially less literate than their counterparts, they are more likely to drop out of university due to financial problems, and they are not able to depend on their parents for financial help. These groups encounter language, educational and cultural barriers that discourage a banking relationship with financial institutions. Not only does the banking relationship educate financially, it also encourages saving and acts as a vehicle for government intervention. International research suggests that 51% of households that have a banking relationship save regularly, compared to the 14% that do not (Braunstein & Welch, 2002: 448), and there is a move at government level, especially in the USA and UK, to make electronic payments of income and benefits into a bank account compulsory (OECD, 2005a: 78).

As stated earlier, markets are the result of the financial activities of individuals and organisations, and because of the needs of individuals and organisations, markets have to incorporate changing technology and be creative in developing new products and services. The needs of individuals and organisations disturb the equilibrium of markets and as a result technology changes and market innovation is applied by suppliers as is noted by Braunstein and Welch (2002: 445-448). This improved technology and innovation leads to the transformation of the marketing, delivery and processing of financial products and services, and products such as Internet banking, cell phone transactions, and auto bank transactions, which complement over-the-counter transactions, become available. As a result, knowledge imbalances occur between suppliers and consumers, and there is a decrease in the banking relationship that can and should be corrected through financial education (Todd, 2002: 6) (Hodge, 2006: 25).

Knowledge imbalances are also the result of the increased availability of consumer information databases, and can lead to the development of exact fitting products and services that can, unfortunately, lead to fraudulent exploits. The more accurate credit assessments lead to an increase in loans extended. Although loans become more attractive and flexible, consumers may end up with more expensive accounts, increased monthly fees, overdrafts, or excessive transactions if they are not careful. Two types of loan transaction that require consumers that are knowledgeable warrant mentioning. The first is questionable mortgage lending and the second is payday lending.

Questionable mortgage lending is a loan with small premiums but large balloon payments at the term of maturity and although in most cases are not technically illegal, they are inappropriate and detrimental to most consumers. However, to regulate this practice would restrict needed access to credit, and therefore, consumers should rather have more knowledge. The second loan transaction is payday lending or predatory lending, where money is borrowed on a future pay cheque. Payday lending is a huge industry in the USA, according to the Center for Responsible Lending, as quoted by Gross (2004: 4). They estimate that predatory lending strips $16 billion in wealth from American consumers annually, and that this industry grew almost 1 000% in the 1990s. In 2003 payday lenders charged $4.3 billion to lend $25 billion (Gross, 2004: 4), an annualized average cost of 300% (NCEE, 2002: 2). Therefore, changes in technology and market innovation can be beneficial to financial institutions at the cost of unknowledgeable consumers.

From a national perspective, the changes in technology and market innovation also force individuals to react. Their needs and responsibilities change with the market changes, and they have to make knowledgeable decisions and then implement these decisions. The main questions that individuals face in order to meet their needs and responsibilities are asset accumulation, debt management, and retirement provision. According to statistics and research that will now be quoted, individuals are not coping with these questions. Results of various studies indicate a decrease in asset accumulation such as savings, an increase in debt and default on debt, insufficient retirement provision, low financial literacy scores, high financial stress levels and as a result ineffectiveness in the work environment. These are all the result of people not having the necessary financial knowledge and demonstrating incorrect financial behaviour which is of concern globally, nationally and at organisational level.

The first activity of concern is asset accumulation activities, such as saving and having your own business. These are important to both society and the individual. For society and government, an increase in saving, *ceteris paribus*, leads to an increase in money supply, a decrease in interest rates, and an increase in investment and therefore economic growth. For the individual in the short term, savings act as a cushion against misfortune and in the long term they make provision for retirement and home ownership (OECD, 2005a: 78).

Savings, according to various surveys are not enough and start too late. In the USA the savings to disposable income (DI) ratio decreased from 8.7% in 1992 to 0% in 2000 (Greenspan, 2002: 41). According to the Wealth Span Model that compared the life-long savings and spending patterns of Americans in 1930 with the patterns of 2000, saving also starts too late. Asset accumulation in the 1930s started at 20 years and continued to 60 years compared to 25 to 65 in the year 2000. Another saving-for-retirement concern is longevity. In the 1930s a maximum of 20 years were spent in retirement compared to the expected average of 35 years in 2000. The result is that there is a 44% chance that a 60-year-old child will have one parent alive and in need of care compared to 7% in 1900 (Cutler, 1997: 39).

Managing a small business also contributes to asset accumulation. Small businesses generate almost 50% of the private gross domestic product in the USA, are a vehicle for minorities to gain access to finances, and could be an effective allocator of capital. That is, if managers manage effectively. A survey done by Brown, Saunders and Beresford (2006: 183-191), on small businesses in the UK concludes that of a list of 17 issues queried by 95 owner-managers within the previous six months of business, financial issues such as funding, finance and accounts proved to be at the top. Although these issues are at the top, only 11% of the owner-managers participated in finance/account training, even though 95% indicated themselves to be less than “very confident” on their finance and accounts personal skills. This contradiction is supported in rating the perceived importance of financial awareness, skills and literacy. Of the seven important business knowledge areas, finance/accounts rates in the bottom three, behind marketing/selling, technical skills, interpersonal skills, and business planning. In summary finance/accounts is the most consulted area, least educated/trained for, and perceived to be of the least importance. The irony is that this sample still had an 86% survival rate over their debt.

To many consumers debt is the answer to insufficient savings, although it is intended to be a vehicle for short-term liquidity problems. In other words, to purchase or pay for something that you will have the money for at some later stage. However, with the increase experienced in economic growth and per capita income, and a decline in interest rates, credit has become more accessible (OECD, 2005a: 33). Inversely, savings drop with the increase in debt and this ultimately results in bankruptcy. A case in point is the 1.4 million Americans who filed for personal bankruptcy in 1998.

Although household debt consists of either consumer credit or mortgage credit, and indebtedness is mainly due to home mortgages, the misuse of credit remains the primary cause of bankruptcy. At the State of Financial Literacy in America conference, some of the following credit statistics were presented:

- Sixty percent of American households carry over some portion of their credit card debt every month. The average balance is more than $4 000.

- Twenty percent of families with an annual income of below $50 000 spend close to half of their net income on debt payments.
- More than 2.5 million families and individuals are estimated to seek professional help by means of credit counselling each year (OECD, 2005a: 63).
- In 1999-2000, 1.27 million American households declared bankruptcy.
- Between 1990 and 1999, there was a 51% increase in annual bankruptcy filings among adults of 25 years of age and younger. These increases also manifest in the UK, Korea, and Austria.

Students, the subject of this research, are not doing any better than the average American in managing their debt. More than 33% of American students have a credit card even before they start their studies, and 44% acquire one in their first year (Braunstein & Welch, 2002:448). Of all American college students, 20% had four or more credit cards in 1998 (Warwick & Mansfield, 2000: 618), and according to Boss (2002:13), 10% of American college students owed more than $7 000 on their credit cards before graduation. The median debt per student in 2001 was $1770, an increase of more than $500 from the previous year (Beverly & Burkhalter, 2001:122). Due to the debt banks suffered $3.8 billion in losses on credit cards and consumer loans in 1996 (Warwick & Mansfield, 2000: 617), and as a result the fastest-growing group declaring bankruptcy is young adults, aged 20-24 (Greenspan, 2002: 41). This situation is of major concern, because according to Simpson (Warwick & Mansfield, 2000: 619) Indiana University claimed that they lost more students to credit card debt than academic failure.

Although the misuse of credit is the primary cause of bankruptcy, a lack of knowledge and ineffective financial behaviour is also to blame. Mavrinac and Ping (2004), as quoted by the OECD (2005a: 65), support this statement by suggesting that for the majority, debt is due to financial illiteracy rather than a lack of income. The findings of the Commonwealth Bank of Australia also indicate a significant relationship between defaulting on mobile phone, credit card and utility bills payments and low financial literacy (Anon, 2005: 9). If these statements are correct, there is major reason for concern, because financial literacy scores are low throughout the world. Table 3.1 indicates the scores achieved internationally by individuals on various financial issues.

Table 3.1: International Financial Literacy Survey Results

• New Zealand: 54% of respondents believed that fixed income investments provide higher return than stocks over an 18-year period.
• German survey by Commerzbank AG in 2003: Although 80% were confident on their understanding of financial issues, only 42% could answer half of the questions correctly.
• A survey in Japan found that 71% of respondents had no knowledge about equities and bonds; 57% had no knowledge about financial products in general; and 29% had no insurance or pension knowledge.
• Korean students answered less than 60% of questions to a financial literacy test correctly in 2003
• An Australian survey found that 37% of investors were not aware of the possible fluctuation in investment value, and of the 67% that understood compound interest, only 28% could actually apply it. • An adult survey indicated that 21% of those who received and read superannuation statements did not understand them. • When asked four questions on a bank statement, only 49% answered all questions correctly.
• The USA National Council on Economic Education survey: Adults scored average C; School population scored F (ave = 53%) • University of Michigan's 2001 Survey of Consumers tested 1000 respondents: Only 56% knew that shares have the highest return of all long-term investments. Of the 28 questions in the quiz, Americans could only answer two-thirds correctly. • 2004 Health and Retirement Study: Only 18% could compute a compound interest calculation correctly. • Grade 12s scored an average of 52.3% in the 2004 personal finance survey. • Students taking personal finance or economics performed worse than average during 2000 and 2002 surveys. This position improved in 2004.

Sources: Lusardi and Mitchell (2007:36-39), Swart (2005:49), Johnston (2005: 2), Moorer (2001: 18), OECD (2005a: 42-44).

The misuse of debt, however, is not only due to a lack of knowledge but also due to poor financial behaviour. In other words, it is caused by ineffective financial behaviour by consumers and students alike. Research by the University of Michigan illustrates a financial practices index that reflects the frequency of financial management activities of consumers tested (Hilgert & Hogarth, 2003: 311). The results indicated that only 66% of respondents take part in cash-flow management activities; 45% in credit management; 33% in savings management; and 19% in investment management.

Earlier, in 1999, the Americans for Consumer Education and Competition's (ACEC) research on student financial behaviour found that only 23% of the respondents created and followed a budget (Beverly & Burkhalter, 2001:121). Fifty-four percent of these students compared prices often, and 23% often tracked expenditures. Another survey of more than 1 000 students at 27 colleges and universities and 19 states by Students in Free Enterprise (Anon, 2002: 10) found that:

- Although 92% know how to balance a cheque book, only 62% actually do it;
- 38% prepare a monthly budget, but 28% do not stick to it;
- 74% of men stick to a budget compared to 69% of women;
- 39% of men have investments compared to 31% of women;
- 66% of women balance their chequebooks compared to 56% of men.

Therefore, people are not saving, and they are in debt because of unknowledgeable and ineffective financial behaviour. What does this mean for retirement? One would expect retirement provision to be poor given the low savings rate. Added to the low savings rate are the additional global issues of decreased government support, and the challenge posed by the baby boomers of WW II (OECD, 2004: 223; OECD, 2005a: 29). The baby boomers are a generation that delayed childbearing or had fewer children resulting in a smaller generation to follow. This simply means that there are fewer workers to support retirees for a longer period, due to the increase in life expectancy. This is the old-age dependency ratio as illustrated in Figure 3.1, calculated by dividing the number of people 65 years and older by the number of people aged 15-64 (workers). The ideal situation is a very low old-age dependency ratio.

The figure indicates the ratio in 2005 and then makes projections for 2030 and 2050 for various countries, including South Africa. In the USA, in the year 2010, there will be five "workers" for every retiree. A low ratio of workers compared to retirees poses a substantial threat unless retirees make provision for their retirement. Whether this happens is not clear. Some research suggest that only one in three retirees will have made provision for retirement in the USA in 2010, while authors such as Cutler (1997: 34), dispute this concern by stating that 25 to 44-year-olds are now doing better wealth wise than 25 to 44-year-olds a generation ago, and therefore will be able to fund their retirement.

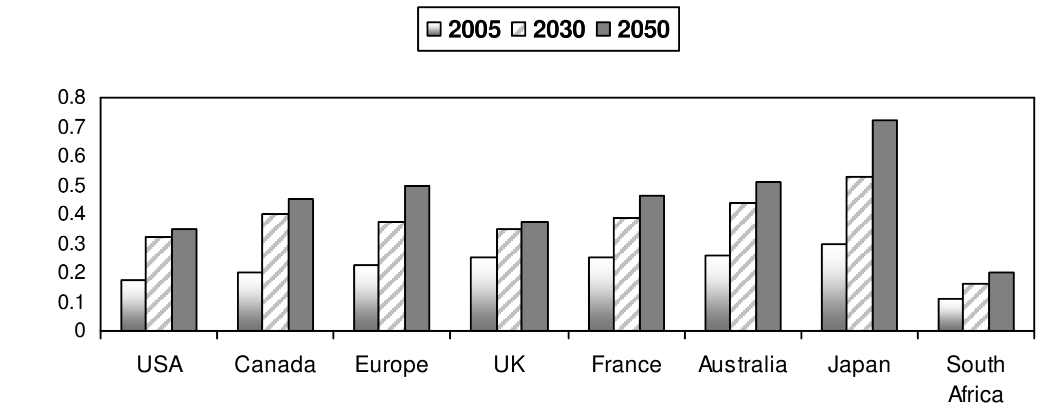

Figure 3.1: Old-age dependency ratios
Source: United Nations (2007), World Population Prospects: The 2006 Revision Population Database, United Nations New York.

What is of national concern is that if retirees cannot support themselves or be supported, they will have to sell their assets or postpone retirement. Both these actions pose problems for markets and the government. Firstly, in selling off assets, retirees will flood the market with assets and this will lead to a decline in prices. This will lead to a decrease in return on investment and a possible economic crisis. Secondly, when more people realise that they are not ready for retirement they will have to postpone their retirement. According to the 2003 Retirement Confidence Survey, 25% of American respondents aged 45 and older, plan to postpone retirement because of insufficient savings. Although this postponement seems positive, it means that older people will be occupying jobs that could have been filled by others. Thus, it will lead to an increase in unemployment and therefore pressure on governments.

However, does this mean that no provision is made for retirement, and more importantly, is there a relationship between the financially literate and retirement provision? Research would seem to suggest that there is an existing relationship. In the USA mutual funds are seen as the vehicle for retirement planning and preliminary evidence from a Survey of Consumers (Fox, Bartholomae, & Lee, 2005: 202) suggests that 56% of knowledgeable consumers had mutual funds compared to the less knowledgeable (25%). This clearly suggests that the financially literate will save, and in doing so will alleviate the burden on governments and be more content. McRae (2006: 7) elaborates by suggesting that the more financially content people become, the more resources they release towards the needy, and the less financially stressed they will be.

Financial stress, according to Van den Heever (A Nation of Financial Dunderheads, 2003: 33), rates as the highest of the five major sources of stress, and is five times higher than health concerns. Lenhart (2006: 46) agrees by stating that money is the number one cause of stress in today's society and organisations. Causes for financial stress are the increase in fuel prices, inflation, possible increases in interest rates and high debt to disposable income figures. As a result, many employees live from pay cheque to pay cheque. In America, according to Lenhart (2006: 46) this is true of 70% of the US workforce, and has a detrimental effect on their employers.

Stress is unhealthy and affects work performance negatively. Paula Edwards (Stone, 2004), CEO of Nationwide Federal Credit Union, is of the belief that there is a significant correlation between financial stress and workplace performance. Of concern to all employers is the statistic that suggests that 25% of employees spend about one hour a day distracted by their money concerns. There are also indirect costs associated with workplace accidents, workplace violence, employee turnover, and increased healthcare costs due to stress-related illnesses (Lenhart, 2006: 49). An example of workplace violence is a recent shooting incident in a Kroonstad military unit. A labour union official claimed financial hardship as a contributing factor to this tragedy. Therefore, it can be concluded, in association with Lenhart (2006:49), as well as the OECD (2005a: 64), that family security and national economic security are under threat due to a lack of financial literacy.

Financial stress, according to Hira and Loibl (2005: 185-188) is inextricably linked to financial illiteracy. The researcher deduces that financial optimism, confidence in the future financial situation, as well as employee satisfaction will be positively affected by increased financial literacy. Employees and consumers are indeed realising that improved financial literacy will also improve their financial well-being, and are therefore investing in financial education.

This reality is confirmed by increased sales of literature on financial literacy (Mantell, 2004: 28). Popular titles purchased by consumers include *The Budget Kit: The Common Cents Money Management Workbook*; *Rich Dad, Poor Dad*; *A Girl's Guide to Money*; and *Missed Fortune 101: A Starter Kit to becoming a Millionaire*. One popular title, *The Budget Kit,* by Judy Lawrence, has been reprinted in three editions since 1993. Another, *Rich Dad, Poor Dad* by Robert Kiyosaki reached sales of approximately 300 000 copies between 2000 and 2004. These sales were made worldwide, including South Africa.

South Africans, similar to other nationalities, should be financially literate. Being part of the global economical environment, they should contribute to establishing social cohesion and applying effective resource decision making. South Africa has the challenge to integrate a diverse population with its financial markets, and similar to other countries, to decrease government involvement in regulation and support. As suggested government regulation can only decrease if consumers' financial illiteracy is reduced.

The education of consumers through inter alia improving their financial literacy has been identified by the South African Bill of Rights as one of eight fundamental consumer rights. Under this particular right, "… consumers need to acquire knowledge and skills needed to make informed and confident choices about goods and services, while being aware of the basic consumer rights and responsibilities and how to act on them" (RSA, 2009: 1). This ability to acquire knowledge and skills, however, is under threat from poor maths and language skills, economic illiteracy and financial dependency. UNESCO found only 87% of the South African population to be literate in 2005 and in 2002 South Africa ranked lowest of 49 countries in a World Competitiveness report on economic literacy (Mbabane, 2004: 3).

Table 3.2: RSA Financial and Economic Indicators

	2001	2002	2003	2004	2005	2006
Business liquidations	4156	3911	4086	3510	3225	3026
Insolvencies	3936	3048	2643	1954	1589	1387

	2006	2005
Household saving to disposable income in 3^{rd} quarter	-0.3%	0.1%
Household debt to disposable income in 3^{rd} quarter	73.1%	64.6%

Source: SARB, Stats SA, and South African Institute of Race Relations.

In making informed and confident choices with regard to asset accumulation, debt management, and retirement provision, South Africans are struggling. Similar to other nations South Africans are not saving enough, and are experiencing high debt rates as illustrated in Table 3.3. Savings compared to disposable income (DI) are decreasing and debt to DI is increasing continuously as illustrated in the table.

With regard to retirement, it is predicted that only 6% of South Africans will be financially independent at retirement, compared to 69% in 1962 (Unique Wealth, 2005). The old-age dependency ratio, however, does not seem as dire. Figure 3.1 indicates South Africa to be in the fortunate position of having nine "workers" for every person beyond 65 years of age, and predicts that this position will not change dramatically over the next 45 years. Clearly, the limitation of the old-age dependency ratio is the assumption that people between the ages of 15 and 64 are employed and effective.

South African cultural diversity, however, poses challenges for consumers in exploring their rights and responsibilities. Some cultures do not believe in life assurance or saving with a bank, for instance. Similar to the international trend the unbanked consist of heterogeneous and diverse consumer groups such as low-income consumers, ethnic minorities, immigrants, refugees and indigenous consumers. These groups usually reside in either inner city and deprived areas, or remote and isolated rural regions (OECD, 2005a: 76). Of even more concern is the fact that the banking environment discriminates against these minorities. The greater competition in the financial sector leads to financial institutions focusing on higher margin majority markets rather than more difficult and costly minorities, and this leads to the undermining of social cohesion. For many of these minorities joining a large organisation presents their first banking experience. The SANDF is such an organisation, where young soldiers have to open a bank account into which their salaries are paid.

Although joining the SANDF might expose young employees to positives such as a banking relationship, it also poses new threats. Many first-time employees are overwhelmed by the range of financial products offered to them. They are coerced into unfavourable activities such as having more than one personal funeral policy, and investing in 15-year saving plans while only having short-term job security. Added to that they are, in many cases, the sole income generator of a rural family and send money home monthly, ending up with no disposable income. These financial challenges are not limited to young soldiers. Numerous examples exist of Commanding Officers being black listed for not paying their debt, and therefore there is a need for the SANDF to educate its soldiers financially.

If the SANDF does not financially educate their soldiers, the organisation will experience similar incidents and consequences as identified by Vitt (2006: 4) in a study done for the United States Navy. These incidents and their potential serious consequences are:

- decreased operational readiness and retention;
- deteriorating job performance and time away from work;
- increased family violence;
- increased substance abuse;
- crime and incarceration;
- safety issues and accidents;
- possible suicides;
- and significant administrative time lost to the processing of:
  - letters of indebtedness;
  - pay adjustments and garnishments;
  - security clearance changes and reassignments; and
  - administrative separations.

This list clearly indicates the probable negative impact of financial illiteracy on the SANDF as an organisation. Added to that is a statement by the Finmark Trust (2004: 17) that stated that from an organisational perspective, financial literacy is a minimum requirement to ensure optimal functioning in an increasingly complex society.

From this discussion, it is clear that there is concern at global, international and organisational level about the financial illiteracy of individuals. Financial illiteracy, which refers to unknowledgeable and ineffective financial behaviour, is perceived to be the reason for a decrease in savings, an increase in debt, poor retirement planning, financial stress and ultimately ineffectiveness in the work place. The consequences affect financial markets, global resources, and ultimately social cohesion. However, it also prevents the individual from improving financial wealth. It is believed that financial education and training will provide the knowledge and behaviour that individuals require to face changes in financial markets and their personal financial environment and so be more financially effective. The next section, therefore, will address the issue of financial literacy training and education, with specific reference to financial education and training efforts aimed at improving the management of savings, debt and retirement. Financial education and training on the international, national and organisational levels will be scrutinized. This will ensure a better understanding of what financial literacy means, and what the scope of financial literacy is. The success of these presentations is discussed in section 3.4.

3.3 FINANCIAL LITERACY EDUCATION AND TRAINING

Having made a case for financial literacy on the global, national and organisational levels, the context of financial literacy is now explored by looking at what is being offered in financial literacy education and training. Firstly, this discussion will support the case made for financial literacy education and training, as it will indicate the extent of global efforts and, secondly, it will help in clarifying what financial literacy means. This section therefore investigates the effort and scope of financial literacy education and training at international, national and organisational level. The organisational level will focus on interventions within the military, with specific reference to the SANDF and comparison with the US Military.

Internationally various bodies, centres and programmes have been established to address financial literacy, and some are highlighted in research done by Taylor (2006). The Australians has instituted the Financial Literacy Foundation, a Federal Treasury structure that was founded in 2005, that follows the UK curriculum on the authority of the Ministry of Revenue. The New Zealand effort has the Retirement Commission as the statutory agency, and Enterprise New Zealand Trust (ENZT) and the Federation of Family Budgeting Services as not-for-profit support. The prominent supplier of financial education in New Zealand is Enterprise New Zealand.

The UK has the Financial Literacy Centre and the Money Management Council, while the Americans have the already-mentioned National Endowment for Financial Education and the Financial Literacy Center. The Canadians have the Right Start Coalition for Financial Literacy programme. The scope of presentations by the UK, USA and South Africa follows.

The scope of financial education and training is usually a function of the setting, audience and the subject matter, and is most often a combined effort between different parties (OECD, 2005c: 4). In the UK, the government announced a programme of seven projects to improve financial capability in March 2006. The seven projects focus on schools, young adults, the workplace, consumers, new parents, the Internet, and money advice. Intermediate and overall targets were

Table 3.3: Financial Literacy Provision in South Africa

Provider	Content
Financial Industry • National or broad industry level ○ Financial Services Board • Sector level ○ Life Offices Association (LOA), SA Insurance Brokers Association (SAIBA), SA Insurance Association (SAIA), Savings and Cooperative League (SACCOL), Microfinance Regulatory Council (MFRC), Micro lenders Association (MLA), and SA Savings Institute (SASI) • Institutional level ○ Banks, insurers, assurers, funeral schemes. • Corporate foundations	Broad-based financial literacy • Concept of money • Budgeting • Savings Category specific • Focus on products/suppliers such as banking, assurance, insurance credit unions, and investments Product-class • Product specific such as the use of ATMs, opening a savings account, home loans and unit trusts.
Non-profit organisations • NGOs, Trusts, Consumer bodies ○ You and Your Money ○ Consumer Bodies ○ Vuka Trust ○ The Read Trust ○ Unions	Financial education, financial counselling. Financial literacy as a sub-component of a programme • Poverty alleviation, consumer rights and protection
The Housing Sector • Home Loan Guarantee Company • National Urban and Reconstruction Agency (NURCHA) • The Rural Housing Loan Fund (RHLF) • The National Department of Housing	Promoting the training of home ownership, concept of savings, building homes, financial implications of owning a home, and empowering consumers to make informed decisions
Private Consulting Firms • Summit Financial Partners Vukani Africa Investment Management Services • Ikhumiseng Consulting	Financial literacy through employee-based programmes • General financial wellness, over-indebtedness, and financial abuse • Transforming consumers into investors

Source: Piprek*, et al.,* 2004: 23-31.

identified for each of the outcomes for the seven projects. The objective of American efforts is, firstly, broad financial education, secondly, specific education aimed at savings or retirement, and thirdly, addressing home buying and ownership. Extensive energy and resources are devoted to improving American financial literacy within these three fields associated with financial literacy.

The South African approach towards addressing the need for financial literacy has taken off since the late 1990s, and includes government, the financial industry, non-profit organisations, the housing sector and private companies (Piprek, Dlamini, & Coetzee, 2004: 18). A brief summary of the comprehensive South African approach to financial education, that includes non-profit organisations and private companies, is illustrated in Table 3.3. In support of the scope of this study, this section explores the specific contribution towards learners, students, and public employees by government and the financial industry in order to surmise the scope of financial literacy education received by students at the SAMA.

The South African government plays a primary role in the financial education of learners, students, and public employees, through the efforts of the Department of Education and the Department of Labour. The Department of Education in the course of its Outcome Based Education (OBE) presents, amongst others, the Economic and Management Sciences learning area, and Mathematical Literacy that addresses financial literacy up to grade 12.

The Economic and Management Sciences learning area as illustrated in Table 3.4, involves the study of private, public or collective use of different types of resources in satisfying people's wants and needs, while reflecting critically on the impact of resource exploitation on the environment and people. Additionally it deals with the nature, processes, and production of goods and services. It also deals with the SA economy and socio-economic systems in different countries. Furthermore, investment and financial management and planning skills, either for the private, public or collective ownership is included.

Lastly, entrepreneurial skills and knowledge needed to manage human lives and environments is covered (RSA, 2002b: 27). This learning area is complemented in the grade-10 year with mathematical literacy, a derivative of pure mathematics. The aim of Mathematical Literacy is to: "… provide learners with the awareness and understanding of the role that mathematics play in the modern world" (RSA, 2003: 9).

The aim is also to allow General Education and Training Learners to become numerate consumers of mathematics, by taking Mathematical Literacyas a fundamental subject in Further Education and Training (grades 10-12). This subject should: "… enable the learner to become a self-managing person, a contributing worker and a participating citizen in a developing democracy" (RSA, 2003: 10).

Table 3.4: The Economic and Management Sciences Learning Area

The Economic Cycle; Sustainable Growth and Development	Foundation Phase: Grade R-3
The Economic Cycle; Sustainable Growth and Development; Managerial, Consumer and Financial Knowledge and Skills; Entrepreneurial Knowledge and Skills	Intermediate Phase: Grade 4-6
The Economic Cycle; Sustainable Growth and Development; Managerial, Consumer and Financial Knowledge and Skills; Entrepreneurial Knowledge and Skills	Senior Phase: Grade 7-9

Source: RSA, 2002b.

In order to achieve the above the scope, Mathematical Literacy includes, amongst others, the "… use of numbers with understanding to solve real-life problems in different contexts including the social, personal and financial" (RSA, 2003: 10). The learner should also illustrate the knowledge, skills and values associated with functional relationships, space, shape, measurement and data handling (RSA, 2003: 12). The Standard Bank Foundation invested heavily in the area of material development as well as teacher capacity building to support the Department of Education's efforts. According to Piprek*, et al.* (2004: 20) these programmes have been employed in approximately 10 000 of the nearly 29 000 schools in South Africa.

At the Higher Education and Training level, the National Qualifications Framework regulates education and training by means of standards and qualifications. Various courses that adhere to these qualifications and standards exist and are presented by approved education and training service providers. The SAMA is an approved provider of education that addresses financial literacy as part of its Higher Certificate in Military Studies (HCMS), which was instituted in 2006. This qualification makes provision for Military Professional Development as a 12-credit subject, and includes financial literacy as a module (SU, 2006: 9). This module counts for one credit, which implies 10 nodal hours. The prescribed text is "*Randwi$e: The Soldiers Guide to*

Personal Financial Management" and addresses issues such as planning, tax, financing, investments, risk management, and financial indicators (Van Nieuwenhuyzen, 2003). This is the only financial literacy training and education within the SANDF.

One of the questions to be answered in this study is whether this effort by the SAMA is enough to promote financial literacy. A preliminary comparison with efforts at a similar institution suggests it is not enough. According to Vitt (2006: 9), the US Military has a long record of providing personal financial management education to its members, supported by various policies and programmes that have been developed. However, this is not in isolation. The National Association of Security Dealers (NASD) announced a financial literacy programme especially for military families in America in 2006 (Enzi, 2006: 1). This announcement was in reaction to exploitation by insurance and investment salespersons, and was mostly due to unclear jurisdictions, lax enforcement, and lack of knowledge of Commanding Officers. As identified by Vitt (2006: 12) many other initiatives were put in place for US service members by the DoD, the US Congress, the US Navy, and other partnering organisations, to improve financial knowledge and behaviour such as:

- Legislation, educational and funding resources, and other consumer assistance to protect armed force members from predatory selling and lending practices.
- Only approved educators are permitted to present courses to military personnel. Therefore, no person selling products or services is allowed to conduct workshops or courses.
- Professional financial counselling help must be available to service members at every installation.
- Consumer protection is upgraded through partnerships with Better Business Bureaus near military installations.
- Interventions are being offered with financial planners and credit counsellors when necessary or desirable.

These measures support the programmes that started in the mid 1960s, such as the naval programme (1979), and the Personal Finance Risk Management (PFRM). The PFRM consists of Art of Money Management, Art of Debt Management, and instruction on savings, home ownership, insurance and investment requirements for retirement (Vitt, 2006: 9). The PFRM is presented to all members. There are also programmes that are more specific for students at the US military academies.

The US Military Academy, similar to the SAMA, present economics, leadership and management (www.dean.usma.edu/sebpublic/curriccat/static/index. htm). As can be seen from the following brief exposé financial literacy is not mentioned explicitly:

- Economics provides insights into the basic social questions of what a society should produce, how that output can be produced most efficiently, and how the output should be distributed. The field includes required courses on the national economy, decision making by firms and individuals, and applications of economic principles to national security issues. In addition, there are courses on international trade, comparative economic systems, accounting, managerial economics, and financial institutions. In each course, the emphasis is on the development of principles, which can be applied to help resolve important public policy issues.
- The Studies in Leadership and Management (SLAM) programme provides cadets with the academic foundation for a wide variety of activities particularly important to an army officer and then the option of either leadership or management. Cadets pursuing the management option will study the field of management from the inter-disciplinary bases of human resource management, *economic and financial analysis*, and quantitative decision-making.

From the literature review the only evidence found of personal financial literacy being presented in the US military, was in the US Air Force Academy (www.usafa.af.mil/df/dfm/curriculum.cfm). Their Management Department provides two modules that address personal financial issues. These modules are Management 372 and 382 and are as follows:

- **Management 372. Introduction to Investing & Financial Responsibility:** This course provides an introduction to the personal financial planning process, budgeting, financial markets, investment vehicles (corporate stocks and bonds, mutual funds), analysis, and an introduction to estate planning. Topics include budgeting, time value of money, risk and return, fundamental and technical analysis of stocks, bond valuations, and the basics of mutual funds. This course is introductory in nature and assumes no prior knowledge of accounting or financial markets. A term project provides experience in developing and analysing investment opportunities.
- **Management 382. Investing & Financial Responsibility.** This course is similar to Management 372 but requires prior knowledge of the principles developed in Financial Accounting. A term project provides experience in

developing and analysing investment opportunities. Evaluation consists of a final exam or final project.

If the initiatives that were put in place for US service members by the DoD, the US Congress, the US Navy, and other partnering organisations to improve financial knowledge and behaviour is compared to the 1-credit module presented by the SAMA, what the SAMA presents is clearly not enough. However, the efforts at the general, further and higher education and training levels are not the only South African contribution to financial literacy education and training.

The Department of Education, the Department of Labour, and the Department of Housing have further involvement in the education and training of financial literacy as a skill. The Department of Education (Piprek *et al.*, 2004: 20) offers a South African National Literacy Initiative to manage policy, programmes and systems with regard to literacy. Although all areas of literacy are equally important, currently the reference to financial literacy is limited. The Department of Labour, through the National Skills Development Strategy (NSDS), is addressing the skills problems in South Africa. From the research of Piprek*, et al.* (2004: 20) it is concluded that: "… national core standards on financial literacy should be included in the core subjects presented by the SETAs", which is currently not the case.

The Department of Housing has contracted the Home Loan Guarantee Company to develop a coherent housing consumer education programme. Consumer protection is also of concern to the Department of Trade and Industry (DTI) with its various broad initiatives as well as a collaborative debt campaign with the Banking Council. According to Piprek *et al*. (2004: 19), these initiatives are limited in scope and duration.

The South African government and its collaborative efforts are not the only contributors to financial literacy education and training. The financial industry also plays a major role, and the type of involvement of the financial industry is determined by the level at which it originates. The level can be at national, the broad financial industry, sector specific bodies, individual institutions, or corporate foundations.

At the national level the Financial Services Board (FSB) aims to present a multimedia campaign funded by a trust in collaboration with various role players. Also at the broad industry level, is the MongiMali campaign, which addresses the spiralling debt of public servants. This effort started in 2000 and ran from July 2001 to January 2002. At sector level, the Banking Council implemented various initiatives targeting a broad audience on topics such as over-indebtedness. The Micro Finance Regulatory Council (MFRC) initiated various educational programmes on the rights of consumers. The Micro Lenders Association (MLA) also plays a vital role in education on consumer rights, and rights when borrowing. The South African Savings Institute (SASSI) have focused their initiatives on debt management, the importance of saving and different savings instruments. The Life Offices Association (LOA) educational initiative aims to educate current and potential life assurance clients on assurance issues (Piprek, *et al.*, 2004: 24-25).

The corporate foundations of some financial institutions are the major contributors of financial education programmes. An example is Teba Bank with its broad-based financial literacy programme and an indebtedness focused programme. Further examples are African Bank's money school and Standard Bank's contribution towards financial literacy education at school level. Except for the MongiMali campaign, there are no combined efforts to address the financial literacy education and training of members of the SANDF, a case of serious concern.

From the above discussion, it is clear that globally financial literacy education and training is a serious matter. A spectrum of stakeholders is driving education and training efforts, ranging from government intervention to private initiative, individually or combined. The international efforts address the skills, knowledge and behaviour required to make informed financial decisions by covering broad financial literacy, investment, savings and indebtedness. The South African effort started in the 1990s and is driven by government departments and the financial industry, individually and in combined effort. What is of concern is that these contributions in the context of an organisation such as the SANDF, are limited in extent when compared to the American interventions. In the case of the USA, the efforts are by means of programmes as well as policy, but in the case of the SANDF the only effort is by means of a 1-credit module limited to the SAMA.

However, it could be argued that financial literacy education and training will not improve financial knowledge, skills and behaviour. Therefore, the discussion should now focus on the success associated with known presentations on financial literacy education and training.

3.4 IMPACT OF FINANCIAL LITERACY INTERVENTIONS

Do financial literacy programmes actually make a difference, because essentially that is what this measurement instrument will measure? The aim of this study is to develop a measurement instrument of financial literacy knowledge and behaviour which is the result of financial literacy training and education in South Africa. What is the position internationally? To accommodate such a question this section will reflect mainly on American research and surveys of financial literacy training and education, both unfavourable and favourable, as a possible indicator of the international position.

Before listing the results, it is important to consider the various caveats and challenges posed by the results of financial literacy education and training programmes. Firstly, these programmes have different objectives that determine success such as immediate programme responses, completion rate of programmes, ownership such as mutual fund ownership, and the savings rate and net worth during peak earning years. Secondly, O'Connell (2006: 7) warns of significant caveats such as self-reported increases in understanding, capability, behaviour or savings; the determination of net worth; and surveys conducted or sponsored by champions of financial education. Thirdly, there are practical problems such as isolating the long-term impact of a specific education intervention, and managing multiple possible desirable outcomes. Further considerations of these education and training results are the timing and format of training, people's aversion to change (Braunstein & Welch, 2002: 445), and according to Todd (2000: 8-9), lasting evidence of changed financial literacy. As indicated by the OECD (2004: 226) there are also obstacles such as finances, time, and an awareness of the benefits of financial education.

Unsuccessful intervention and therefore unfavourable results indicate a negative correlation between financial education and training and a positive change in financial knowledge and behaviour. These negative results are noted by the research of the OECD, Hilgert and Hogarth (2003: 311); Waggoner (2006); Braunstein and Welch; Hogart, Beverly and Hilgert in 2003 (Bell & Lerman, 2005: 3); the Freddie Mac Consumer Credit Survey of 1999 (Wiener, Baron-Donovan, Gross & Block-Lieb, 2005: 349); and Mandell (2006).

The OECD found results to be negative and stated clearly that financial education is but one element of successful financial behaviour. They identified various other influences such as “live for today” attitudes, lack of willpower, and a sense of being overwhelmed by too much choice. Hilgert and Hogarth (2003: 311) agree by admitting that although a correlation does exist between knowledge and behaviour, the direction is not too clear. Although higher scores in financial literacy tests are more likely to lead to recommended financial practices, causality reverses when knowledge originates from savings and investment activities. A third identified variable that can affect knowledge and behaviour, is family experience and economic socialization.

Various examples of unsuccessful financial behaviour by the supposed financially literate are identified. An American study shows that financially literate seniors are the most likely victims of financial fraud (Waggoner, 2006: 6). The Jump$tart Coalition (Braunstein & Welch, 2002: 452-453) (Black, 2006:48), found their results indicated a decline in financial literacy in a period when public school attention to financial literacy was increasing. Knowledge of the basics of personal finance declined from 57% (1999) to 50% (2002). A shocking result is that the 2002 group was tested after one semester of training and scored less than those who were “untrained”.

Mandell (Gandel, 2006), an outspoken advocate for financial training, suggested in 2006 that research has now proven that financial training does not make children better spenders or savers, and may even create bad habits such as increased credit card debt. This statement is based on five years of financial literacy testing and the most recent test results that indicated that the financial course members attained 69% compared to the “uneducated” who scored 70%. Some interesting findings from Mandell’s research are:

- Children between 8 and 12 years are more receptive to learning financial concepts.
- Saving is a behaviour that comes from experience and not knowledge.
- An allowance can make things worse.
- Stock market games may improve financial literacy but not saving habits.
- Recent scans of brain images of consumer decision making shows that limbic areas (emotional) are prone to override the prefrontal and parietal cortices and temporal lobes (rational decision making). In simple English as noted by Laibson, an economics professor at Harvard who has studied neurology and savings, there are two parts of the brain that are often in conflict. The first part

acts principally on habit and loves instant gratification. The second part likes to weigh choices and look for the best solution. But that part is the weaker half.

However, not all results are unfavourable and a time-related analysis of the favourable results follows. A study of approximately 40 000 mortgages by Freddie Mac (Braunstein & Welch, 2002: 450)(Todd, 2000: 35), a purchaser of mortgage loans between 1993 and 1998, indicated that counselled borrowers had on average a 19% lower ninety-day delinquency rate than the non-counselled. Those receiving individual counselling had a 34% lower delinquency rate, and classroom and home counselled borrowers had 26% and 21% respectively lower delinquency rates than the non-counselled.

A telephone survey in 1995 in the USA sampled individuals from the age group 30-49 and found them to have gained exposure and improved asset accumulation through financial curricula in high schools (Braunstein & Welch, 2002: 452). Bernheim, Garrett and Maki (Bell & Lerman, 2005: 4) confirmed these findings in 2005.

In a 1997-98 study done by the National Endowment for Financial Education (NEFE) (Braunstein & Welch, 2002: 452), (Todd, 2000: 8) on the effectiveness of its High School Financial Planning Program it was found that 30% of students started saving after attending the programme. Other results were that 15% had saved more since the training, 37% now had better skills for tracking savings, 47% believed they were more knowledgeable about the cost of credit, and 38% indicated that they were better informed about investments and more confident about managing money.

Programme participants in the US Department of Agriculture Money 2000 (Braunstein & Welch, 2002: 451) programme increased their annual savings on average by $1 600 and decreased their credit balances on average by more than $1 200. Individual Development Accounts (IDA) promotes saving by lower income groups for the purpose of buying a home, education or starting a business. The IDA matches contributions made by the participant. Withdrawal of savings for any other purpose, results in forfeiture of these matching contributions. The participants to 14 of these programmes received an average of ten and a half hours of financial training and results proved favourable for the period 1997 to June 2000. The study also found that average monthly net deposits increased with each hour of financial training up to twelve hours. A similar result is the increase in net worth of adults who attended a high school with mandatory financial education (Todd, 2000: 9).

Workplace financial education also indicated positive results. Financial training at a chemical production company resulted in 75% of employees reporting a sense of benefit from such exercises (Braunstein & Welch, 2002: 451-452). Research by Todd (2000: 34) found an increase of 20% in the median total savings rate per employee if employees obtain financial training at work.

Hilgert and Hogarth (2003: 320) in their survey found that financial knowledge can be statistically linked to financial practices related to cash-flow management, credit management, savings and investment. Complementary to this, Kim (Hira & Loibl, 2005: 173) indicated that financial well-being indirectly affected workplace satisfaction. Hira and Loibl's (2005: 185-188) study supports this statement having demonstrated a positive correlation existing between employees who take part in workplace financial education and high levels of financial literacy (see Figure 3.2).

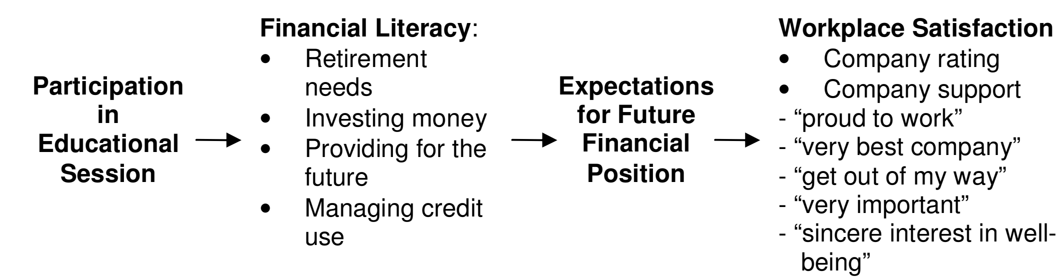

Figure 3.2: Causal relationship between financial literacy, expectations of the future and workplace satisfaction
Source: Hira and Loibl, (2005: 177).

Other results emerged in 2005 on debtor education, education of financial literacy educators, and the effect on the market. Wiener*, et al.* (2005:347) identified positive results associated with the effect of financial literacy education on debtors in the USA. Their survey focused on the Coalition for Consumer Bankruptcy Debtor Education 18-month project, Making Sense of Cents. The aim of the project was to train debtors. With regard to knowledge about wise and unwise spending, saving, and credit, trained debtors showed significant increase in their knowledge scores. The trained debtors also showed more negative attitudes towards unnecessary spending, and less intention to buy, than non-debtors.

Baron Donovan, Wiener, Gross, and Block-Lieb (2005: 69) studied the effect that financial literacy training and education had on financial literacy educators. They found a significant increase of 9% in financial knowledge, and an improvement in six out of fourteen attitude items. Of significant importance to this study are the university affiliated impact indicators of financial programmes. Figure 3.3 illustrates the indicators, as identified by Lyons (O'Connell, 2006: 13) in a survey of 259 US financial educators. The figure also indicates the percentage change for each indicator for the non-university affiliated and the university affiliated. Although the percentage change is low for some indicators, change was evident in various aspects. Except for changes in satisfaction level of the programme and socio-economic changes, the university-affiliated changes exceeded those of the non-university affiliated. Therefore, it is assumed that if similar programmes are followed at the SAMA, they should have a significant impact on the improvement of financial literacy.

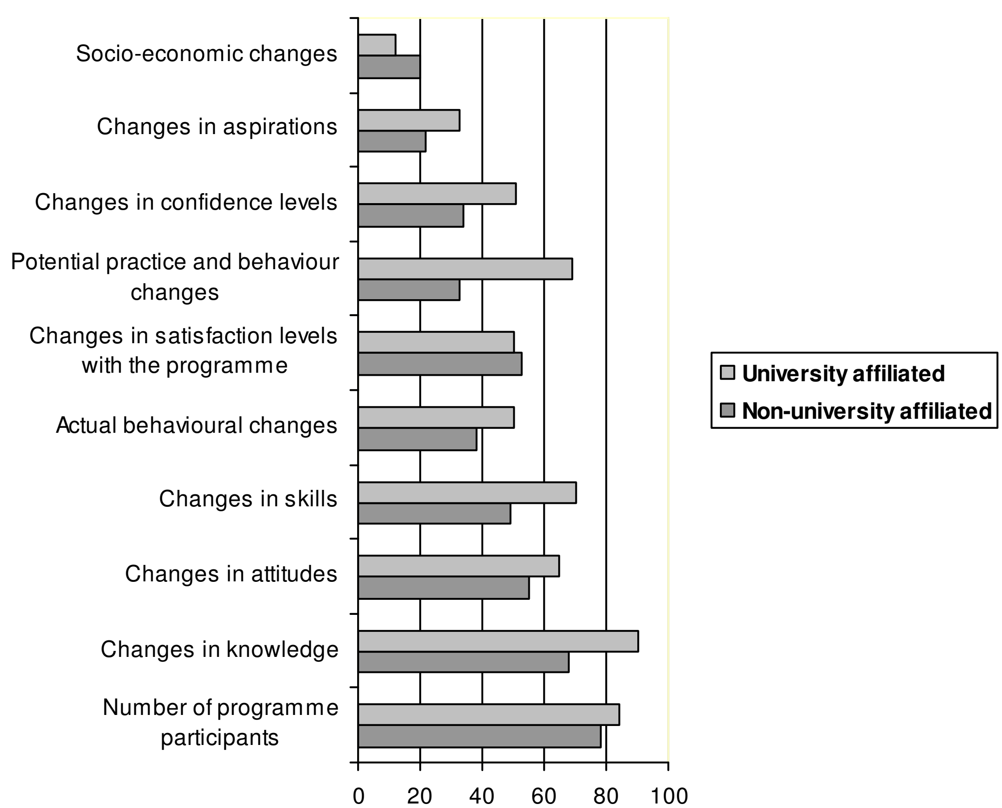

Figure 3.3: Common indicators of financial programme impact

Source: O'Connell, 2006: 16.

In America, the bottom line is actually important. Therefore, it is prudent to reflect on the survey done by Coates, Marais, and Weil (2005: 1, 11). The survey studied the impact of financial literacy at a macro level. They found evidence in the USA of superior stock market returns to companies, which improved the potential for financial literacy of audit committees, over a period of four years. Improvers generated a cumulative excess return of 19.73% greater than non-improvers. This survey was done on 300 companies (181 of the 200 largest, and 90 of the 100 smallest of the Fortune 1000) in the USA. Of these companies, 131 audit committees improved financial literacy and 130 remained unchanged. Although DeFond, Hann, and Hu support these findings, as well as Davidson, Xie, and Xu, authors such as Elliott disagree and suggest that other factors could have played a role in these superior returns. This matter presents a caveat to the measurement of the success of financial literacy education and training, as discussed in the introduction to this section.

Although the lasting effect of successful programmes is questioned by authors such as Anthes and Most (Fox*, et al.*, 2005: 199), and found to be mixed (Wiener*, et al.*, 2005: 349), (Braunstein & Welch, 2002: 445), it is suggested that the evidence be regarded with "cautious optimism" (Todd, 2002: 6). What is important, however, is that there are successful programmes that will promote financial literacy and improved financial behaviour. Of the most significance to this study, are the positive results associated with university-affiliated programmes. That is if financial literacy at the SAMA is unacceptable.

3.5 CONCLUSION

This chapter has described, compared, and tabled the various financial literacy needs, the presentations of financial literacy education and training, and the success of the education and training programmes internationally. From the discussion, it is clear that the need for financial literacy is not only a personal need but also of global importance, because it influences the organisational environment, financial markets, and the social cohesion of communities. From an organisational perspective, the lack of financial well-being can affect the organisation negatively. Employees who are struggling financially can experience financial stress leading to various adverse consequences for organisations such as the SANDF.

Various financial literacy training and education initiatives are presented internationally and nationally to address the need for financial literacy and therefore financial well-being. These presentations are driven, internationally, by various stakeholders ranging from governments to private institutions, individually and in collaboration, and are aimed at improving skills, knowledge, and financial behaviour by addressing broad financial literacy, investment, savings and indebtedness. This is an important recognition of the concepts that constitute financial literacy.

From an SANDF perspective, it is clear that financial literacy education and training of SANDF members pales in comparison to military members in the USA. Financial literacy education and training of SANDF members is limited to the efforts at the SAMA, and hardly any combined efforts with the financial institutions exist. On the positive side, it would seem that the SAMA is the only military academy, and arguably faculty, to include a compulsory financial literacy module for all students.

In studying the impact of financial literacy education and training, the impact assessment of the success of various American presentations is not conclusive. However, according to Todd (2002: 6), we should be "*carefully optimistic*" about the impact of financial literacy education and training. Given the positive impact of university-affiliated education, the SAMA can make a difference. Following an outcome-based approach to financial literacy education and training, financial literacy outcomes have to be identified. These outcomes can only be identified once financial literacy as a concept is accurately defined. Therefore, Chapter 4 will proceed in defining financial literacy and through a conceptual analysis identify the issues and outcomes that constitute financial literacy. These issues and outcomes will then be incorporated in a measurement tool for financial literacy to ensure validity and reliability.

CHAPTER 4

FINANCIAL LITERACY: A CONCEPTUAL ANALYSIS

4.1 INTRODUCTION

The previous chapter (Chapter 3) discussed the context of financial literacy by addressing the need that exists at a global, national, organisational and personal level for financial literacy. Although it was indicated in Chapter 2 that financial literacy is a core competency for officers within the SANDF it only became clear in Chapter 3 as to why it is important. Financial literacy is required within the SANDF to improve the financial well-being of individuals, reduce their stress levels, and limit the negative consequences that personal finances hold for the SANDF as an organisation. Secondly, Chapter 3 addressed the current financial literacy training and educational presentations and studied the scope and impact of such ventures. Financial literacy education and training is a global phenomenon driven by governments and financial institutions separately and collaboratively. These efforts are aimed at improving skills, knowledge, and financial behaviour by addressing broad financial literacy, investment, savings and indebtedness. Specifically in South Africa, learners are financially educated within the Economic and Management Sciences learning area with the option of taking Mathematical Literacy in grades nine to twelve.

Internationally the results of financial literacy educational and training interventions are mixed, but careful optimism is called for. From the SAMA's point of view, it is important to note the positive impact of university-affiliated education as experienced in the USA. The national results of the success of financial literacy education and training is not tested, and therefore this study will contribute by determining a valid and reliable measure of financial literacy. In order for this to be valid and reliable, financial literacy will have to be defined first, and then be analysed to identify the relevant elements that constitute financial literacy. These contextualized elements will then be represented in the measurement tool by means of questions that will test financial literacy. This will be done in the next chapter. The specific research objectives of Chapter 4 are to:

- define financial literacy as a concept by means of a literature review of the existing definitions of financial literacy;

- identify the elements that constitute financial literacy from the derived definition of financial literacy, and contextualise the identified elements.

4.2 DEFINING FINANCIAL LITERACY

To understand the results of any measurement, and to qualify success and failure, one first needs to know what is measured. This study aims to measure financial literacy and therefore we need to define it in measurable terms. An acceptable definition can be derived by scrutinising dictionaries, and dissecting the contextual nature of literacy and literacy education. Distinction will have to be made between financial education and consumer protection, and between ambiguous terms such as economic literacy, financial capability, and financial literacy. Finally, various definitions will have to be scrutinised and analysed in order to identify the most suitable definition for this study. This definition can then be incorporated in a valid and reliable measurement tool.

Currently there is no reference in any dictionary to the term financial literacy, but *literacy* as dated in the 15th century, is defined as the ability to read and write according to the Chambers 21st Century Dictionary (Robinson (ed), 1996: 797). The word *literate* indicates a person being competent and experienced in something specific (Robinson (ed), 1996: 798), for example financials, and *financial*, according to the same dictionary, means relating to finance or finances (Robinson (ed), 1996: 491). Therefore, if combined, the dictionary might suggest financial literacy to be the ability to read and write about finance or finances, and financially literate to be the competent and experienced ability to read and write about finance or finances.

According to Brown*, et al.*, The National Adult Literacy Survey (NALS), The Oxford College Thesaurus (OCT) and the Chambers English Thesaurus (CET) there is, however, more to literacy than just being able to read and write. Brown*, et al.* (2006: 181), and NALS (Vitt, Reichbach, Kent, & Siegenthaler, 2005: 8) suggest a motive to reading and writing when defining literacy as "…using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential". The literate should also understand that which has been read or written, as understanding is implied by literacy as a metaphor. The OCT and the CET supports this implied metaphor in listing the following synonyms for literacy: reading ability, reading proficiency, learning, book learning, education, culture, knowledge, scholarship, erudition, learnedness, enlightenment, articulateness, articulacy. On the contrary, if you are not literate according to Brown*, et al.* (2006: 180) you are morally perceived to be inadequate. However, it is professed that literacy education can make inadequate people literate, and one would assume financial literacy education to be a case in point.

The OECD in the publication *Improving Financial Literacy* (2005: 26) (Lusardi & Mitchell, 2007: 36; OECD, 2005c: 4) addresses the concept of financial education and describes it as: "The process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction, and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being." More concisely, Arnone (Vitt, *et al.*, 2005: 9) defines financial education as "…helps people develop the skills required to make informed choices and to take action that improves their financial well-being".

This process of helping people in a financial context has various names such as: investor or investment education, economic education, financial education, savings education, pension education, personal finance employee education, workplace financial education, consumer education, consumer finance protection education, money management education, retirement savings education and retirement education. The focus, however, is to: "… equip individuals and families with the ability to negotiate the money management issues necessary for them to make self-enhancing life choices" (Vit, *et al.*, 2005: 9). This focus is very similar to that of consumer protection.

However, financial education is not consumer protection and although it overlaps the two should not be confused. Both concepts share the same goals but have different approaches. Financial education provides information, instruction and advice whereas consumer protection provides information by means of legislation and regulation to point out minimum requirements, strengthen protection of consumers, and provide avenues for redress. Financial education, however, has the foremost aim of improving financial literacy.

Financial literacy as the result of financial literacy education is synonymous with financial numeracy (McRae, 2006), financial awareness (Peel & Pendlebury, 1998);

Peel, Pendlebury & Groves, 1991; and Marriott & Mellett, 1991, 1994), financial skills (Marriott & Mellett, 1995, 1996; Brown, *et al.*, 2006), economic literacy, and financial capability. The latter two of these synonyms require scrutiny, because there are numerous people that prefer using these terms.

Economic literacy as a synonym for financial literacy requires the skills to function effectively as consumers, producers, savers, investors, and responsible citizens. The skills include economic reasoning, problem solving, decision making, and analysing real life situations (Black, 2006: 49). Dahl of the Federal Reserve Bank of Minneapolis explained that economic essence involves understanding the choices, or trade-offs, that arise from allocating scarce resources. This involves the understanding of concepts such as: opportunity cost, marginal analysis, supply and demand, prices and their relationship with inflation, money supply and labour (Black, 2006: 49). However, because of its economic focus, it is restrictive and not what is required in this study.

Financial capability is the term preferred in the UK (Atkinson, McKay, Kemson & Collard, 2006: 1) and covers four domains: managing money, planning ahead, choosing products, and staying informed. Financial capability is defined by the Financial Services Authority (FSA) (2005: 13) as follows: "Financially capable people are able to make informed financial decisions. They are numerate and can budget and manage money effectively. They understand how to manage credit and debt. They are able to assess needs for insurance and protection. They can assess the different risks and returns involved in different saving and investment options. They have an understanding of the wider ethical, social, political and environmental dimensions of finances." Financial capability can be summarized as: "… a set of financial knowledge, skills, and behaviours among individuals" (Orton, 2007: 7).

Financial capability, according to Van den Hende, is a more appropriate term than financial literacy because it includes attitudes, skills, knowledge, and understanding. It also embraces the psychological and behavioural dimensions of motivation and the confidence to engage in personal financial management. Confidence is deemed to be essential in association with a broad understanding of financial issues, as predictors to successful financial outcomes (Braunstein & Welch, 2002: 452) (Brown & van den Hende, 2006: 23, 28). Therefore, financial capability as a term is quite acceptable for the purposes of this study, and if proved to be more comprehensive than the definition of financial literacy, it should be the topic of the measurement. A suitable definition of financial literacy can be derived by studying some of the existing definitions, as illustrated in Table 4.1.

Table 4.1: Definitions of Financial Literacy

Source	Definition
Common Wealth Bank Australia (National Foundation for Education Research in the UK in 1992)	The ability to make informed judgements and to make effective and responsible decisions about the use and management of money.
Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) 1999	Consumer and financial literacy is the application of knowledge, understandings, skills and values in consumer and financial contexts and the related decisions that impact on self, others, the community and the environment.
Mason and Wilson (2000)	Financial literacy denotes one's understanding and knowledge of financial concepts and is crucial to effective consumer financial decision making; or Financial literacy could therefore be defined as an individual's ability to obtain, understand and evaluate the relevant information necessary to make decisions with an awareness of the likely financial consequences.
US Financial Literacy and Education Commission	The ability to make informed judgments and to take effective actions regarding the current and future use and management of money.
Beverly and Burkhalter (2005)	The knowledge and skills related to money management.
Jump$tart Coalition (USA) (2007)	Financial literacy is the ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security.

The first important factor to consider from this table is that the definitions of financial literacy do not exclude anyone. Nonetheless, although not included in this table there are definitions of financial literacy specifically addressed at managers and business people that we can briefly reflect on. According to Marriott and Mellett (Brown, *et al.*, 2006: 181) financial literacy is "… the manager's ability to understand and analyse financial information and act accordingly". Brown, *et al.* (2006:179) support this definition in stating that financial literacy will "… help the business people to function efficiently at work because they are able to evaluate the information needed to make decisions that have financial ramifications or consequences".

The second important issue to note about the definitions of financial literacy is that they imply a continuous process. Financial literacy is not a final state of events. This continuity is acknowledged and collaborated by the statements by Browne (2001: 34), Brown*, et al.* (2006: 182), and the Jump$tart Coalition that: “Financial literacy is not an absolute state; it is a continuum of abilities that is subject to variables such as age, family, culture, and residence. Financial literacy refers to an evolving state of competency that enables each individual to respond effectively to ever-changing personal and economic circumstances.” Testing financial literacy would, therefore, be similar to a balance sheet, and indicate capability compared to requirements at a specific point in time.

Thirdly, it is important to take note of the consistent themes of knowledge, skills and an ability to take action in a financially effective manner. However, as suggested earlier, most of these definitions do not embrace the psychological and behavioural dimensions of motivation and confidence to engage in personal financial management explicitly, as implied by financial capability. Hence, the following definition of financial literacy is proposed, as defined by Vitt *et al.* (2005: 7), Vitt (2006: 14): “Personal financial literacy is the ability to read, analyse, manage, and write about the personal financial conditions that affect material well-being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy.”

Similar to the definition of literacy this definition includes reference to the ability to read and write, which also implies understanding. Similar to the definition of financial capability this definition refers to ability that entails knowledge, skills, aptitude, behaviour and the confidence to be financially literate. It also suggests the ability to respond competently, which means that the financially literate have the behavioural demeanour to prove being capable. Therefore, there is no clear distinction between financial literacy and financial capability, and we can focus on the definition of financial literacy.

Lastly, the only point of critique against this definition is by Balati (2007: 7), who questions the absence of the social context or social capital. According to Balati activation, within the social context, of ability is necessary and should be included. With the exception of the social context, financial literacy, as defined by Vitt*, et al.*, will be accepted as the working definition for this study and will now be dissected to identify and contextualise the core elements of financial literacy.

4.3 IDENTIFICATION AND CONTEXTUALISATION OF CORE ELEMENTS OF FINANCIAL LITERACY

In the previous section a dictionary clarification of literacy was used as a point of departure together with the various synonyms for financial literacy to identify a suitable definition of financial literacy as a concept. Financial capability, as one of the synonyms for financial literacy was claimed to be more acceptable, but was proved to be similar to the definition of financial literacy as defined by Vit*, et al.* (2005). The issue of what the correct term is can finally be resolved by comparing the core elements of financial literacy and financial capability. Dissecting the definition of financial literacy will also aid the process of contextualising the core elements of what constitutes financial literacy. The core elements are identified as:

- the ability to read, analyse, manage and write about the personal financial conditions that affect material well-being;
- the ability to discern financial choices;
- to discuss money and financial issues without (or despite) discomfort;
- to plan for the future;
- to respond competently to life events that affect everyday financial decisions, including events in the general economy.

These core elements of financial literacy when compared to those of financial capability indicate no clear distinction. The elements of financial capability, as identified by Orton (2007: 7), are financial knowledge and understanding, financial skills and competence, and financial responsibility. *Ability* as incorporated in the financial literacy definition encompasses knowledge, understanding, skills and competence, and *the ability to discern financial choices* and *planning for the future* illustrates responsibility. Therefore, the definition of financial literacy as indicated by Vit*, et al.* (2005) is now finally accepted as the working definition to be scrutinized, contextualised and operationalized. Although five elements are identified the definition firstly focuses on financial issues, and secondly, on the ability to deal with them, an ability that necessitates understanding, knowledge, skills, attitude and behaviour.

4.3.1 Financial Issues

The first element of the financial literacy definition is "… the ability to read, analyse, manage and write about the personal financial conditions that affect material well being…" Vitt, *et al.* (2005: 9) elaborate on the first element by stating that: "a financially literate individual understands his/her relationship to money, and can read, discuss, and communicate about personal financial issues". Clearly, the first requirement of being financially literate is that the financially literate can read and write. Secondly, they should be able to read, analyse, manage, and write about financial issues, and specifically the issues that affect their financial well-being. But who are *they* and what are their financial issues?

In the context of this study *they* are young salaried officers in the first year of higher education. The majority of these students are Military Skills Development Students (MSDs) that joined the SANDF for a two-year period after which only some of their contracts will be extended. On average, they have at least one year's work experience in the SANDF, and are 20 years old. Therefore, all of them now have been earning a salary for at least one year, have a savings account into which their salaries are paid, they stay in free military accommodation, do not have to pay for their studies or textbooks, and their expenses are mostly personal in nature. In 2007 they earned an annual average salary of R41 145, and the MSDs receive a taxable bonus of R18 000 when their contracts expire.

The exact financial issues that affect the financial well-being of the subjects of this study can be determined by studying the general requirements of being financially literate, then focusing on what 18-24-year-olds need to know by identifying the outcomes envisaged for final year learners at school level, and finally focusing on the functional requirements set for these officers by the SANDF. These financial issues are important to identify because their inclusion in the measurement tool will ensure validity and reliability.

The earliest evidence of what is generally required to be financially literate is in the USA in the early 20th century. The textbook *Hamilton's Essentials of Mathematics*, published in 1917 and 1920 was written for grades 2 to 8, and explained simple financial concepts such as earning money, paying bills, establishing cash and savings accounts, paying taxes, purchasing insurance, and understanding the federal budget (National Endowment for Financial Education, 2002: 7).

Since then various authors and organisations have contributed to determining what people should know to be financially literate, in other words, what the financial issues essentially are. A study conducted by Hira and Loibl (2005: 174) identified the four areas of financial literacy to be retirement needs, investing money, providing for the future, and managing credit use. Fox*, et al.* (2005: 197) identified budgeting, and home buying and home ownership as equally important. Home ownership, according to Greenspan (2002: 37), is one of the three principal means of household asset accumulation that should be covered in financial education. The other two being small business ownership and savings. The financial issues as briefly highlighted by Vit*, et al.* (2005: 9) are: knowledge of banking and credit, money management, understanding risk and the need for protection against unforeseen emergencies, plans for major life events, and saving and investing for the future.

There are also some institutions with more specific financial issues that should be addressed. The Centre for American Nurses (2006: 9) identified the key areas for nurses to be: risk management, disability coverage, cash management, investment management, tax planning and estate planning. The Coalition for Consumer Bankruptcy Debtor Education ran an 18-month project, Making Sense of Cents, to train debtors who had defaulted on payments and filed bankruptcy under Chapter 7 or 13 of the Bankruptcy Code (Wiener*, et al.*, 2005: 350). This programme consisted of seven units that covered topics such as: Money Thoughts; Planning and Goal Setting; Creating Financial Plans; Sales, Ads, Scams, and Other Traps; Credit Usage; The Future; and Resources. Some banks such as South Shore Savings Bank and Columbia Bank included topics such as: how students should conduct themselves in professional environments; and avoiding credit and debt problems (Holliday, 2007:47).

As expected, the general financial issues as discussed above do not differ from those envisaged by the school of thought on financial capability. The Adult Financial Capability Framework, developed by the Basic Skills Agency and the FSA (2005:14) (Orton, 2007: 7), identified three broad elements of financial capability as financial knowledge and understanding, financial skills and competence, and financial responsibility. Financial knowledge and understanding are defined as "… the ability to make sense of and manipulate money in its different forms, uses, and functions. Financial knowledge and understanding allows people to acquire the skills they need to deal with everyday financial matters and make the right choices for their needs". Financial skills and competence is the: "… ability to apply knowledge and understanding across a range of contexts including both predictable and unexpected situations. Financial skills and competence makes available to people the necessary skills to allow them to plan, monitor, manage, and resolve any financial problems or opportunities". Financial responsibility is the: "… ability to appreciate the wider impact of financial decisions on personal circumstances, the family and the broader community, and to consider the social and ethical issues. Financial responsibility enables people to understand and appreciate their rights and responsibilities. They understand the need, and have the right skills and attitudes to plan, analyse, decide, evaluate and monitor financial decisions and choices. They understand the various sources of advice and guidance available".

The Baseline Survey conducted by the FSA in Britain summarized these financial issues neatly in laymen terms as: the ability to make ends meet; to keep track; to plan ahead; to choose appropriate products and to stay informed. What should be added is that the ability should be applied at the right time. There is an appropriate time for each of these financial issues to be addressed.

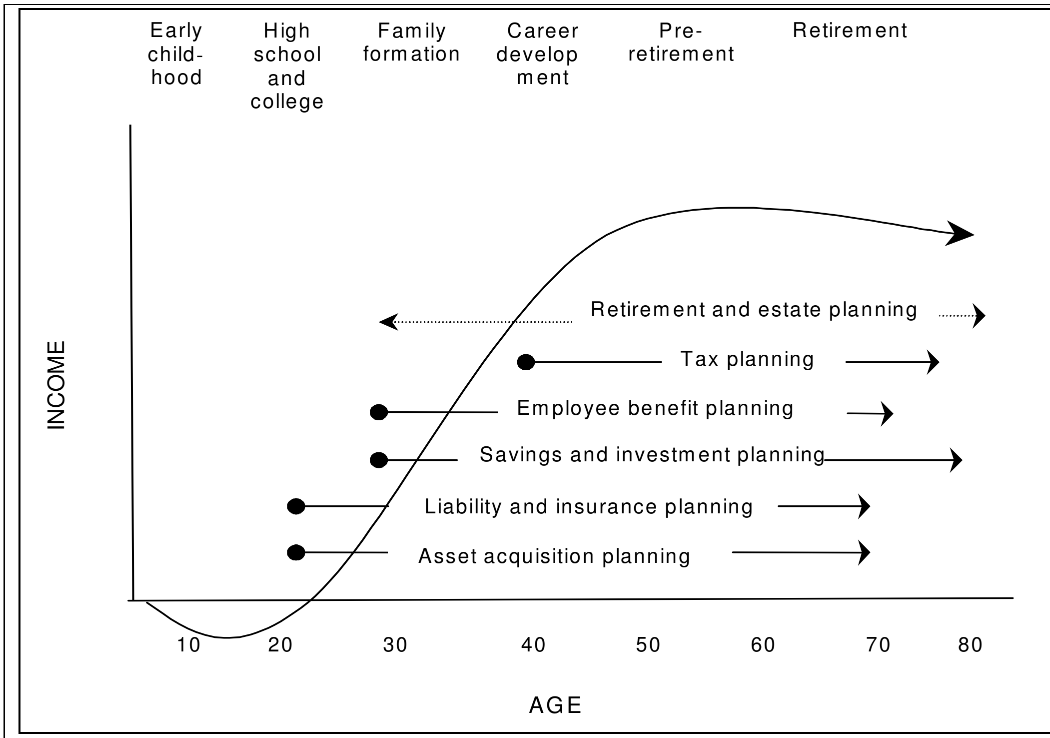

Figure 4.1: The traditional personal financial planning life cycle

Source: Gitman, L.J. and Joehnk, M.D., 2002: 15.

The general financial issues as illustrated by the various authors and organisations can be illustrated on a time line, as part of a life cycle. In general, the life cycle for financial planning starts at the age of 18, as illustrated in Figure 4.1, during high school and college according to Gitman and Joehnk (2002: 15). During this stage asset acquisition and liability and insurance planning should take place. From the age of thirty, during family formation, savings and investment, employee benefit planning, as well as retirement and estate planning should take place. Tax planning usually occurs during the career-planning phase at the approximate age of forty. Our focus, however, needs to be on the financial issues and needs of the age group 18-24 studying at the SAMA. Prestridge (UK) and Potgieter (RSA) can be quoted on the perceived financial issues pertaining to 18-24-year-olds while the research done by Atkinson and Kemson will shed some light on the actual needs of 18-24-year-olds.

Prestridge (2001: 435), one of Britain's leading personal finance journalists, sees the late teens and early twenties as footloose and fancy-free. His advice should be seen within the British context where for example 75% of tuition fees are paid by government. According to him, there are four steps for this age group, with the first step focusing on financing further education. The next step is funding of living costs and the third step is applying for grants, sponsorships, and incentives. The fourth step is aimed at those people who took on jobs instead of studying, and to them his advice is to save for holidays and nothing more.

The advice for people in their twenties is to pay off debt, try to budget, and to ensure that you have a bank account with low charges that earns some interest. Further investment advice is to build an emergency fund, to open a savings account to build deposits for bigger investments, and to start thinking about pensions. Risk provision should be made by considering critical illness cover and/or income replacement, and in the case of there being dependants, life assurance should be considered (Prestridge, 2001: 435).

Potgieter (2004: 66) from South Africa principally agrees with Prestridge by indicating that the twenties are earmarked by study loans and motor vehicle financing. With the motor vehicle comes short-term insurance, and with the debt comes life insurance to cover medium to long-term debt, a medical scheme, and provision for disabilities. From an investment point of view, the twenty-year-old, according to Potgieter, should start saving by means of annuities and mutual funds, and also draw up a will. However, these are only perceived to be the financial needs of 18-24-year-olds in

South Africa, and unfortunately cannot be supported by real evidence. There is, however, international research evidence on the real financial needs of 18-24-year-olds.

Atkinson and Kemson did some comprehensive research for the Banking Code Standards Board (UK) in 2004, which reflected on the financial needs of young adults by looking at their financial behaviour. Young British adults were found to have average literacy skills, below average numeracy skills and below average financial literacy skills (Atkinson & Kemson, 2004: 6).

Evidently, the confidence level of these young people is low when it comes to purchasing new products, and adding their low level of risk-averseness and the fact that only 35% of the 21-24 age group are financially literate, they are vulnerable to mis-selling and mis-buying. Nearly 50% of young people age 18-24 agreed in the DTI Survey, as quoted by Atkinson and Kemson, that they are impulsive spenders and buy things that they cannot afford. Of this age group 85% agreed that credit encourages buying things that you do not need, and two out of ten young people never considered how they would repay a loan that is applied for (Atkinson & Kemson, 2004: 12).

People aged 18-24 have a high predisposition towards borrowing and drawing on revolving credit, their overdraft use is frequent, and their risk of over-borrowing and getting into financial difficulties is increasing (Atkinson & Kemson, 2004: 6). The DTI survey in 2002 (Atkinson & Kemson, 2004: 6) indicated that 50% of the 18-24 age group had an overdraft facility, and 20% were actually overdrawn. Credit card accounts were held by 34% of which 19% owed money.

Younger adults hold fewer accounts than older people do. Only 19% of the 21-24 age groups actually had more than three savings or investment products. The age group 16-24 illustrated the following investment profile: stocks and shares (5%), unit trusts (1%), premium bonds (6%). Young people, living on low income, are more likely to make use of a basic bank account without overdraft facilities. Research has found that young people often complain that banks do not tell them how debit cards work or give them the correct information. Collard, according to Atkinson and Kemson (2004: 10), found that 16% of 21-24-year-olds regretted an investment in a savings or investment product in the past five years.

The above results of the Atkinson and Kemson research clearly identified debt and investment management as the main financial needs and issues of 18-24-year-olds, that relates well with the research done by the FSA (2004b: 28-29) on the specific information needs of 18-24 year olds. The specific information requirements identified were:

- buying a car and things that can not be afforded;
- getting a loan and a credit card;
- buying on hire purchase;
- moving out of the parental home;
- buying a house;
- saving some extra earnings, student loan/ inheritance/ gift;
- going to university;
- what to do with a student loan;
- controlling debt;
- claiming tax back;
- and saving for the future.

We can now summarise the financial issues to be budgeting, debt management, and investment management. But are young people (18-24) educated to complete these activities? In order for us to answer this question, we will have to scrutinize what the envisaged outcomes are for school leavers and whether they correlate with the identified financial issues. Once again, we will begin by having a look at the international outcomes for financial literacy education and then identify the South African educational outcomes contributing towards financial literacy. These outcomes will indicate the financial issues perceived to be important, and these financial issues can then be included in the measurement tool.

At the Financial Education Summit of 2005 the outcomes of financial literacy education was discussed at length by all concerned. At the summit Johnston (2005) indicated that financial education programmes should be focused on important life planning aspects such as savings, debt and insurance or pensions. Programmes should also be oriented towards financial capacity building, targeted on specific groups and personalized where necessary. The critical areas in which financial education can play a role were identified to be:

- financing home ownership;
- financing higher education;

- financing retirement security;
- making people more astute when saving and investing;
- protecting individuals against those who prey on the ignorance and greed of the unwary.

These critical areas were merely suggestions, and the question remains as to what schools actually teach learners in order to be financially literate. Because there is no financial literacy module presented within the South African school environment, brief reflection of the outcomes for financial literacy education envisaged by the Americans and New Zealanders will initiate this discussion. The Americans reflect the financial literacy approach and the New Zealanders follow the financial capability school of thought on financial education.

The outcomes or required knowledge in the USA is indicated by the national standards identified by the Jump$tart Coalition (2002: 7-13), and the supplementary maths curriculum that teaches financial management skills to students in grades K-12. The national standards focus on the skill and knowledge required by the individual to take responsibility for personal well-being. These standards have increased from four to six major categories since the 2002 National Standards were drawn up and are: Financial Responsibility and Decision Making; Income and Careers; Planning and Money Management; Credit and Debt; Risk Management and Insurance; and Saving and Investing. In measuring the financial literacy, broadly speaking, an American financially literate high school graduate should know how to:

- Find, evaluate, and apply financial information.
- Set financial goals and plan to achieve them.
- Develop income-earning potential and the ability to save.
- Use financial services effectively.
- Meet financial obligations.
- Build and protect wealth.

The supplementary maths curriculum, as developed in a partnership between the US Treasury Department, the Jump $tart Coalition and the Center for Economic Education teaches financial management skills to students in grades K-12 (Moorer, 2001: 18). Topics covered are income; savings; taxes and budgeting, and these lessons have been made available to approximately 110 000 maths teachers in 16 000 school districts since 2001. Maths teachers are provided with a multimedia curriculum with four lessons which focus on 12 principles that every young person should know:

- map your financial future with financial goals and plans;
- do not expect things are for free;
- high return is equal to high risk;
- know your take home pay;
- compare interest rates;
- pay yourself first;
- money doubles by the rule of 72;
- your credit past is your credit future;
- start saving young;
- stay insured;
- budget your money;
- do not borrow what you cannot repay.

In New Zealand the ANZ financial literacy framework, as discussed in "Financial Literacy in Schools" (ASIC, 2003: 10-11), dictates the various key skills and areas of knowledge that are important to final-year learners. The ANZ framework adapted the headline categories used by the Adult Financial Literacy Advisory Group in the UK and are as follows:

- Mathematical literacy and standard literacy – illustrating essential mathematical, reading and comprehension skills.
- Financial understanding – illustrating an understanding of what money is and how it is exchanged; and understanding where money comes from and goes to.
- Financial competence – understanding the main features of basic financial services; understanding financial records and appreciating the importance of reading and retaining them; attitudes to spending money and saving; and an awareness of the risks associated with some financial products and an appreciation of the relationship between risk and return.
- Financial responsibility – the ability to make appropriate personal life choices about financial issues; understanding consumer rights and responsibilities; and the ability and confidence to access assistance when things go wrong.

The New Zealand school curriculum for the first 10 years of school covers income and money management, and financial planning and wealth. The topics covered are indicated in Figure 4.2. The outcomes identified for financial literacy education in the

USA and New Zealand were specifically developed to improve financial literacy and are a comprehensive indicator of the view of international educationalists on what school leavers should know. In South Africa, unfortunately, the development of the educational outcomes that will now be discussed only have financial literacy as a by-product.

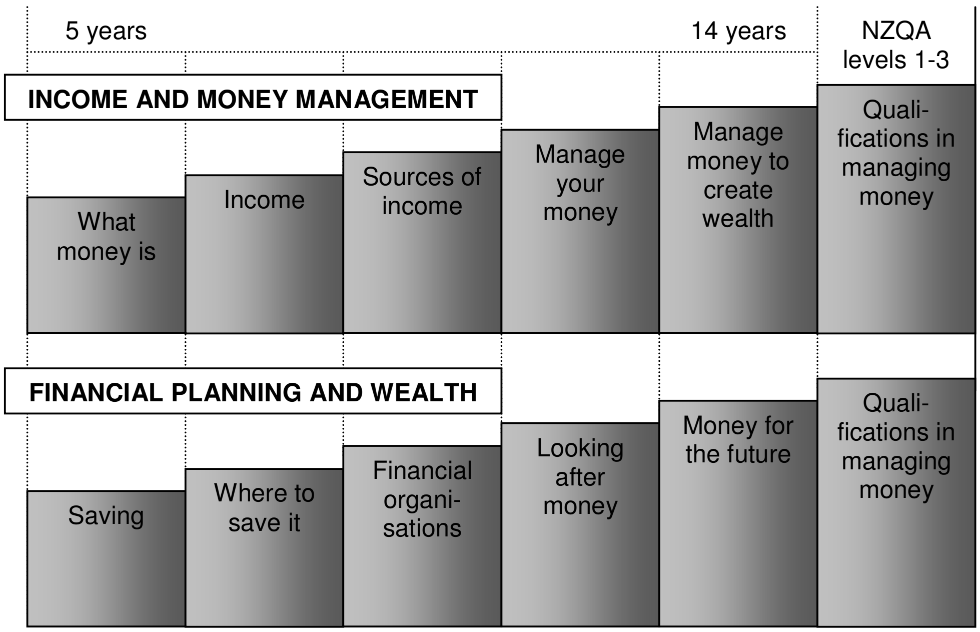

Figure 4.2: The New Zealand financial education curriculum
Source: Taylor, 2006: 20.

In South Africa, by the end of grade 12, some learners may have experienced the Economic and Management Sciences learning area, and some Mathematical Literacy. These two presentations are the only ones within the school environment that may improve financial literacy. The Economic and Management Sciences (EMS) learning area, as discussed in Chapter 3, involves the study of private, public or collective use of different types of resources in satisfying people's wants and needs, while reflecting critically on the impact of resource exploitation on the environment and people. Additionally it deals with the nature, processes and production of goods and services, the SA economy and socio-economic systems in different countries. This learning area also includes investment and financial management and planning skills for private, public or collective ownership. Lastly, the entrepreneurial skills and knowledge needed to manage human lives and environments are covered (RSA, 2002b: 27). This learning area can be complemented in the grade 10 year with Mathematical Literacy, a derivative of pure mathematics.

The aim of Mathematical literacy is to: "… provide learners with the awareness and understanding of the role that mathematics play in the modern world" (RSA, 2003: 9). The aim is also to allow General Education and Training Learners to become numerate consumers of mathematics, by taking Mathematical Literacy as a fundamental subject in Further Education and Training (grades 10-12). This subject should: "… enable the learner to become a self-managing person, a contributing worker and a participating citizen in a developing democracy" (RSA, 2003: 10).

In order to achieve the above scope, Mathematical Literacy includes the learning outcome of: "…the use of numbers with understanding to solve real-life problems in different contexts including the social, personal and financial" (RSA, 2003: 10). This learning outcome is assessed by determining if the learner is able to:

- "apply mathematical knowledge and skills to plan personal finances inclusive of: income and expenditure; simple interest problems and compound interest situations capitalized annually, half-yearly, quarterly and monthly, including calculation of either rate, principal amount or time when other variables are given or known". (Grade 10)
- "investigate opportunities for entrepreneurship and determine profit and sustainability by analysing contributing variables, inclusive of: specifying and calculating the value of income and expenditure items; determining optimal selling prices; estimating and checking profit margins". (Grade 11)
- "analyse and critically interpret a wide variety of financial situations mathematically, inclusive of: personal and business finances; the effects of taxation, inflation and changing interest rates on personal credit, investment and growth options; financial and other indicators; the effect of currency fluctuations; critical engagement with debates about socially responsible trade". (Grade 12).

As indicated above the aim of Mathematical Literacy is not the same as that of financial literacy, but will assist in enabling a person to read, analyse, manage, and write about the personal financial conditions that affect material well-being. The learning outcomes do, however, make a contribution to what the financial issues are for young South Africans and should be incorporated in the measurement tool.

Additionally the requirements set by the SANDF as a functional requirement, should also be included. Functionally the young soldier should be able to apply knowledge in managing the financial resources of the SANDF.

The knowledge required is prescribed by Unit Standard no 114873 on level 5: Apply basic financial procedure to PFMA principles, and is accredited with three credits (SAQA, 2004:1). The purpose of this unit standard is: "… qualifying learners who will be able to assist in applying internal financial administration. They will understand the budgetary process and assist in preparing the budget. They will understand the PFMA principles and apply the rules and regulations in the administration of office funds. They will keep financial records of income and expenditure accurately". The learning that should be in place for taking up this unit standard is assumed competency in Mathematical Literacy and Financial Literacy at National Qualification Forum (NQF) Level 4. The specific outcomes can be summarized as having the ability to manage income and expenditure, doing financial planning and managing a budget.

In summary first-year SAMA students should have "…the ability to read, analyse, manage and write about the personal financial conditions that affect material well being…" to be financially literate. The financial conditions, or rather financial issues, are their prescribed functional outcomes as officers, the outcomes envisaged by the mathematical literacy module and/or EMS learning area, the international financial literacy educational outcomes, the financial needs as noted by Atkinson and Kemson, and the perceived financial issues identified by various authors for 18-24-year-olds. In order for these students to address the financial conditions/issues, they should have the ability to make effective decisions or rather to discern financial choices. This ability will also allow them "… to discuss money and financial issues without (or despite) discomfort …", "… to plan for the future …", and "… to respond competently to life events that affect everyday financial decisions, including events in the general economy".

4.3.2 Ability

Ability depends on knowledge and skill levels, but successful decision-making, financial discussions, planning, and competent response to life events depends on more than just knowledge and skills. The financially literate individual will have to be able to apply ability in predictable and unexpected situations and with an appreciation for the wider impact of financial decisions on personal circumstances, the family, and the broader community (Orton, 2007: 7). A quite acceptable framework is proposed by Roy Morgan Research (2003: 73) for Adult Financial Literacy that illustrates the abilities required for being adequately financially literate. Adequate financial literacy entails essential mathematical, reading and comprehension skills, financial understanding, financial competence and financial responsibility. The framework lists the basic requirements and the advanced competence that is required with regard to abilities such as knowledge and understanding, behaviour, attitudes, perceptions and awareness that relate to financial literacy. The framework is briefly discussed.

The suggested framework identified, firstly, essential mathematical, reading and comprehension skills as being important. This correlates with the requirement of our first element of the Vitt*, et al.* definition of financial literacy and needs no more elaboration with regard to the basic requirements. It is important, however, to mention the advanced competence requirement of the ability to understand compound interest and averages (Roy Morgan Research, 2003: 73).

Secondly, as part of financial understanding, there is the requirement of understanding what money is and how money is exchanged. Basically, individuals should know the range of payment options and its advantages and disadvantages. The advanced competence requires advanced understanding of the implications and key features of credit, interest rate comparisons, securitization, default, guarantees and credit recording (Roy Morgan Research, 2003: 73).

Thirdly, also as an element of financial understanding, the individual should have an understanding of where money comes from and goes. The basic requirement in this case is the ability to read a pay slip and to recognize household expenses and regular financial commitments. The advanced competence is to understand the financing of different organisation types (Roy Morgan Research, 2003: 73).

The fourth to ninth elements of the framework relate to financial competence. The basic requirements of understanding the main features of basic financial services include awareness of fees and the trade-off between fees and returns, as well as shopping around. The advanced competence is to make strategic use of banking, superannuation, various investments, and risk insurance products to maximize personal financial advantage (Roy Morgan Research, 2003: 74). With regard to superannuation the individual basically needs to know what it is for, how a personal contribution can be made, and be able to confirm that the employer is making compulsory contributions. The advanced competence illustrates the ability to check superannuation records, to determine acceptable level of insurance and to understand tax implications (Roy Morgan Research, 2003: 74).

Understanding mortgages requires basic understanding of interest rates, and terms and conditions. Advanced competence will be illustrated through the acquisition of investment property (Roy Morgan Research, 2003: 74). The fourth financial competence is the ability to understand financial records and appreciate the importance of reading and retaining them. The basic requirements are therefore to be able to check accuracy and to understand the need of keeping records. The ability to read, to reconcile, and understand financial records illustrates advanced competence (Roy Morgan Research, 2003: 75).

The basic requirements for an attitude to spending and saving are an understanding of the purpose, need, and options for saving, and an understanding of how to use budgets to plan and control spending. The ability to pay as late as possible and earn interest as long as possible is an illustration of advanced competence. The final financial competence is an awareness of the risks associated with financial products and the relationship between risk and return. Basic requirements for this are awareness of the risks of investments, understanding insurance, and the value of diversification. The advanced competence is the ability to identify and manage risk, and an understanding of exchange rates, maturity, and guarantees (Roy Morgan Research, 2003: 75).

Financial responsibility is illustrated by an individual who has the ability to make appropriate personal life choices about financial issues. This individual understands the rights of consumers and their responsibilities and has the ability and confidence to access assistance when things go wrong. The basic requirements for making appropriate choices are an understanding of maturity and the difference between good and bad debt. It is also the ability to prioritize spending and act appropriately when income drops. An advanced competence is illustrated when financial implications are assessed. The individual who understands consumer rights and responsibilities also has a basic awareness of dispute resolutions, and illustrates advanced competence when that individual checks credibility of service providers. The basic requirements for having the ability and confidence to access assistance are an understanding of the regulatory environment and how to access assistance.

At the advanced competence level the individual will illustrate an understanding of regulation and dispute resolving, as well as how to assess financial advice and information (Roy Morgan Research, 2003: 76)

The above-mentioned abilities of the individual to discern financial choices, to discuss money and financial issues, to plan for the future, and to respond competently can be summarized by quoting Widdowson and Hailwood (2007: 37). According to them, the individual will need basic numeracy skills such as the ability to calculate returns on investments, the interest rate on debt, and basic arithmetic ability. The individual will also have to understand the benefits and risks associated with particular financial decisions such as spending, borrowing, leverage and investing. Ability is required to understand basic financial concepts, including the trade off between risk and return, the main attributes of different types of investments and other financial products, the benefits of diversification, and the time value of money. The financially literate individual will illustrate the capacity to know when to seek professional advice and what to ask, and the ability to understand the advice given by professional advisers (Widdowson & Hailwood, 2007: 38). Ideally, all these elements should be included in a measurement tool of financial literacy.

From the discussion of the framework and the summary by Widdowson and Hailwood on the basic requirements and advanced competence needed to be financially literate, it is important to note that ability and competency hints on behaviour. This is an aspect that has not been emphasized thus far, but is of fundamental importance. For the individual to be classified as financially literate he/she should illustrate financially literate behaviour. Therefore, the behavioural aspects should be included in a measure of financial literacy. However, before we define what is suitable behaviour, note should be taken of the different financial behaviours of the different personality types. The personality types have different approaches to money, and therefore will act differently. For instance, the optimist will believe in the future and not start to save as early as possible. Is this necessarily incorrect behaviour? What is important about this typology is that the researcher could be prejudiced towards one of the groups. This implies that certain behavioural and attitudinal characteristics might be seen as not being financially capable.

The NOP Research Group did some research for the FSA on young people, aged 15-19, and financial matters in 2004 that addresses the behaviour and attitude of young people towards money (FSA, 2004a: 17). According to them young people see money as important for socialising and creating an image. The study identified four financial behavioural categories for young people: Conservatives, Hedonists, Mixed and Aspirers. Each of these groups summarizes the expected behaviour and attitude of young people towards money and financial issues and this summary is illustrated in Table 4.2.

Table 4.2: Typology of Financial Behaviour and Attitudes

Group: Outlook	Attitudes to money and financial matters	Behaviour to money and financial matters
Conservatives • Future focused (short and long term) • Cautious with money	• Debt averse • Associated with parental philosophy • Save for a rainy day	• Plan and control spending • Budget their income • Save, with or without purpose
Hedonists • Present focused • Fun seekers • Live for today • Optimistic	• Debt is inevitable • No guilt about spending • Lack respect for money	• Spend, spend, spend • Little/no saving
Mixed • Combine elements of each parent's philosophy where these differ • Present and future focus	• Polarised between saving and spending • Some guilt about spending	• Spend and save
Aspirers • Have their future mapped out • Anticipate and aspire to material success, prepared to work and plan for this • Entrepreneurial	• Money perceived as a way of investing for the future • Entrepreneurial • Interested in financial matters and quite capable	• Currently display conservative behaviour • Planned and controlled • Spending may be incurred as an investment for the future

Source: FSA, 2004a: 17.

Although the typology on financial attitude and behaviour in the table cautions against prejudice, it remains important to complete the discussion on the definition of financial literacy by identifying acceptable behaviour that constitutes financial literacy. Acceptable financial behaviour will form an important part of determining the validity and reliability of the measuring instrument. An illustration of financial literate behaviour is found in a study that was done by Hilgert and Hogarth (2003: 309).

Table 4.3: Financial Behaviour and Product Variables used to Analyse Cash-Flow Management, Credit Management, Saving and Investment Practices

Financial behaviour	Financial product
Cash-flow management	Have cheque account
Pay all bills on time	Have a credit card
Reconcile chequebook every month	Have savings account
Use a spending plan or budget	Have emergency fund
Have financial recordkeeping system or track expenses	Have certificates of deposit
Credit Management	Have any retirement
Pay credit card balances in full each month	plan/account
Review credit reports	Have IRA/Keogh
Compare offers before applying for a credit card	Have any investment account
Saving	Have mutual funds
Save or invest money out of each pay cheque	Have annuity or pension plan
Save for long-term goals such as education, car, or home	Have public stock
Investment	Have bonds
Have money spread over different types of investment	Own home
Calculated net worth in past two years	
Participated in employer's 401(k) retirement plan	
Put money into other retirement plans such as an IRA	
Other financial experience	
Bought a house	
Do own taxes each year	
Often or always plan and set goals for financial future	
Refined mortgage or loan for home improvements	
Read about money management	

Source: Hilgert and Hogarth, 2003: 310.

The aim of the study was to determine the connection between knowledge and behaviour, and in order to do so they identified four main financial management activities: cash-flow management, credit management, savings, and investment. Within the main activities certain behaviours and also financial products were listed as indicators. Eighteen financial-management behaviours and 13 financial products were identified. The financial management behaviours ranged from very basic (paying bills on time) to more sophisticated (diversifying investments). By no stretch of the imagination is this a comprehensive list of financial behaviour, but it provides a comparable international standard. The table also highlights the behavioural items that influence credit scoring by referring to viewing credit reports.

Credit scoring determines the availability of credit as well as the cost of credit, and both availability and cost of credit affects personal wealth. The elements included in credit scoring normally assesses the behaviour of individuals with specific reference to how often credit payments are made, loans defaulted, and number of payments per year (Vojtek & Koĉenda, 2006: 15). The best known (and South African used) method for credit scoring is the Fair Isaac Company (FICO) score, which is a method developed by Fair Isaac & Co to evaluate credit worthiness. The FICO model produces a score between 300 and 950, of which anything below 560 is deemed too risky. The model according to Ferebee (2009: 1) has five main elements and is weighted as follows:

- Past payment history (about 35% of score) – the fewer the late payments the better. Recent history counts for more.
- Credit use (about 30% of score) – too many credit cards can bring down the score, however, closing accounts can sometimes do more harm than good.
- Length of credit history (15% of score) – the longer the account has been open the better the score. Opening new accounts and closing seasoned accounts can bring down a score a great deal.
- Types of credit used (10% of score) whenever a person uses a finance company account, it may lower the score. Bank or department store accounts are better accounts to open.
- Inquiries (10% of score) – multiple inquiries can be a risk if several cards are applied for or other accounts are close to their limit. Multiple mortgage or car inquiries within a 14-day period are counted as one inquiry**.**

This breakdown is important because it indicates the importance of behaviour and identifies acceptable behaviour. Ferebee (2009: 2) also identified other factors that affect your FICO score such as: number of outstanding balances; balances owed vs. credit available or high credit; number of balances opened in the last 6 months; too many revolving accounts; too few revolving accounts; excessive credit inquiries; delinquencies; too many accounts opened within the last twelve months; short credit history; number of 30, 60, and 90 day late payments; public records that include judgments, tax liens or bankruptcies; length of credit history; recency of any slow pay history; balances on revolving credit are near the maximum limits; and no recent credit card balances.

Although the products important for credit assessment are not included in Table 4.3 they should not be discarded. The products included, however correlate with the financial services identified by Aldlaigan and Buttle (2001: 233) in their study of a person's involvement with products (PII), and consumer involvement profile (CIP). The services identified were: current account, savings and investments, personal loans, mortgage services, insurance services, and travel services. As a result of what has been discussed so far the following financial products are identified as essential products that the subject for this survey should have: testament/will; budget in writing; list of assets; financial records for tax purposes; and savings.

In summary first-year SAMA students should have "…the ability to read, analyse, manage and write about the personal financial conditions that affect material well being…" to be financially literate. Ability refers to having the knowledge, acceptable behaviour, attitude, and financial products to address financial issues discussed in the previous section. Adequate financial literacy entails essential mathematical, reading and comprehension skills; financial understanding; financial competence; and financial responsibility. The study by Hilgert and Hogarth identified financial behaviours and financial products that are indicators of financial activities such as cash-flow management, credit management, saving and investment practices that reflect on financial literacy. These financial behaviours and products should therefore be included in the development of the questionnaire as they can provide useful information and indicate a level of acceptability.

4.4 CONCLUSION

This chapter has identified a suitable definition of financial literacy by scrutinizing existing definitions, and considering the various synonyms that exist for financial literacy. Ultimately, after various comparisons with financial capability, financial literacy was defined as a never-ending process of being able to "… read, analyse, manage, and write about the personal financial conditions that affect material well-being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy" (Vitt, *et al.,* (2005: 7) (2006: 14). This definition incorporates financial knowledge, attitude, skills, awareness and behaviour in addressing the financial issues a specific person faces in order to improve financial well-being.

The definition was then analysed and contextualised according to its elements. In analysing the elements of the definition of financial literacy financial issues and ability were highlighted. Contextualisation was achieved by focusing on the aspects of financial issues and ability required to deal with these issues by 18-24-year-olds. The financial issues that were identified to be important, for this case study, were the functional requirements of the SANDF, the learning area outcomes within the SA educational environment, the internationally accepted financial literacy outcomes, the financial and financial information needs of 18-24-year-olds, and the general outcomes associated within the life cycle that is applicable to 18-24-year-olds. In summary, an 18-24-year-old should illustrate financial understanding, financial competence, and financial responsibility. In laymen terms, they should be able to make ends meet; to keep track; to plan ahead; to choose appropriate products and to stay informed. It is also interesting to note, that the above requirements relate to the four skill assessment domains of the Adult Literacy and Life Skills Survey done in Canada (OECD, 2005b: 17). The skill domains are prose and document literacy, numeracy, and problem solving.

Roy Morgan Research and Widdowson and Hailwood indicated the basic requirements and the advanced competence required to be financially literate. From their research it became clear that ability is not only about having skills and knowledge, but it is also about perceptions, attitude, and behaviour. Although a list of acceptable behaviours is given by authors Hilgert and Hogarth, caution should be applied in labelling behaviour as indicative of the level of financially literacy. Different approaches to money will result in different financial behaviour, and not all are unacceptable. Be that as it may, a list of acceptable behaviour is available and with it also a list of the financial products that indicate effective financial behaviour.

What we have now is a definition of financial literacy that indicates the financial issues that 18-24-year-olds face, an indication of the basic and advanced competencies necessary to be financially literate, an indication of acceptable financial behaviour, and a list of financial products that indicate financial activity. In the next chapter, Chapter 5, we should now include these elements in a measurement tool of financial literacy and then test its validity and reliability.

CHAPTER 5

MEASURING FINANCIAL LITERACY: A QUESTIONNAIRE-BASED MEASUREMENT TOOL APPROACH

5.1 INTRODUCTION

Having identified financial literacy as a required competency in Chapter 2, we have scrutinised financial literacy contextually (Chapter 3) and conceptually (Chapter 4). As a result, in Chapter 4 we arrived at an acceptable definition of financial literacy after comparing synonyms for financial literacy, and by evaluating existing definitions of financial literacy. The phenomenon financial literacy is defined as a never-ending process of being able to: "… read, analyse, manage and write about the personal financial conditions that affect material well being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy" (Vitt, *et al.,* 2005: 7) (2006: 14). This definition has as its aim the application of financial knowledge, attitude, skills, awareness, and behaviour in addressing financial issues to improve financial well-being.

The financial issues that were identified to be important, for this case study, were the functional requirements of the SANDF, the learning area outcomes within the SA educational environment, the internationally accepted financial literacy outcomes, the financial and financial information needs of 18-24-year-olds, and the general outcomes associated within the life cycle that is applicable to 18-24-year-olds. In summary, an 18-24-year-old should illustrate financial understanding, financial competence, and financial responsibility. In laymen terms they should be able to make ends meet; to keep track; to plan ahead; to choose appropriate products and to stay informed.

The financial issues indicate the required scope of financial knowledge and skills (objective) that are required, but without the right attitude, awareness and behaviour it will be of no avail (subjective). In the previous chapter, basic requirements and advanced competence were defined for each of these abilities, and some financial products were identified that illustrate acceptable financial behaviour.

Now that we know what financial literacy is, what it means and what it constitutes, the challenge is to create a measurement tool to test financial literacy in this chapter. In order to do so the concepts as identified in the previous chapter will have to be operationalized as indicators and then constructed as questions. To develop the questionnaire the process starts with the determination of the required information and respondents, followed by the identification of a suitable interview method and length of questionnaire. A draft questionnaire will then be developed, and after being pre-tested, it will be further developed as a main survey and then be assessed for its reliability and validity.

The specific research objectives of Chapter 5 are to:

- define and describe the methodology that will be utilized to obtain the information required to measure financial literacy;
- design a questionnaire by determining the required information and respondents, identify the interview method and length, draw up a draft questionnaire; and
- pre-test and revise the questionnaire so that it can be used in the main survey.

5.2 METHODOLOGY

The research problem is the construction of a financial literacy measurement instrument and the application of this instrument in order to refine its measuring capacity. The primary goal of this research is the development of a reliable and valid financial literacy measurement instrument that is scientifically and socially relevant in the South African context. Currently there is no South African financial literacy measure, and the international ones are language and culture insensitive.

The research objectives of this study, as explained in Chapter 1, are:

- What is financial literacy?
- What constitutes a financial literacy measure?
- Are the first-year officers at the SAMA financially literate?

- What is first-year SAMA students' own perception of their financial literacy (financial knowledge and behaviour)?
- What is the attitude and behaviour of young officers towards financial issues?
- What financial products do first-years at the SAMA have?
- How can the financial literacy measurement instrument be improved in view of the application and validation of the measure in this particular case?

To provide answers to the above-mentioned objectives both a qualitative and quantitative research methodology will be followed. A qualitative approach is required to develop a measurement of financial literacy and a quantitative approach is required to ensure that the measure instrument is valid and reliable. The research design, according to Ghauri*, et al.* (1995: 14, 26)*,* relates to the choice of strategy to collect the information needed for answering the research problem in the best possible way within the given constraints. Bless and Higson-Smith (1995: 63), refer to this *process* as being research management or planning, and therefore rather prefer the adoption of a definition that relates to testing of a hypothesis. To test such a hypothesis, according to Bless and Higson-Smith (1995: 63-64), a good research design requires answers to fundamental questions such as the focus, the unit of analysis, and the time dimension.

The focus of achieving the primary goal of this research is the development of a financial literacy measurement instrument. The focus of the secondary goal is the social study of the financial literacy knowledge, behaviour and attitude levels of people that can be classified in three categories: conditions, orientation, and actions (Bless & Higson-Smith, 1995: 64). The measurement instrument should give information on the condition of the financial knowledge and understanding, the orientation or attitudes and beliefs of subjects toward financial activities and products, and the financial actions of the respondents.

A financial literacy measurement instrument will be constructed after having completed the literature review on the contextual (Chapter 3) and conceptual analysis (Chapter 4) of financial literacy, and the consultation of subject experts. The subject or unit of analysis of the designed measure will be the individual as defined by Bless and Higson-Smith (1995: 65). The development of the financial literacy measurement instrument is of general interest because it will allow the measurement of financial literacy by various stakeholders. The SAMA may find the application to be of intrinsic value, or, as defined by Mouton and Marais (1996: 49-50) of contextual interest. Organisations, especially within the educational environment, will be able to measure the gap between actual and preferred financial knowledge, behaviour and attitude.

The distinction between contextual and general interest is important in determining the eventual validity of the research. Contextual interest research is internally valid if "… the constructs were measured in a valid manner, the collected data are accurate and reliable, the analyses are relevant for the type of data, and the final conclusions are adequately supported by the data", according to Mouton and Marais (1996: 50-51). Research of a general nature has to be internally and externally valid, where external validity refers to findings being "… generalizable to all similar cases …" (Mouton & Marais, 1996: 51). Therefore, this research will also have to assess the external validity of the measurement instrument.

Another fundamental aspect of testing a hypothesis is the manner of dealing with time. The aim of the study is to measure financial literacy so that it can be acted on. Therefore, the research and specifically the measure instrument is not developed to explore reasons or relationships, but to measure the state of affairs at a specific point in time. This is an important consideration in the development of the financial literacy measurement instrument. The instrument should be developed so that it is applied as a once-off measurement of a specific subject.

The research design is twofold. In developing a measurement instrument of financial literacy the research design is primarily exploratory, but the assessment of the validity and reliability forms part of descriptive research. Ghauri, *et al*. (1995: 42), defines measurement as: "… rules for assigning numbers (or other numerals) to empirical properties", and numerals have no quantitative meaning unless they are given such a meaning. Measurement is also seen as the link between the conceptual and the empirical levels (Ghauri*, et al.,* 1995: 43), and there are various examples of measurement instruments. Welman*, et al.* (2008: 149-174) mentions measurement instruments such as: unobtrusive measurement, group contacts such as survey questionnaires, personal visits and communication by telephone, individual apparatus, and direct observation. Having studied the definition of each instrument it was decided to make use of survey questionnaires as the measurement instrument of financial literacy. According to Bless and Higson-Smith (1995: 109), and Welman, Kruger and Mitchell (2005: 152) a questionnaire is the ideal technique for collecting survey data, because it generally provides information on:

- what a person knows: knowledge, factual information;
- what a person likes or dislikes: values, preferences, interests, tastes;
- what a person thinks: attitudes, beliefs;
- what a person has experienced or what happens at present;
- the typical behaviour of a person.

Questionnaires also have the advantage of being easily standardized, cheap and time effective (Bless & Higson-Smith, 1995: 114) if the following basic conditions are met with regard to the objectivity of information received (Bless & Higson-Smith, 1995: 109). Firstly, the respondent should cooperate willingly and be motivated to share their knowledge. Secondly, respondents must express their reality rather than what they wish the reality should be, or what they think it ought to be, or what they believe the best answer to be to satisfy the researcher. The third condition is that respondents must be aware of what they feel and think, and be able to express this in order to communicate information. Consequently, if these conditions are met we should be able to determine, according to Chapter 4, for instance, the ability of first-year students at the SAMA to face their financial issues. The step-by-step design of a financial literacy measurement in the form of a questionnaire is now discussed in detail.

5.3 QUESTIONNAIRE DESIGN

Questionnaires are not be confused with surveys. According to Frazer and Lawley (2000: 4) a questionnaire is: "… a formalized set of questions for obtaining information from respondents" whereas a survey is "… a broader term which refers to the overall research design". Questionnaire design and administration according to Frazer and Lawley (2000: 2) are a critical component of surveys that can result in useless information if done incorrectly.

An effective questionnaire design process can be divided into two stages with five steps in total (Bless & Higson-Smith, 1995: 89) (Frazer & Lawley, 2000: 19). The first stage is a development stage consisting of three steps followed by a pilot stage with two steps. The first step of the developing stage entails the determination of the required information and from whom it should be sought. The second step is the identification of a suitable interview method and the length of the questionnaire, and the third step is drafting a questionnaire with careful attention to appropriate question wording and content, suitable response format for respondents, and functional yet attractive structure and layout. The second stage is the pilot stage, and this is where the questionnaire is tested as a prototype and revised and corrected, if necessary, during the fourth step. The fifth and final step in the second stage is the assessment of the validity and reliability of the questionnaire. In this chapter the first five steps are covered, while the fifth step will be extended into the next chapter when validity and reliability are assessed.

5.3.1 Determine Required Information and Respondents

As indicated by Bless and Higson-Smith (1995: 89) the first step in creating a questionnaire, is to identify the information that is required by the researcher, and to determine from whom it should be sought.

5.3.3.1 Required Information

The required information is the information required by the researcher to address and find a solution to the research problem. In this case the research problem is:

"What are the financial literacy levels of respondents*?"*

Financial literacy is a phenomenon, as defined by Welman*, et al.* (2005: 222), which stems from a global, national, and organisational need as identified in the contextual analysis of Chapter 3. Although financial literacy is defined in Chapter 4 and clarified conceptually, it remains vague. This vagueness according to de Vaus (1996: 48) is because concepts, or constructs as defined by Welman*, et al.* (2005:136), are merely: "… abstract summaries of a whole set of behaviours, attitudes and characteristics which we see as having something in common". Therefore, concepts, as defined by Ghauri*, et al.* (1995: 43) and de Vaus (1996: 47), should be further developed into indicators. These indicators will then be structured as questions in the financial literacy questionnaire as part of the third step where a draft questionnaire is developed. The "descending ladder of abstraction", as quoted by de Vaus (1996: 50), will serve as the structure for further discussion: starting with financial literacy as the phenomena and ending with the pertinent financial literacy indicators. The questions themselves are developed in section 5.3.3.

The phenomenon financial literacy is aptly defined by Vitt*, et al.* (2005: 7) as follows: "Personal financial literacy is the ability to read, analyse, manage and write about the personal financial conditions that affect material well being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy". As conceptually analysed in Chapter 4, financially literacy is essentially about having the ability to address financial issues competently. In Chapter 2 competency was defined, by referring to Draginidis and Mentzas (2006: 53), as a combination of tacit and explicit skills, knowledge, and behaviour, which gives someone the potential for effectiveness in task performance, and therefore the financially literate can be profiled people that illustrate the following concepts:

- essential mathematical, reading, and comprehension skills;
- financial knowledge and understanding;
- competent financial behaviour and attitude.

These concepts are now operationalized by identifying the indicators that resemble the concepts. The first concept is that of having *essential mathematical, reading, and comprehension skills*. According to Widdowson and Hailwood (2007: 37) this means that the individual will need basic numeracy skills such as the ability to calculate returns on investments, the interest rate on debt, and basic arithmetic ability. In this research the questionnaire will be applied to first-year students at the SAMA to assess validity and reliability, and it is assumed that they possess essential mathematical, reading, and comprehension skills because they have qualified to enrol for degree studies. Therefore, these basic but essential skills are not included in this questionnaire. Nevertheless, the advanced competence requirements or indicators as identified by Roy Morgan Research (2003: 73), such as the ability to understand compound interest and averages, should be determined, and will be, as part of testing financial knowledge and understanding.

Financial knowledge and understanding is the second concept of financial literacy that the financially literate need to be knowledgeable in to deal with the financial issues at that stage of the individual's life. The knowledge and understanding required is best explained by referring to the balance sheet identity: Assets = Equity + Debt. The balance sheet identity indicates the short- to long-term provision of funds (Equity + Debt) and the short- to long-term use of funds (Assets) to improve wealth. Therefore, the financially literate should illustrate knowledge and understanding of where funds come from and how best to make use (investing) of them. Equity concerns the individuals own contributions by means of salary and investment income after expenses, interest and taxes are paid. The financially literate should therefore be informed on income generation, planning, and budgeting to be able to manage income and expenses. To do so the financially literate should know where money comes from and goes, be able to read a pay slip, be able to recognize household expenses and regular financial commitments, and understand interest and taxes (Roy Morgan Research, 2003: 73). Debt refers to foreign capital such as credit that comes at a cost. The financially literate should know the advantages and disadvantages of each form of financing, different interest rates, as well as terms and conditions such as securitization, default, guarantees, and credit recording (Roy Morgan Research, 2003: 73).

The financially literate should also know how to use these funds effectively through investment by knowing what investments are available, the advantages and disadvantages of each, understand the time value of money, and understand risk and return, and diversification. As indicated by the FSA (2005: 31), a financially capable person would shop around to get the best value and product when purchasing or investing, and then monitor the product over its lifetime. Monitoring a product effectively requires knowledge of financial records, of where to get financial information and advice, and of what the financial rights and responsibilities are within the wider ethical, social, political and environmental dimensions of finances (FSA, 2005: 5) (ASIC, 2003: 112).

The third concept of the profile that should be questioned is *competent financial behaviour and attitude*. The indicators of competent financial behaviour are being financially organised, disciplined, and motivated, and having relevant financial products. Indicators of being organised are having a budget, having short- to long-term goals and a plan to achieve them, managing credit, managing risk, managing spending, keeping records and assessing statements. Discipline refers to the ability to regularly make debt payments, assess risk, verify statements, reconcile records, and make investments. Contribution towards a retirement plan and/or mutual funds will illustrate such discipline. Motivation is an indicator of attitude towards the future to improve financial well-being. The individual in assessing the importance of financial behaviour and products illustrates financial attitude and responsibility.

More specific indicators of acceptable financial behaviour and attitude in general are shopping around, and making strategic use of banking, various investments, and risk insurance products to maximize personal financial advantage (Roy Morgan Research, 2003: 74). An example would be to pay as late as possible, earn interest as long as possible, and borrow on favourable terms (Jump$tart, 2007: 4-5). Financial advantage is the result of applying reliable information and systematic decision making to personal financial decisions by assessing financial implications and checking the credibility of service providers (Jump$tart, 2007: 4-5) (Roy Morgan Research, 2003: 75).

Furthermore, the financially literate save; acquire investment property as part of a diversified investment strategy that is compatible with personal goals; make provision for unexpected risks by means of an acceptable level of insurance using appropriate and cost-effective risk management strategies; acquire knowledge to be financially literate and staying informed; and are prepared to assert their rights (Jump$tart, 2007: 4-5) (Roy Morgan Research, 2003: 75).

Specific acceptable financial behaviour and attitude indicators are: no borrowing to fund day-to-day activities; the period of borrowing should not exceed the period of employment, and if debt is really necessary the monthly payments should not exceed income. In addition, the use of credit cards should be restrained to be a savings account and not a form of credit. Another indicator of acceptable financial behaviour are the products that individuals have in their financial portfolio. In Chapter 4 the quoted research done by Hilgert and Hogarth (2003: 310) identified various financial products that indicate financial behaviour. These products are: a will, a budget in writing, savings, financial records for tax purposes, a list of assets, life assurance, insurance, and records of expenses. Now that we know what information on financial knowledge, attitudes, behaviour and ownership of financial products are required we need to assess who should supply this information. In the next section, the population and sample for this research project will be determined.

5.3.3.2 Respondents

The second aspect, of the first step of drafting a questionnaire, is that of determining who the respondents will be. For this research, first-year students at the SAMA are primarily envisaged as respondents to assess the validity and the reliability of the financial literacy measurement instrument. The respondent envisaged in the development of this measurement instrument is a person earning income in a full time capacity. Care should be taken when the “score” is interpreted, because not all respondents circumstances are the same, and behaviour and attitude may be influenced by these circumstances.

5.3.2 Identification of Interview Method and Length of Questionnaire

It has already been decided that the questionnaire is the most structured method of getting information. This method is based on an established questionnaire with a set of questions with fixed wording and sequence of presentation, as well as more or less precise indications on how to answer each question. These self-administered questionnaires are to be completed by respondents themselves (Bless & Higson-Smith, 1995: 108). A self-administered questionnaire requires a high literacy level and should be accompanied by a covering letter with instructions (Bless & Higson-Smith, 1995: 109). In the assessment of the validity and reliability of the developed questionnaire it will be presented by the author in his official position as the financial literacy lecturer to the first-year students at the SAMA.

Self-administered questionnaires, according to Oppenheim (1986: 36), should ensure a high response rate, accurate sampling, and a minimum of interviewer bias. This method will also provide the opportunity for clear explanations without interpretation of the questions. Further advantages according to Bless and Higson-Smith (1995: 114) are ease of standardization, low drain on time and finances, and very little training of the researcher. The disadvantages, according to Bless and Higson-Smith (1995: 114), are the difficulty of interpreting subjects’ responses, difficulty of checking whether the subject understands the questions, and a low response rate per question and response bias.

The length of the questionnaire will have an affect on the response rate and responses of the subjects (Ghauri*, et al.,* 1995: 61). De Vaus (1996: 109) is of the opinion that the more specialized the population are, and the more relevant the topic, the longer the questionnaire can be. If the questionnaire seems to be too trivial or superficial, the response will be low. Equally, if the questionnaire is so long that respondents are saturated, it can lead to respondents refusing to collaborate (Bless & Higson-Smith, 1995: 116) or a reduced response, according to Ghauri*, et al.* (1995: 61).

There are no standards available as to what a long and short questionnaire is, but the length of the questionnaire will depend on the amount of data required, the cost of the survey, the likely response rate, and the amount of time respondents are wiling to give to complete the questionnaire (Frazer & Lawley, 2000: 22). Further factors to be considered, according to de Vaus (1996: 109), are the nature of the sample and the topic under investigation. Bless and Higson-Smith (1995: 116) suggests 15-90 minutes per questionnaire, and Frazer and Lawley (2000: 36) recommend a maximum of 12 pages to be acceptable for mail questionnaires.

In this case it was decided to draft a questionnaire with an average completion rate of 30 minutes. Because the questionnaire is self-administered, it was also decided to restrict the questionnaire to 16 pages. The duration and length of the questionnaire will, however, be confirmed in exploratory work and during pre-testing. The draft questionnaire that will be pre-tested can now be compiled.

5.3.3 Draft Questionnaire

Thus far, the indicators that will explain the concepts that constitute financial literacy have been identified, and full-time income earners identified as the respondents. It was also established that a questionnaire is the most suitable interview method and it was decided that it should not exceed an average of 30 minutes to complete, and be a maximum of 16 pages. A draft questionnaire can now be constructed by formulating questions that will provide the required information on financial literacy. For the questionnaire to be valid and reliable a few considerations and features should be noted.

The considerations that should be of concern, as noted by de Vaus (1996: 330), are: ethical, technical, and practical considerations that affect research participants, the researcher's profession and professional colleagues, and sponsors and funders of the research. Ethical considerations are important for this research at the stage when participants are recruited, and when results will be released (Welman*, et al.*, 2005:

181). Respondents in this research will be affected by ethical issues or principles of voluntary participation, informed consent, harm to participants, and anonymity and confidentiality. Because of its importance in constructing this draft questionnaire, brief mention is now made of the principles that affect research participants and the decisions made by the researcher.

Voluntary participation means that people should not be forced to participate in the survey, even though it can result in poor representation. Compulsory participation undermines the quality of responses (de Vaus, 1996: 332), and therefore voluntary participation will be the sought option of generating responses. Respondents will be informed that their responses will allow the researcher to determine their level of financial literacy and the areas of concern. The questionnaire will contain a degree of involuntary response which is necessitated by questions such as parents' highest qualification, salary, and thriftiness. It is expected, as de Vaus (1996: 332) warned, that respondents may overstate their answers to these three questions.

Informed consent requires the researcher to inform the respondent about issues such as the purpose of the study, risks, benefits, and many more (de Vaus, 1996: 334). Care should be taken that if too much information is given it might discourage participation or distort replies to the point where the findings become invalid (de Vaus, 1996: 334). It was decided for this research that a consent form will be added as a loose attachment to be handed in separately. The consent form should indicate that no physical harm will come to respondents, that responses are anonymous, and that they will be treated confidentially.

No physical harm will come to respondents completing the financial literacy measurement instrument. Respondents complete the questionnaire voluntarily, with only possible psychological harm (embarrassment?) as a result of having to answer questions about parents' income, thriftiness, and qualifications. The physiological harm is expected to be minimal, if any at all.

The ethical issues of anonymity and confidentiality will be honoured by the researcher. Anonymity, according to Bless and Higson-Smith (1995: 103), simply means that no names are divulged. The combination of numerous responses and the fact that no names are attached to questionnaires will provide for that anonymity in this research. Although an identification number is allocated to a questionnaire, it will not be connected to any personal detail. Confidentiality, according to de Vaus (1996:

337), means that although names can be matched to responses by the researcher, no one else will have access to them. In this case, there are no names, but it is possible that identity through a rigorous process of cross tabulation could be determined. To counter these possibilities data will be locked away in the researcher's office, and only be made available to people who agree to respect confidentiality. The researcher will also codify responses and remove locality and identity identifiers.

Having noted the ethical considerations of this research, attention can know move to the technical considerations or features. These features influence the validity and reliability and they are: question content, question wording, the desired format for responses, and the structure and layout of the questionnaire, which will now be discussed in detail.

5.3.3.1 Question Content

The first feature in drafting a questionnaire is question content, and according to de Vaus (1996: 80-81), there are five ways to determine the content of questions. Firstly, the research problem will indicate what concepts need to be measured. Secondly, the concepts are represented by indicators, as identified in section 5.3.1.1, which can be operationalized as questions. Thirdly, question content can be influenced by the subjective knowledge and experience of what questions should be included to explain relationships. The last two ways that shape the question content are the way in which data will be analysed and the method by which the questionnaire will be administered. Frazer and Lawley (2000: 23) add the following two considerations: does the respondent have access to the necessary information, and secondly, are they willing to provide it?

The content of the financial literacy measurement is primarily determined in section 5.3.1.1, and supports the statement by Dillman, as quoted by de Vaus (1996: 81), that question content consists of behaviour, beliefs, attitudes and attributes. Section 5.3.1.1 identified financial knowledge and understanding, behaviour, attitude and products as the concepts that describe financial literacy. To measure these concepts specific questions have to be asked. If you want to measure behaviour, you ask what people *do.* If interested in attitude you want to know what people think is desirable, and if you want to explain why you most probably need to obtain information about the respondent's characteristics (biographical). However, the easiest method of defining questions is to scrutinize existing ones.

De Vaus (1996: 53) promotes the use of existing measures from previous research because it builds the body of knowledge, it allows for comparisons, and it will also prevent "idiosyncratic research with idiosyncratic measures". Therefore, it is prudent to reflect on existing questionnaires by means of a brief summary of some relevant questionnaires mentioned in surveys by OECD, Atkinson*, et al.*, Worthington, Jump$tart Coalition, Hilgert and Hogarth, Consumer Credit Counselling Service (CCCS), FleetBoston, Murphy, Jorgensen, Chen and Volpe, and Jump$tart Coalition. These financial literacy surveys range from being comprehensive questionnaires to simple quizzes, and the subject focus varies from the general public, to consumers and college students. All of these questionnaires include a section on demographics which will not be discussed because they depend on the subject of the study and the aim of the specific survey.

In the study completed by the OECD (2005a: 42) on financial literacy, two different testing approaches were identified. The first approach is "to give respondents an objective test that measures their knowledge and understanding of financial terms and their ability to apply financial concepts to particular situations", and these tests were applied in the USA and Korea. The second approach as applied in the UK, Japan and Australia, is a more subjective approach "to ask respondents for a self-assessment, or for their perceptions, of their financial understanding and knowledge, as well as for their attitudes towards financial instruments, decisions, information and its receipt". The preferred option for this research will be a combination of both subjective and objective measurements of financial literacy by questioning financial knowledge, behaviour, attitude, and financial products.

The most comprehensive survey done on financial literacy of the general public was done by Personal Finance Research Centre of the University of Bristol (2005: 1-69) on behalf of the Financial Services Authority in Britain between June and September 2005. Their survey was designed to measure financial capability and the questions "… are largely based on patterns of behaviour and attitude" in the domains of managing money, planning ahead, choosing products, and staying informed. The questionnaire also includes a knowledge measure in the form of a money quiz (Atkinson*, et al.*, 2006: 3-5). Although the quiz consisted of only seven questions, the questions on attitude and behaviour measured knowledge as well. The biggest disadvantage of this questionnaire is questions that are irrelevant in the South African context, and the domains being different to the financial literacy concepts that were identified in section 5.3.1.1. Interesting to note from this survey is the use of a factor analysis approach to determine if someone is financially literate or not.

The ANZ Survey of Adult Financial Literacy in Australia is a national telephone survey that consists of three sets of information (Worthington, 2006: 65). The first set tested financial literacy by stating 80 questions that tested mathematical and standard literacy, financial understanding, financial competence, and financial responsibility of adults. The other two sets were explanatory variables (Worthington, 2006: 66). Mathematical and standard literacy is also accepted as a given in this research project, and together with the explanatory variables can be disregarded. The questions testing financial understanding, competence and responsibility, may however, prove valuable in drafting a South African questionnaire that tests financial knowledge and behaviour.

An example of a quiz aimed at the general public is a questionnaire presented by the Jump$tart Coalition (Available: http://www.jumpstartcoalition.org/download.cfm). This quiz is exactly that, a very brief "do it yourself" test of financial knowledge consisting of only 10 questions. The aim of this questionnaire is not to examine attitude and behaviour towards financial issues, but to test knowledge on money management, planning, financial products and financial information. Clearly, this questionnaire is limited in scope.

The following questionnaires are aimed at the financial literacy levels of financial consumers. The first example is of the survey by Hilgert and Hogarth (2003:309-322) where the aim was to determine a connection between knowledge and behaviour. The questionnaire that they used was the result of the monthly Surveys of Consumers conducted in November and December 2001 by the University of Michigan, and the Survey of Consumer Finances (SCF). The questionnaire consisted of a section on the measurement of knowledge that included 28 true-false questions on concepts such as cash-flow management, general credit management, saving, investment, mortgages, and a broad category consisting of other financial topics. The second section of the questionnaire questioned the consumers on 18 financial behaviours and 13 financial products.

This questionnaire excludes essential mathematical, reading, and comprehension skills, and also aspects with regard to getting financial information or sources of advice. Excluding the concepts used, and the contentious number of questions asked, this questionnaire might prove quite useful as a measure of financial literacy. If revised it can be an acceptable source of valid financial literacy questions.

The Consumer Credit Counselling Service (CCCS) (www.cccsinc.org) is a non-profit community agency dedicated to empowering consumers to achieve a lifetime of economic freedom. CCCS provides free, confidential budget counselling, community and personal money management education, debt management programmes, comprehensive housing counselling and challenges consumers to take their financial literacy quiz. This quiz or questionnaire is an objective test of financial literacy that focuses mainly on debt and budgeting. It does not test attitude or behaviour to money and financial issues at all, and consisting of seven questions is not a suitable measure of financial literacy.

FleetBoston, as reported by the Consumer Bankers Association (2004: 10-13), developed a questionnaire which launched a national survey of consumer knowledge on basic banking issues in September 2003. The survey is a subjective test of 13 questions that measures the attitude towards financial issues, as well as the perception of financial literacy. Clearly, this questionnaire is limited in scope and depth.

Students are the focus of the financial literacy questionnaire used by Murphy (2005: 486). Murphy did an exploratory study on the financial literacy of undergraduate black college students in 2003. This study made use of demographic information questions as well as 10 financial literacy questions and took approximately 15 minutes to complete. This questionnaire is limited in scope by only testing financial knowledge or understanding, and doing it by means of only ten questions.

The most recent example of a student financial literacy questionnaire is one developed by Jorgensen (2007: 83-94). This questionnaire is a compilation and adaptation of the work of Chen and Volpe and the Jump$tart Coalition, amongst others. The questionnaire is divided into sections that measure financial attitude (six questions), financial behaviour (six questions), influences (seven questions), financial knowledge (25 questions), and some demographic questions (18). In covering knowledge, behaviour and attitude this questionnaire is the most closely related to what will be done in this research project.

One of the surveys adapted by Jorgensen that needs mentioning is that of Chen and Volpe (1998: 107). This survey covered aspects such as general knowledge, savings and borrowings, insurance and investments. The 52 questions asked included 36 multiple-choice questions on financial knowledge, eight opinion and decision questions, and eight demographic questions. After refinement of the pilot study the validity and clarity was evaluated by two knowledgeable financial literacy individuals, and the quality and consistency was assessed using Cronbach's alpha. The reliability was found to be .85 (Chen & Volpe, 1998: 109).

The other questionnaire used by Jorgensen is a questionnaire developed by the Jump$tart Coalition Biennial Personal Financial Survey that has been in use since 1997. It is quite a comprehensive test of financial knowledge, attitude and behaviour covering four categories: money management, income, saving and investing, and spending and credit. The 51 questions asked are close-ended multiple-choice responses on indicators such as saving and spending behaviours, credit, saving and investment, and insurance of which 31 are core financial literacy knowledge questions. These questions have undergone minor ordering and cosmetic changes since 1997 so that it can be continually used in measuring financial literacy and for comparison purposes (Xiao, 2007: 167). With regard to the validity of the questionnaire Mandell (2007: 167) quotes Lucey (2005) in stating that the 1997 and 2000 surveys "… possess moderately high overall inter-correlation consistency as well as some degree of face and content validity":

The surveys by Jorgensen, Chen and Volpe, and the Jump$tart Coalition all prove to be valuable examples of financial literacy questionnaires, and although the focus of questions are conceptually different, there are many valid questions. Not only will their inclusion support the validity of this research, but will also provide an opportunity for possible comparisons, even if it is only for specific questions.

This questionnaire will consist of five different sections. The first section will focus on biographical data, and the nominal content will depend on the aim of the study. In testing financial literacy, useful information can be attained in questioning the attendance of financial literacy education and the saving behaviour. The second section will measure financial knowledge and understanding with 31 questions on investment, saving, income and expenses, inflation, interest, credit, risk management, and taxes and retirement. These questions score 1 point for the correct answer. The third section will measure the financial behaviour of respondents.

Financial behaviour will be measured by asking 21 questions. Three of these questions will provide nominal data on behaviour, while the other 18 will measure financial behaviour on a three-point Likert scale. Financial behaviour with regard to spending, saving, and planning and management of finances will be questioned. A similar approach is followed in the fourth section where financial attitude towards financial activities, financial planning, and opinion on confidence is measured by 29 questions on a three-point Likert scale.

The fifth section will require information on the financial products that respondents have in their financial portfolios. Respondents will be asked to indicate what products they have with a bank or banks. They will also have to indicate which of the following financial products they have in their portfolio: will, budget in writing, savings, life assurance, records of all expenses, financial records for tax purposes, list of assets, shares, and mutual funds. In scoring financial literacy, a minimum standard could be set according to the desired standard for the respondent's circumstances. For example if the respondent is between 18-24 years old, it may exclude a house mortgage and life assurance.

In summary, the question content of this research will be in line with the research problem, determined by the financial literacy indicators and personal hunches, and ultimately shaped by the method of analysis, administration and previous questionnaires. A summary that indicates the path from financial literacy needs to defining relevant financial literacy questions is attached as Annexure 2. As with all questionnaires, care should be taken of the quality of the questions, which can be positively influenced by paying careful attention to question wording.

5.3.3.2 Questing Wording

According to Frazer and Lawley (2000: 24) the choice of wording is critical and can influence the rate of response to questions. The researcher, according to the same authors, should design the questions so that they are easy to answer, appropriate, relevant and neutral. Appropriate question wording is one of the main reasons why this financial literacy measurement instrument is developed instead of making use of existing ones. In developing clear, unambiguous and useful questions, the following summarized guidelines as identified by Welman*, et al.* (2005:174-181), Frazer and Lawley (2000: 36-38), de Vaus (1996: 83-86), and Ghauri*, et al.* (1995: 62-64) will be followed:

- Is the question brief? Can the question be shortened? The longer the question the more confusing it can be.
- Will the words be uniformly understood? Is the language simple and concise? What is the literacy level of the respondent? In South Africa English is accepted as the preferred language of communication, but is the first language of only a few.
- Is the question too vague?
- Is the question too precise? If it is, it will give away the answer.
- Is the question necessary?
- Is it a double question? Double-barrelled? Is the question one-dimensional?
- Does the question have a double negative? Is it a negative question?
- Are the answer choices mutually exclusive when only one answer is requested?
- Is the question biased? Prestige biased?
- Is the question objectionable? Asking about the educational and income levels of guardians may be objectionable.
- Will the respondent be willing to give the information?
- Is the question too demanding?
- Has too much knowledge been assumed?
- Is the question technically accurate?
- Can the responses be compared with existing information?
- Can the question stand alone?
- Have the criteria by which respondents must make a judgement been clearly stated?
- Is the question applicable to all respondents?
- Does the question lead the respondent? Is the question neutral?
- Is the question hypothetical?
- Should it be a direct or indirect question?
- Is there an escape route?
- Is the question polite and in a soft language? Is the question irritating, offensive, or provoking?

As stated by Althouse (2000: 3) question items should be significant, should discriminate between knowledgeable and unknowledgeable candidates, but should not provide any unintentional source of difficulty or answer clues. Ultimately, according to Oppenheim (1966: 51), the context, sequence, and response categories or format must help the respondent without biasing the answers by providing the information as the researcher requires it.

5.3.3.3 Response Format

The choice of response format depends on question content, respondent motivation, method of administration, type of respondents, access to skilled coders to code open-ended responses, and the amount of time available to develop a good set of unbiased responses. Frazer and Lawley (2000: 26) add to this list by saying that data analysis and comparison to previous research results will influence the choice of response format.

Albeit, there are generally two types of response format: open-ended questions, and close-ended questions with all their variations (de Vaus, 1996: 86), and irrespective of what response is required, both types of question either want to acquire factual information or opinions. In the case of this research factual information is required on objective information of respondents. Examples are age, sex, rank, arm of service, province where matriculated, investments, and financial literacy knowledge and behaviour questions. The subjective questions are the ones dealing with opinions, and these are more problematic because the respondent is the only one who knows the true answer (de Vaus 1996: 119). The opinion questions will inquire about who is responsible for teaching finances, and the importance of issues such as paying bills on time, preparing a will, and following a monthly budget, amongst others.

Open-ended questions, according to Bless and Higson-Smith (1995: 122) allow respondents to respond as they wish. These open-ended questions are ideal for when specific information is required but it is not practical to list all options (Frazer & Lawley, 2000:26). Responses to open-ended questions can be detailed and complex, or short. Various disadvantages such as answers being quite complex, not easily comparable to those of other respondents, and difficult to codify and categorise (Ghauri*, et al*., 1995: 61) have led to the exclusion of these questions from this research project.

The questions that are included in the questionnaire are therefore examples of close-ended questions. Closed-ended questions or structured questions, as referred to by Bless and Higson-Smith (1995: 121), have a range of possible answers. These questions can be categorized as single (one response required), dichotomous (two responses provided) such as *yes/no*, or multichotomous (several alternatives provided) (Frazer & Lawley, 2000: 27).

Single responses are mostly required throughout the questionnaire, where respondents have to indicate only one answer. The only questions where more than one answer can be given are where the respondents have to indicate their ownership of financial products in questions (Q) 50-52. Dichotomous questions provide two possible responses: yes/no. The only example of such a question is classes attended in high school (Q2). The rest of the questionnaire consists of multichotomous questions with more than two possible answers provided in testing financial knowledge, attitude and behaviour, although only one response is required. The multiple-choice format was selected instead of true-false format to test higher cognitive skills (Cameron, 2003: 187). Nunnally, according to Venter (2006: 11), does not recommend the use of true-false questions because they can result in a high measurement error due to guessing. Cameron (2003: 186) supports this statement by adding that true-false questions have a poor range of discrimination.

As indicated by Bless and Higson-Smith (1995: 120) there are a variety of close-ended questions such as scaled response, semantic differentials, checklists, and ranking responses. Scaled response questions require the use of a scale to measure the attributes of the construct, and they are commonly used to measure attitudes of respondents towards particular issues (Frazer & Lawley, 2000: 28). Therefore, statements are made and respondents are asked to identify the statements to which they agree. Examples of scaled responses in the questionnaire are where respondents are required to select the statement that best represents their opinion on matters such as their thriftiness (Q42), their financial actions (Q43, 44), and their attitude to certain financial issues (Q45-49). As indicated by de Vaus (1996: 89), extremity and intensity can be indicators of the direction of attitude. So instead of asking if the respondent agree or disagree, the degree is rather asked.

A slightly different approach to scaled response is followed in Q7 where the respondent has to indicate the response between two extremes. In this case, the extremes are indicated by means of adjectives and three options are provided in between. Respondents have to grade their financial knowledge and understanding on various topics in Question 7. The scale is from one to five, where one represents a poor grade and five is a very good grade. However, care should be taken of questions where an individual has to rate own knowledge and/or behaviour, because the answer may be socially desirable, or lead to embarrassment, and therefore is regularly overstated. No checklists or ranking questions are included.

Although close-ended questions were used in this research, this was only done after careful consideration of the advantages and disadvantages as identified by Oppenheim (1966), de Vaus (1996), Bless and Higson-Smith (1995), Frazer and Lawley (2000). The advantages of supplying multiple answers to the respondent are that they are quick to answer, minimal writing, easy to codify answers, respondents classify themselves, and the questions do not discriminate against less talkative and inarticulate respondents. The disadvantages however are that these questions create false opinions because the range of alternatives can be insufficient (de Vaus, 1996: 86), it prompts people with "acceptable" answers, and it ignores the qualifiers to answers. According to Oppenheim (1966: 43) further disadvantages are the loss of spontaneity and expressiveness, and making the respondent think about alternatives that might not have occurred to him. To counter the disadvantages the following guidelines are suggested.

Firstly, the range of answers must be exhaustive to avoid biasing responses. Secondly a "don't know" option can be included so that a respondent opinion is not forced where there is none. Ghauri*, et al.* (1995: 61), however, warns against providing a "don't know" option as a bail out or escape route, and in agreement it is decided that it will only be allowed as a response for the questions dealing with parents' income and educational levels. No filter or contingency questions are asked in the questionnaire. The main reason for doing this is to keep the questionnaire structured and simple. A table is attached that indicates the question number, source of the question, the indicator, the concept, the scale and how scoring will take place.

5.3.3.4 Structure and Layout

The structure and layout of any questionnaire can influence responses positively or negatively. According to Ghauri*, et al.* (1995: 64) and Welman*, et al.* (2005: 180) a neat, tidy, and clear layout that makes a good impression can improve the willingness of respondents to answer and may also ensure that valid information is obtained.

To ensure that this questionnaire is neat, tidy and clear a proper structure should be applied taking into consideration the ability of respondents. A suitable structure as defined by Frazer and Lawley (2000: 30), Ghauri*, et al.* (1995: 63), and Welman*, et al.* (2005: 179) is a structure that follows a justified logical order, because of the risk that earlier items hold for subsequent items. This logical and systematic sequence of questions will avoid misunderstandings and ensure a high response rate. Questionnaire layout should be such that the reader is able to follow all the instructions easily, and answer all the questions that are supposed to be answered (Welman*, et al.,* 2005: 180).

The main function of instructions, according to Oppenheim (1966: 67), is to compensate for the absence of an interviewer. Instructions can be classified as general instructions, section instructions, and question instructions. General instructions in this research will introduce the respondent to the purpose of the questionnaire, and it will assure confidentiality. Normally they can also indicate how the respondent was chosen, and how and when to return the questionnaire. Section instructions will be created for each of the relevant sections to provide a brief introduction, and each question will have instructions on how it should be completed.

The order of questions according to most authors should be from easy to difficult and from general to specific. Although Frazer and Lawley (2000: 32), and de Vaus (1996: 95) are of the opinion that demographics should appear last in the questionnaire they will be placed first. The reason for doing so is that demographics are known factual questions and should be easy to complete. Contrary to the opinions of authors such as Frazer and Lawley (2000: 30), and Ghauri*, et al.* (1995:64) the few sensitive questions on parents' education and income are placed early in the questionnaire with the demographic information. In so doing the questions are down played as just being demographics and not part of the test part of the questionnaire. In summary the structure and layout of the financial literacy measurement instrument will look as follows:

Front Cover: The front cover includes the survey title, a graphical illustration of the emblem of the Faculty of Military Science and SU, a brief explanation of the aim of the survey, and a few instructions on how to respond to questions.

Back Cover: An invitation is made to the respondent to make additional comments and plenty of space is provided for the qualification of answers given in the questionnaire. A message of thanks is also included on the last page.

Page Layout: Questions fit the page. There are five sections that need to be completed by the respondent: biographical, financial knowledge and understanding, financial behaviour, attitude towards financial matters, and financial products.

Question Layout: The principles discussed in 5.3.3.2 and 5.3.3.3 were applied as well as the following:

- readable – 11 font in Arial typeface;
- use of italics and bold in questions to emphasise key words and instructions;
- coded answers in a light grey font in check-boxes;
- vertical arrangement of responses rather than across the page;
- no responses on the front cover;
- Likert-style questions are presented in a matrix format;
- initial questions are relevant to the study;
- question order is from easy to difficult to easy;
- questions are grouped in sections to ensure structure and flow;
- a variety of question formats are used to keep it interesting;
- no filter or contingency questions are used to keep the questionnaire simple.

Printing: The questionnaire was printed on standard white paper in black ink. It was printed on both sides of A4 paper and folded to form a booklet.

The draft questionnaire is now ready to be tested, and revised if necessary. An attachment is provided that indicates the financial literacy knowledge questions, its source, the financial literacy indicator it supports and the concept represented.

5.3.4 Pre-test and Revision

Pre-testing is an important stage in the questionnaire design process with the main aim of identifying potential problems and rectifying them (Frazer & Lawley, 2000: 33). According to de Vaus (1996: 99): "…each question and the questionnaire as a whole must be evaluated rigorously before final administration". This evaluation process is referred to as either pilot testing or pre-testing, and according to Converse and

Presser as quoted by de Vaus (1996: 99) there are three phases in pilot testing: question development, questionnaire development, and polishing the pilot test.

The first phase is question development, and the focus should be on establishing how questions should be asked, to evaluate how respondents interpret the questions meaning, and to check whether the range of response alternatives is sufficient (de Vaus, 1996: 99). The issue of how questions should be asked has already been dealt with, and therefore the focus can now move on to the second phase where respondents' interpretation of the meaning of the drafted questions and checking whether response alternatives are sufficient are investigated.

To ensure that the meaning of questions is understood, and that the response alternatives are suitable it is recommended that three groups test the questionnaire: colleagues/fellow researchers; potential users of data; and a sample of the potential respondents to (Frazer & Lawley, 2000: 33). Colleagues/fellow researchers such as a language practitioner (academic), an industrial psychologist (also an academic), an accountant (also an academic), a personal financial planner, and statisticians (also academics) will scrutinize the questionnaire focusing on the content to ensure validity. The statisticians and the industrial psychologist, as possible users of the data, will scrutinize the suitability of the provided responses, and then a sample of the subject of the study will "test" the questionnaire.

The screening of the test by colleagues/fellow researchers is to determine the face and content validity of the test. Face validity can establish that a test appears valid to examinees, administrators and untrained observers. In laymen terms face validity tells us to what degree the measure measures what it is designed for. However, it is not a technical validity test and the test should still be validated. The feedback received from colleagues/fellow was most welcome as it made a huge contribution to improving the questionnaire. The feedback extended over a period of three years and although it was quite extensive some valuable suggestions are briefly reflected on:

- the term parents might exclude a majority of respondents and therefore it was decided to change it to guardians;
- the question that referred to ownership or rental of home was deleted due to the ambiguous nature of "home";

- the use of the word "course" can be interpreted as anything from a one-day course to an annual course. It was decided to be more specific with regard to what was studied;
- a question was raised with regard to what may seem to be foreign concepts such as "32 day call account", "mutual funds", "financing rate", and "bonds". These words are also indicators of financial literacy knowledge, and therefore it was decided to keep them;
- the words "thriftiness" and "scammed" are used although they may not be well known. An explanation was added in brackets to clarify thriftiness. The word "scammed" as used in the American context was changed to "cheated";
- in the biographical section "monthly salary" might have been perceived as money in hand and therefore it was changed to "gross monthly salary".

Whereas face validity is concerned with the measuring instrument looking like a questionnaire, content or logical validity is concerned with the acceptability of the content of questions in measuring the content domain. In other words are the right questions asked to measure financial literacy? To confirm content validity expert judgment is required and not statistics. Although standard procedure is to convene a panel of judges it was decided to make use of existing internationally acclaimed questionnaires with the input of an industrial psychologist, an accountant, and personal financial advisors. Personal experience as a lecturer in personal financial literacy and financial management was also applied to ensure the content validity. Further discussion of validity follows after the reliability is determined.

As indicated in previous discussions questions are developed keeping in mind the required information and what the response format should be to provide that information. Response format, according to Frazer and Lawley (2000: 26), is influenced by data analysis and comparison to previous research results. Of critical importance were the issues of how the test would be scored as well as how reliability and validity could be assessed. Therefore, the statistical input since 2006 by statisticians such as Vos, Neethling and Nel, was of critical importance in formulating questions. The most critical contribution, and arguably most elementary, was that distinction be made between the different variable levels such as nominal, ordinal, interval and ratio. As suggested by de Vaus (1996: 132), it is advisable to measure variables at the highest level appropriate to the variable. Measuring at a high level has the advantage of being able to reduce to ordinal and nominal levels, but not the other way around. Measurements at a lower level, although not ideal, are acceptable if reliability, response rate and need necessitates (de Vaus, 1996: 132). The feedback by the users of the data required that the questionnaire layout be structured in different sections, and that nominal variables be separated from ordinal ones.

During the second phase of pre-testing and revision the questionnaire is further developed through input received in sample testing. These responses are made as part of undeclared testing where the respondent completes the survey as if it is the real thing. A representative sample of 30 students, 21 males and nine females, was selected from a population of 174. The sample consisted of six 19-year-olds, twelve 20-year-olds, and twelve 21-year-olds. The sample is representative of the five different schools of study at the SAMA: seven from Human and Organisation Development (HOD), five from Organisation and Resource Development (ORM), two from Technology (T), five from Security and Africa Studies (SAS), and ten from Technology and Defence Management (T&DM).

The responses are analysed by means of an item analysis and reliability testing, after which changes can be made to the questionnaire. An item analysis will determine the difficulty of each item (question), the discrimination of items, and the effectiveness of alternatives within each item. According to Berg, Bergeron, Seitz, Monroe and McConnell (2007: 4), an item analysis will answer questions such as: "did the item function as intended, were the items of appropriate difficulty, were the items free of irrelevant cues and other defects, and were each of the distracters effective for multiple choice questions?" Although the aim is to improve the questionnaire, no questions will be eliminated during this stage, but the risk areas will be highlighted so that they can be tested again in the main survey when the total population is included. The reasons for not eliminating questions are twofold. Firstly, the questions on knowledge, although adjusted, are comparable to American surveys already completed. Secondly, questions that have a high difficulty index in America may have a low sample difficulty index and vice versa, and therefore need to be further investigated in the main survey.

Item difficulty (P), according to Althouse (2000: 4), is defined as the proportion of respondents who answer the question correctly. For example if 75 of 100 respondents answer the question correctly, the item difficulty is 75%. In agreement with Nunnally, as quoted by Venter (2006: 13), this rate is actually a misnomer, because it actually indicates how easy a question is. However, given the definition of item difficulty it can be argued that an item difficulty of 10% means that a question is too difficult, and that an item difficulty of 90% means that a question is too easy, and that both should be discarded. Yet, according to Venter (2006: 14) such items can be retained to prove a point or provide useful information. Although it may be argued that the inclusion of easy and difficult questions even out the test, Berg, *et al.* (2007: 4), warns that the inclusion of both easy and difficult questions can undermine reliability of the test. The difficulty level of an item should be slightly more than half way between one and the guessing level for that item. The guessing level for a four-alternative, multiple-choice item is equal to ¼, which is .25. The optimal level is then calculated as .25 + (1 – .25)/2, resulting in a .62 difficulty index (MEC Item Analysis, 2009: 3).

The item difficulty index calculated for the knowledge questions during the pre-test indicated that the question on retirement (.9), on tax increase (.93), and on the use of an ATM (.9) were too easy with an item difficulty of 90% and higher. The most difficult question was on the safest option for the keeping of money (.03). As a result, the questions on tax increase and the use of an ATM were changed slightly. The question on the safest place to keep/invest money remains as is, because firstly it measures the important aspect of risk and return. Secondly, this question had a 90.2% difficulty index in the 2004 Personal Financial Survey completed in the USA by grade 12s. Nonetheless, the question is moved to a later stage in the questionnaire. Table 5.1 indicates the difficulty index, discrimination index, point biserial correlation, item to total correlation, alpha if item is deleted, and the distribution of answers for each knowledge item in the questionnaire.

The item discrimination index (D) indicates the difference in correct responses between two extreme groups. For example if 75% of the top respondents (P_t) and 30% of the bottom respondents (P_b) get the answer correct the item has a discriminatory index of .45 (P_t-P_b). The optimal split of respondents is 27% each for the top and bottom. This index according to Venter (2006: 14) is used to determine the extent to which each item measures the same aspect as the total test in which it was included. According to Krus and Ney (1978: 135) the discrimination index for the correct answer should be significantly greater than zero and or practical significance. An item is considered poor if the discrimination index is below .20, while above .40 is considered high (Allen, Stone, Rhoads, & Murphy, 2004: 6).

Table 5.1: Item Analysis

Item	Difficulty Index	Discrimination Index	Point Biserial correlation	Item-to-total correlation	Alpha if item deleted	Distribution of answers to alternatives%			
						1	2	3	4
8	0.90	0.13	0.15	0.22	0.70	10.0	90.0	0.00	0.00
9	0.60	-0.13	-0.25	-0.14	0.73	10.0	60.0	0.00	30.0
10	0.37	0.63	0.23	0.34	0.69	20.0	6.7	36.7	13.3
11	0.73	0.38	0.32	0.41	0.69	0.00	0.00	73.3	16.7
12	0.30	-0.13	-0.15	-0.05	0.72	23.3	30.0	30.0	6.7
13	0.60	0.38	0.15	0.26	0.70	13.3	10.0	60.0	10.0
14	0.93	0.25	0.42	0.47	0.69	93.3	6.67	0.00	N/A
15	0.57	0.5	0.31	0.41	0.69	56.7	30.0	13.3	N/A
16	0.47	0.88	0.63	0.69	0.66	46.7	20.0	16.7	13.3
17	0.53	0.38	0.25	0.35	0.69	16.7	53.3	3.33	26.7
18	0.23	0.13	0.02	0.11	0.71	33.3	26.7	23.3	13.3
19	0.43	0.63	0.43	0.52	0.68	26.7	10.0	20.0	43.3
20	0.03	0.13	0.29	0.33	0.69	76.7	3.33	10.0	0.00
21	0.50	0.88	0.52	0.6	0.67	50.0	6.7	26.7	13.3
22	0.83	0.5	0.47	0.53	0.68	6.67	6.67	3.33	83.3
23	0.43	0.13	0.06	0.17	0.71	46.7	10.0	43.3	N/A
24	0.90	0.25	0.31	0.37	0.69	3.33	6.67	90.0	0.00
25	0.47	0.38	0.10	0.21	0.7	3.33	26.7	46.7	23.3
26	0.50	0.5	0.27	0.37	0.69	13.3	20.0	13.3	50.0
27	0.50	0.5	0.27	0.37	0.69	6.67	50.0	13.3	26.7
28	0.57	0.63	0.43	0.52	0.68	13.3	16.7	56.7	10.0
29	0.77	0.5	0.42	0.49	0.68	10.0	73.3	6.7	0.00
30	0.50	0.63	0.37	0.46	0.68	6.67	6.67	50.0	33.3
31	0.80	0.5	0.43	0.5	0.68	80.0	10.0	6.7	0.00
32	0.33	0.5	0.25	0.35	0.69	20.0	23.3	16.7	33.3
33	0.67	0.38	0.23	0.33	0.69	6.7	13.3	10.0	66.7
34	0.17	-0.13	-0.13	-0.04	0.71	16.7	36.7	6.67	36.7
35	0.23	0.13	0.00	0.1	0.71	36.7	23.3	13.3	20.0
36	0.30	-0.13	-0.12	-0.02	0.72	30.0	30.0	36.7	0.00
37	0.60	0.25	0.04	0.15	0.71	60.0	6.7	20.0	6.7
38	0.47	0.63	0.47	0.56	0.67	23.3	20.0	6.7	46.7

An item discrimination index was developed using the responses of the top eight and the bottom eight of the 30 respondents. As can be seen in Table 5.1 of the 31 items there are nine items with a discrimination index of less than 20%. At this stage, it can be said that these items do not discriminate well between good and bad performers. Of the nine items, four have a negative discriminating index that is of serious concern. According to Sim and Rasiah (2006: 70) poor discriminatory items can be indicators of ambiguous wording, grey areas of opinion, or just wrong keys.

The distribution of answers between the alternatives indicates the distraction value of each alternative. Ideally, all alternatives should attract responses. However, if response or answer distribution is very similar (A=20%, B=20%, C=22% etc.) it can indicate possible guessing (Allen*, et al.,* 2004: 9). Venter (2006: 14) in her survey suggests that a distribution of responses to alternatives equal and bigger than 5%, is acceptable. According to Table 5.1 the distraction value posed by eight questions' alternatives was less than 5%, and the questions on the benefit and historical returns of investments (Q36), as well as personal taxes (Q32) suggest that respondents may have been guessing. Note should be taken that question 10 had five possible responses and the fifth response attracted 20% of responses. As suggested earlier the distribution of answers will be investigated in the main survey.

The fifth step in the questionnaire design process coincides with the second phase of questionnaire development by addressing the issues of reliability and validity. Reliability concerns itself with the score achieved, in other words can we trust the score? More scientifically, Berg*, et al.* (2007:3), defines reliability as a measure of the consistency of a test that provides an indication of the random error that may influence test scores. Random error can be caused by differences in time, content, scores, memory, and guessing (Berg*, et al.*, 2007: 3). The reliability of a test is also intrinsically influenced by factors such as: length of test (longer = reliability), objectivity (increase impartiality = increase reliability), time limits (between tests), spread of scores (bigger spread = reliability), and test item difficulty (items of middle difficulty increase variability and reliability) (Berg*, et al.*, 2007:3). Berg*, et al.* (2007:5) elaborate on factors that influence reliability by stating that measurement errors can be the result of the test taker, the test itself, testing conditions and test scoring.

According to the Research Methods Knowledge Base (2009: 1), there are four general classes of reliability estimates, each of which assess reliability in a different way. These classes are inter-rater or inter-observer reliability, test-retest reliability, parallel-forms reliability, and internal consistency reliability. Inter-rater or inter-observer reliability is used to determine the degree to which different raters/observers give consistent estimates of the same phenomenon. In this survey, there are no observations but rather questionnaires and therefore this reliability will not be assessed. Test-retest reliability determines the consistency of a measure from one time to another, which is not applicable for this survey as it is a once-off test. Parallel-forms reliability measures the consistency of the results of two tests that measure the same content domain and are structured the same. There is no similar test to be completed and therefore this assessment is also not required. The last class of reliability is internal reliability that assesses the consistency of results of items within the same test. This reliability assessment is the only one applicable for this survey and is now discussed in more detail.

Due to the fact that most tests are administered only once, internal consistency is the most common measure of reliability (Allen*, et al.,* 2004: 5). Internal consistency can be measured using split-half, Kuder-Richardson, Cronbach's alpha (1951). Cronbach's alpha is an adaptation of Kuder-Richardson Formula 20 (1937). The results are indicated in Table 5.2.

With split-half reliability, the 31 knowledge items were divided into the even and uneven questions and each group included the 31st item. The split-half reliability computed indicates the correlation between these scores and amounted to .73. According to Barba (2007: 4), the ideal score is .8 and thus this measure falls slightly short. However, the Coefficient alpha or internal consistency reliability is .71 for the knowledge part of the questionnaire. This is relatively high, indicating that scores are not really influenced by measurement errors. This finding is supported by the Kuder-Richardson (K-R) for the knowledge section, which is equal to .7, and the K-R 21 which is .62. A further measure of internal consistency for the knowledge section is Cronbach's alpha that was measured at .7 with a standard error of measurement of 4.48. Although Pallant (2001: 87) accepts .7 as reliable, some authors prefer a value above .80. As indicated by the University of Iowa (2003: 9) the interpretation of reliability estimates depends on how the scores will be used, but if a decision rests on a single score, reliability needs to be high. Thus far, most of the reliability measures present acceptable levels of reliability.

The point-biserial correlation, however, raises concern. The point-biserial correlation is the correlation between the right/wrong answer per item and the total score received by the respondent (Varma, 2006: 1). These values range from -1.0 to 1.0 and a high positive value indicates that the respondents who scored a high total score also got the item correct. Items that raise concern based on the point-biserial correlation are: 8, 9, 12, 18, 23, 25, 33, 34, 35, 36, and 37. A closely related correlation to the point-biserial correlation is the item total correlation reflected in Table 5.1. The item total correlation indicates the relationship between a specific item and the total test score (Barba, 2007: 6). The difference between point-biserial and item-to-total correlation is that when calculating point-biserial correlation the item is subtracted from the total, which is not the case in item-to-total correlation. Although Barba suggests that a good item to total score should be between .4 and .6, Venter (2006: 14) quotes Parmenter and Wardle who indicate .2 as the minimum requirement. As can be seen from the table there are seven items that should be discarded if .2 is the criteria. The questionnaire items not included in either of the tables are nominal items and are treated as such. The tables only reflect the financial knowledge, behaviour, and attitude items with ordinal scales.

Cronbach's Alpha if-item-deleted helps identify which items contribute the most to overall lack of reliability (Berg*, et al.,* 2007: 7). A question that contributes favourably to reliability will have an alpha-if-deleted below the overall alpha. If, however, that item is deleted it will decrease the overall alpha which will decrease the reliability. Allen*, et al.* (2004: 7), however, suggests that items should be kept if they are too important to omit. Table 5.1 indicates the items-if-deleted with lower alphas for the knowledge section and Table 5.2 indicate the items with lower alphas if deleted for the financial behaviour and attitude sections. As discussed, these items are normally discarded, but in this case, they are only red flagged to be scrutinized in the next chapter. Reliability, however, does not constitute validity.

Validity, according to Allen*, et al.* (2004: 2), is the extent to which an instrument measures what it claims to measure. Types of validity are the already-discussed face and content validity, and validity such as concurrent validity, predictive validity, incremental validity, and construct validity. Validation studies can be conducted as criterion-related validation, content-related validation, or construct related validation (de Vaus, 1996: 56).

Table 5.2: Reliability Analysis

Item	Cronbach's Alpha	Alpha if item deleted	Actions
Question 8-38	.70	See Table 5.1	Red flags to be scrutinized in Chapter 6.
Question 7	.83	If any question is deleted it leads to a decrease in alpha.	Question was changed to include more items (from 10 to 16). Should improve reliability.
Question 44	.79	If any question is deleted it leads to a decrease in alpha	In the behavioural section 6 items are added. Behavioural questions are ordinal 3-point Likert scales.
Question 45 45b	.54	 .6	Question was changed from dichotomous scale to a 3-point Likert scale. Items were also structured differently to improve the reliability of the financial attitude section.
Question 47 47a 47b 47c	.77	 .78 .8 .79	No changes made. These items are red flagged for main survey interpretation.
Question 49 49e	.67	 .83	Changed question from a 5-point Likert scale to a 3-point Likert scale.

The definition offered by de Vaus (1996: 56) of criterion validity suggests that responses to this financial literacy questionnaire be compared with responses to existing well-accepted financial literacy questionnaires (de Vaus, 1996: 56). These responses should be by the same group. If responses are highly correlated, it can be taken that the new financial literacy questionnaire is valid. Unfortunately, there is not an existing well-accepted financial literacy questionnaire in place, so criterion validity cannot be assessed.

Content validity "… emphasizes the extent to which the indicators measure the different aspects of the concept" (de Vaus, 1996: 56). According to de Vaus (1996: 56) content validity will depend on the definitions of the concepts that are tested. As mentioned earlier the questionnaire is assumed to have content validity because use is made of questions from existing questionnaires and various experts were consulted in the design of the questionnaire.

The third validation assessment is construct related validation. According to the construct validity definition, as offered by de Vaus (1996: 56-57), this developed financial literacy questionnaire or measure will be valid if it conforms to theoretical expectations. The logical question therefore is: What are the theoretical expectations? From the literature review, it is clear that the South African educational system has not made provision for the education of financial literacy thus far (see Chapters 4 and 5). If there is conformation with theoretical expectations then the financially illiterate will be the ones that are struggling financially, and the measure will illustrate predictive validity.

Predictive validity refers to the measure in which findings of the measure are generalizable to the defined population. If there is a high correlation between low knowledge levels and low saving behaviour of sample respondents, it can be expected that for the population the unknowledgeable will also not save. However, before such conclusions are made notice should be taken of the threats to validity such as ecological fallacy and reductionistic tendencies. Ecological fallacy is when group conclusions are individualized and vice versa (Mouton & Marais, 1996: 41). Reductionistic tendencies will be the danger of assuming that this financial literacy questionnaire is the only measure of financial literacy and that the increase in wealth only depends on the questions asked (Mouton & Marais, 1996: 41).

The third phase of the pre-test step is to polish the pilot test, according to Converse and Presser as quoted by de Vaus (1996: 100). Having had expert academics and financial practitioners evaluate the content of the questions, and a sample of the subject population complete the test as if it is the real thing, the necessary changes were made and again presented to a language expert, and a statistician, Nel of the Centre for Statistical Consultation.

Upon the return of the questionnaire, changes were made before the main survey was completed. Some remarks by Nel in May 2009 are quoted:

- questions 14, 15, and 35 from the knowledge section had either more or less possible responses than the average four per question. This is not a problem seeing that questions on knowledge are either wrong or right;
- questions 29, 32, and 38 are not ordinal scales and cannot be included in testing reliability. Once again this is not a problem due to the question being either wrong or right;
- questions on financial attitude such as 45b and 45d are negative and responses will have to be turned around. This will be done when data is captured;
- reliability can be tested for the knowledge section, questions 43 and 44 of the behavioural section, and the attitude section.

The questionnaire is now ready for the main survey. The test that has been developed is a financial literacy test that meets the criteria of good test construction. The test has curricular or content validity as determined by judges. The test discriminates between good and poor students as determined by item analysis. The reliability of the instrument was assessed using various correlation coefficients and proved to be acceptable. The test is objective and economical from the standpoint of administration. The test is designed to test the financial literacy knowledge, financial behaviour and attitude and measure the ownership of financial products.

5.4 CONCLUSION

Having analysed financial literacy contextually and conceptually in Chapters 3 and 4, this chapter illustrates the development of a measurement instrument for financial literacy by following a five-step approach. In the first step, the required information was determined as well as from whom it should be sought. The required information is the knowledge, behaviour and attitude of full-time income earners towards financial issues such as financing, investing, planning and managing finances. In the second step, it was decided that use would be made of self-administered questionnaires as an interview method, not exceeding an average completion rate of 30 minutes and 16 pages. During the third step, the draft questionnaire was prepared by addressing the features of question content, question wording, response format, and structure and layout. This was done after taking note of ethical considerations such as voluntary participation, informed consent, harm to participants, and anonymity and confidentiality.

Question content is primarily determined by the research problem, the indicators of financial literacy, personal hunches, by the way in which data will be analysed, and the method by which the questionnaire will be administered. The primary source of questions for this measurement instrument was existing international questionnaires. Not only does the use of existing questionnaires and questions improve the validity and reliability, it also allows for making comparative assessment.

The fourth step of questionnaire development was rather an important one, where the draft questionnaire was pre-tested and revised. Two different groups participated in this process. A group of academics and financial practitioners evaluated the questionnaire as part of question development – the first stage of pre-testing. During the second stage questionnaire development took place when first-year students at the SAMA completed the draft questionnaire as if it was the real test. During this stage, data was statistically evaluated as part of item analysis and in determining the validity and reliability of the measure instrument. The results were listed in tables and problem areas were red flagged for closer scrutiny. With regard to reliability assessment, various measures were used and all indicated acceptable reliability levels of about .7. Face and content validity was established by making use of questions from existing questionnaires and in consulting subject experts. Preliminary changes were made according to the input received. The questionnaire is now ready to be completed as a main survey.

The main survey will be completed at the SAMA by first-year students as representatives of full-time income earners. The results of the main survey will be scrutinized in the next chapter. Chapter six will draw conclusions, firstly, on the descriptive results of the survey, and secondly, but more importantly, on the validity and reliability of the financial literacy measuring instrument. Changes and suggestions will then be made on the final financial literacy measurement instrument.

CHAPTER 6

SUMMARY, FINDINGS AND CONCLUSIONS

6.1 INTRODUCTION

In the previous chapter (Chapter 5), the contextual and conceptual analysis of financial literacy was operationalized as a measurement instrument of financial literacy. The measure instrument is a questionnaire developed through a five-step approach within an ethical framework of voluntary participation, informed consent, no harm to participants, and anonymity and confidentiality. The five steps identified the required information and from whom it should be sought, determined the interview method and length of the questionnaire, constructed a draft questionnaire, pre-tested and revised the draft questionnaire, and ultimately assessed the reliability and validity of the questionnaire. Although these steps were completed in the previous chapter the validity and reliability were assessed by making use of a sample group of 30 respondents in a pre-test, and not a main survey. The results of the pre-test raised red flags and concern with regard to certain items, and resulted in minor changes made to wording and layout. No questions were eliminated during the process in Chapter 5 because of contradiction between item analysis findings on the same questions. Clearly, this is an issue that needs to be resolved in this chapter.

This chapter will summarize the process followed in this research of developing a financial literacy measurement instrument, present the findings on the instrument, and then draw conclusions and make recommendations as to how the measurement instrument can be improved and applied. The specific research objectives of Chapter 6 are:

- to summarize the process of developing a measurement instrument that measures financial literacy as a management core competency;
- to produce findings on the descriptive analysis of the main survey, and to determine the reliability and validity of the financial literacy questionnaire;
- to draw conclusions and make recommendations with regard to limitations of this research, the measurement instrument, and future research.

6.2 SUMMARY OF PROCESS OF DEVELOPING FINANCIAL LITERACY MEASUREMENT INSTRUMENT

6.2.1 Introduction

Since 1994, this country has seen various changes made in the education and training policies on a national level. Some of the most significant changes in education and training occurred during 1997 with the Green Paper on Skills Development and the White Paper on Education. Both these documents changed the way that education and training are approached and managed.

The Green paper on Skills Development resulted in the Skills Development Strategy (SDS), SAQA, NQF and the Setas, each with its own objectives. The mission of the SDS is to contribute to sustainable development of skills, and this is supported by the SAQA Act 1995 that promotes the creation of a unified system of education and training qualifications by means of the implementation of the NQF. One of the main objectives of the NQF is to contribute to the full personal development of each learner and the social and economic development of the nation at large. Setas are part of the NQF and are structured to plan and regulate the provision of education and training.

The Education White Paper defined the role of higher education and the National Plan for Higher Education that affects SU and the SAMA. The aim of the Education White Paper (RSA, 1997: 4) is to provide ways and means for the reconstruction and development of South African society. Amongst others, the role of higher education, and hence SU and the SAMA, in a knowledge-driven world is human resource development and high-level skills training. “The overall well-being of nations is vitally dependent on the contribution of higher education to the social, cultural, political and economic development of its citizens” (Council on Higher Education, 2000: 25-26). Naturally, these objectives were taken up by SU, as a constituent to Higher Education, in its assessment of what the ideal students’ characteristics should be. To mention a few: “shaping developed and cultivated people whose potential is unlocked in a balanced manner to the maximum profundity and breadth”, “training people…to play a constructive role in the responsible and sustainable development (and so) contribute to the well-being and quality of life of people”.

The role of Higher Education is also addressed by the SAMA in developing a student profile that is based on the generic outcomes set by the Higher Education Quality Committee. A few of these outcomes are highlighted: "…organising and managing oneself and one's activities responsibly and effectively…", "…developing entrepreneurial opportunities…", "…contributing to the full personal development of each learner and the social and economic development of society at large…", and "…exploring education and career opportunities…".

However, Swart of Unisa stated in the May 2005 edition of *Management Today* that financial empowerment of learners and young people has not been addressed by the educational system as a whole. Support for this statement was found in a preliminary assessment done in February 2006 that found the financial literacy level of 172 first-year students to be an average of 48.86%. The validity and reliability of these statements are doubtful, and therefore the primary research problem to be addressed in this study is:

The development of a reliable and valid financial literacy measurement instrument that is scientifically and socially relevant in the South African context.

In developing such a measurement instrument the author was guided by the following questions:

- Is financial literacy a management core competency?
- What is financial literacy?
- What constitutes a financial literacy measure?
- Are the first-year officers at the SAMA financially literate?
- What is first-year SAMA students' own perception of their financial literacy (financial knowledge and behaviour)?
- What is the attitude and behaviour of young officers towards financial issues?
- What financial products do first-years at the SAMA have?
- How can the financial literacy measurement instrument be improved in view of the application and validation of the measure in this particular case?

These questions were addressed comprehensively in the previous chapters and are summarized in the following sections.

6.2.2 Financial Literacy as Core Competency

The aim of Chapter 2 was to define and identify the competencies required by a manager, a public sector manager, and then an officer in the SANDF at the entry level, that is, a lieutenant to the rank of a full colonel. The idea was to establish if financial literacy is a core competency of public managers, and of the ideal officer in the SANDF.

Firstly, competency was quoted as defined by Draginidis and Mentzas (2006: 53) as a combination of tacit and explicit knowledge, behaviour and skills, which gives someone the potential for effectiveness in task performance. Secondly, general management competencies were identified depending on the role and functions that need to be performed, and ultimately Boyatzis' application of competency clusters, which indicate the required competencies to specific levels of management, was accepted for the entry-level manager. No specific reference to financial literacy as a management competency could be found.

Thirdly, the public management competencies were identified after acknowledgement that there are differences that exist between private and public management. Virtanen's competency clusters were accepted as the basis for this research. Once again, no mention is made of financial literacy. Lastly, a profile was created for the officer at lower management level by scrutinizing performance assessment criteria, educational offerings, code of conduct and the preliminary competencies as identified by Chief Joint Training. Finally, financial literacy was identified as one of the competencies required within the personal mastery requirement.

Therefore, financial literacy is a core competency for the officer, who is also a public official. This conclusion can also be validated by the competency definition offered by Draginidis and Mentzas (2006: 53), which states that the task description prescribes the required competencies. Although not specified in the public management competency framework, Virtanen identified resource allocator, project evaluator, entrepreneurial and financial management as part of the 55 competencies for public managers. It could be argued that these competencies require financial literacy as a basis.

Thus, financial literacy is a required public management competency and therefore as quoted by Young and Dulewicz's (2005: 228): "As long as there is potential gain to be derived from identifying the relationships between managerial success and the individual attributes, there is a clear need for studies exploring links between managerial performance, specific competencies and underlying personality." But what exactly is financial literacy and what questions should be asked to measure financial literacy so that it can be explored? If defined as primarily a competency it is: "…a combination of tacit and explicit knowledge, behaviour and skills…" This definition, however, is general and ambiguous and therefore this study needed to clarify financial literacy contextually and conceptually. Consequently, Chapter 3, as summarized in the next section, addressed the contextual nature of financial literacy by identifying the need for financial literacy, and the presentations and impact of financial literacy training and education at a global and national level.

6.2.3 Financial literacy: A Contextual Analysis

Financial literacy is a personal mastery skill, and as such a management competency required by military officers as public managers. As discussed in the previous section a proper unambiguous definition had to be found before it can be measured. Therefore, Chapter 3 focused on the description of financial literacy in order to determine the contextual nature of financial literacy. This was done by scrutinizing the need that exists globally, nationally, and within the organisational environment for financial literacy, and the scope and results of financial literacy education and training presentations.

On the global level, there is concern for the ineffective utilization of limited resources, the lack of social cohesion due to low savings and building of capital, and unproductive global debate due to being financially ill informed. At the national level, the effective functioning of markets depends on people being financially literate so that the imbalances between supply and demand do not have to be regulated as severely. Governments also want individuals to take more responsibility for personal risks and retirement by managing debt and accumulating assets. At the organisational level being financially illiterate leads to financial stress, ineffective employees (Chen & Volpe, 2005: 7), time being wasted, and in the worst case, fraud.

Financial stress rates as the highest of the five major sources of stress, being five times higher than health concerns, and can lead to serious consequences for organisations such as the SANDF. The SANDF can experience decreased operational readiness, increased substance abuse, safety issues, and significant administrative time lost to the processing of pay adjustments, security clearance changes, and reassignments if soldiers are not financially literate.

Various financial literacy training and education initiatives are presented internationally and nationally to address the need for financial literacy and therefore financial well-being. These presentations are driven, internationally, by various stakeholders ranging from governments to private institutions, individually and in collaboration, and are aimed at improving skills, knowledge, and financial behaviour by addressing broad financial literacy, investment, savings and indebtedness.

From the research, it is clear that the financial literacy education and training of SANDF members pales in comparison to military members in the USA. Financial literacy education and training of SANDF members is limited to the efforts at the SAMA, and there are no combined efforts with financial institutions. On the positive side, it would seem that the SAMA is the only military academy, and arguably faculty, to include a compulsory financial literacy module for all students.

In studying the impact of financial literacy education and training, the impact assessment of the success of various American presentations is not conclusive. However, according to Todd (2002: 6), we should be *"carefully optimistic"* about the impact of financial literacy education and training. Given the positive impact of university-affiliated education, the SAMA can make a difference. Following an outcome-based approach to financial literacy education and training, financial literacy outcomes have to be identified, but this can only be done once financial literacy as a concept is accurately defined and conceptualized. The definition of financial literacy provides the concepts, and the inclusion of the concepts in a measurement instrument will prove validity.

6.2.4 Financial Literacy: A Conceptual Analysis

A valid and reliable measurement instrument depends on concepts that are to be derived from a defined phenomenon. In Chapter 4 a suitable definition of financial literacy was identified to be a never-ending process of being able to "… read, analyse, manage and write about the personal financial conditions that affect material well-being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy" (Vitt, *et al.,* (2005: 7) (2006: 14). The concepts identified are essential mathematical, reading and comprehension skills, financial knowledge and understanding, and competent financial behaviour and attitude. These concepts incorporate ability in the form of financial knowledge, attitude, skills, awareness and behaviour in addressing the specific financial issues a person faces in order to improve financial well-being.

The ability and financial issues were then contextualized by focusing on 18-24-year-olds. The financial issues that were identified to be important, for this case study, were the functional requirements of the SANDF, the learning area outcomes within the SA educational environment, the internationally accepted financial literacy outcomes, the financial information needs of 18-24-year-olds, and the general outcomes associated within the life cycle that is applicable to 18-24-year-olds. In summary, an 18-24-year-old should illustrate financial understanding, financial competence, and financial responsibility. In laymen terms they should be able to make ends meet; to keep track; to plan ahead; to choose appropriate products and to stay informed.

Ability, according to Roy Morgan Research and Widdowson and Hailwood, can be divided into basic requirements and the advanced competence required to be financially literate. From their research it is clear that ability is not only about having skills and knowledge, but it is also about perceptions, attitude, and behaviour. Although authors such as Hilgert and Hogarth give a list of acceptable behaviours, caution should be applied in labelling behaviour as indicative of the level of financially literacy. Different approaches to money will result in different financial behaviour, and not all are unacceptable. Nevertheless, a list of acceptable behaviour is available and with it a list of the financial products that indicate effective financial behaviour.

As a result Chapter 4 provided an acceptable definition of financial literacy that indicates the financial issues that 18-24year-olds are faced with, an indication of the basic requirements and advanced competencies necessary to be financially literate, an indication of acceptable financial behaviour, and a list of financial products that indicate positive financial activity. These elements should be included in a measurement tool that measures financial literacy.

6.2.5 Measuring Financial Lliteracy: A Questionnaire-based Measurement Tool Approach

Having established the importance of education and training, and the importance of financial literacy as a core competency, this research has developed financial literacy conceptually and contextually in order to arrive at the elements that constitute financial literacy. These elements were identified by taking into consideration the ability required to address financial issues. The challenge in Chapter 5 was to create a reliable and valid measurement instrument of financial literacy that measures the ability to address financial issues effectively.

In order to do so the concepts as identified in Chapter 5 had to be operationalized as indicators and then constructed as questions. This was done following a five-step approach within an ethical framework of voluntary participation, informed consent, no harm to participants, and anonymity and confidentiality.

In the first step, the required information was determined as well as from whom it should be sought. The required information is the knowledge, behaviour and attitude of full-time income earners to financial issues such as financing, investing, planning and managing finances. In the second step, it was decided that use will be made of self-administered questionnaires as an interview method, that the questionnaires would have 16 pages and not exceed an average completion rate of 30 minutes. During the third step, the draft questionnaire was prepared by addressing the features of question content, question wording, response format, and structure and layout.

Question content is primarily determined by the research problem, the concepts and indicators of financial literacy, subjective knowledge and experience, by the way in which data will be analysed, and the method by which the questionnaire will be administered. The primary source of questions for this measurement instrument was existing international questionnaires. Not only does the use of existing questionnaires and questions improve the validity and reliability, it also allows for comparative assessments. Annexures 2 and 3 indicate how the relevant questions were constructed.

The fourth step of the questionnaire development was rather an important one, where the draft questionnaire was pre-tested and revised. Two different groups evaluated the questionnaire during this step. A group of academics and financial practitioners evaluated the questionnaire as part of question development – the first stage of pre-testing. During the second stage of questionnaire development, first-year students at the SAMA completed the draft questionnaire as if it was the real test. During this stage, data was statistically evaluated as part of item analysis and to determine the validity and reliability of the measurement instrument. The results were listed in tables and problem areas were red flagged for closer scrutiny. With regard to reliability assessment, various measures were used and all indicated acceptable reliability levels of about .7. Face validity was established by determining respondents' reactions to the pilot test, and content validity by making use of questions from existing questionnaires and in consulting subject experts.

Although favourable results were determined in assessing the validity and reliability, these results stemmed from a sample group of only 30 respondents in a pre-test. Despite it being a sample, the results of the pre-test raised red flags and concern with regard to certain items, and resulted in minor changes being made to wording and layout. However, no questions were eliminated during the process in Chapter 5. Firstly, because of the limited sampling, and secondly, because of contradictions that existed between item analysis findings on the same questions internationally.

As a result, these findings and red flags need to be assessed in a main survey. In the main survey 134 first-year students at the SAMA were used as representatives of full time income earners. The main survey was completed and the data gathered was analysed by Nel of SU, Centre for Statistical Consultation. The results as presented in Section 6.3 draw findings on, firstly, the descriptive results of the survey, and secondly, but more importantly, on the validity and reliability of the financial literacy measuring instrument. These findings are now briefly discussed, followed by the conclusions and recommendations.

6.3 FINDINGS ON DESCRIPTIVE RESULTS, RELIABILITY AND VALIDITY

As a result of the process as explained in the previous section a measurement instrument was developed in the form of a questionnaire, and although assessed for reliability and validity in the pre-test it needed to be scrutinized thoroughly so that conclusions can be drawn on its reliability and validity, and recommendations be made. This section provides the findings, firstly of the descriptive analysis, and secondly, the reliability and validity as a measurement instrument. The descriptive analysis provides information on demographic data and the scores obtained for the knowledge, behaviour, and attitude sections of the measurement instrument.

6.3.1 Demographic Data

Demographic data regarding the main survey is provided in order to contextualize the survey and to provide a background from which results are interpreted. The 134 respondents included 93 (72%) males and 36 (28%) females. Of these respondents 11 (9.8%) was 20 years old, 9 (8%) were 21, 15 (13%) were 22, 21 (19%) were 23 years old, 15 (13%) were 24 years old, 41 (37%) were 25 and older, with an average age of 23.7 years. The 134 respondents indicated the following, amongst others:

- 38 (28%) do not survive financially;
- 38 (29%) have been cheated financially;
- 25 (19%) have attended some financial literacy course;
- 20 (24%) save nothing and 8 (7%) save more than 30% of their gross monthly salary;
- 34 (25%) did economics, 98 (73%) did mathematics, and 43 (32%) did accountancy at school;
- 56 (21%) of their parents do not have matric, while 59 (22%) of their parents studied after matric;
- 59 respondents (45%) are more thrifty than their guardians although only 51 (38%) are somewhat thrifty and save money often;
- 68 (53%) rate comparison shopping for a loan as very important, and only 59 (45%) think that it is important to diversify investments;
- 110 (85%) rate following a monthly budget as very important, 44 (33%) have a budget in writing, and 52 (39%) follow a monthly budget;
- 97 (75%) are praying that their finances will work out in the end, but only 56 (43%) have a plan in place for the future;
- 78 (60%) are confident enough to teach others about basic finances although only 60 (47%) believe they are a good role model for children learning about saving and spending;
- 58 (45%) believe that they will have enough to retire on;
- 81 (62%) believe that you have to save to be financially successful, and 60 (47%) believe that it takes money to make money;
- 32 (24%) have a credit card, and 21 (16%) have personal loans;

- 108 (81%) do not own shares or mutual funds;
- 88 (66%) have a will, and 20 (15%) keep financial records for tax purposes.

6.3.2 Knowledge, Behaviour, and Attitude

The following descriptive analysis was completed on the knowledge, behaviour and attitude sections of the responses. As can be seen in Table 6.1, and Figure 6.1, the 134 respondents scored an average knowledge mark of 50.17% before items were deleted from the knowledge section of the questionnaire. The average mark increased to 55.55% after questionable items were deleted, as discussed later. Both these marks are lower than the average received when knowledge was self-graded (60.80%). The two retirement questions proved to be the easiest (72.02%) with the eight investment questions the most difficult (39.37%).

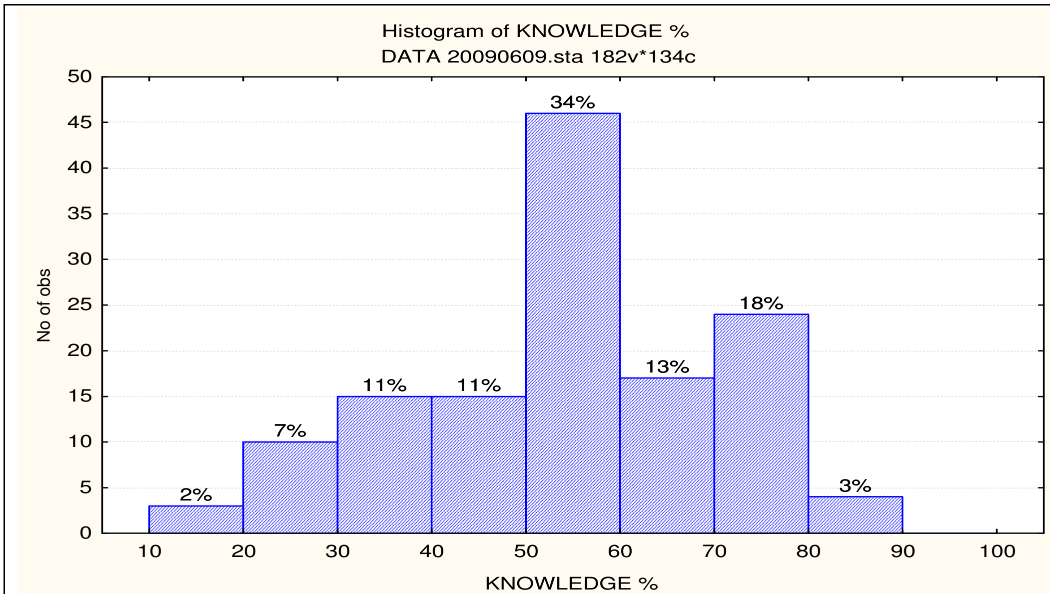

Figure 6.1: Histogram of knowledge %

Source: Nel, 2009.

Behaviour and attitude questions depended on self-reporting and therefore are most probably inflated. The result of the questionnaire suggests that first-year students at the SAMA have average financial knowledge of 55.55%, financial behaviour of 69.85%, and an attitude of 77.11%, suggesting that respondents are knowledgeable and illustrate positive financial behaviour and attitude. Figure 6.2 indicates the percentage achieved for financial behaviour and Figure 6.3 indicates the percentage achieved for financial attitude.

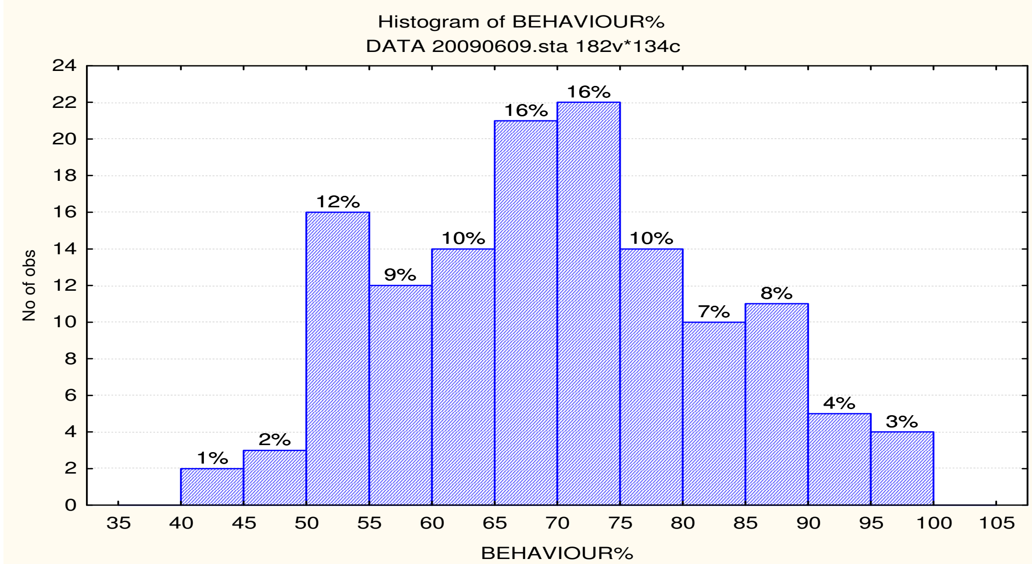

Figure 6.2: Histogram of behaviour %

Source: Nel, 2009.

Individuals that scored less than these averages can be seen as financially less literate. The average achieved for financial attitude correlates well with the findings in Britain that 8 out of ten adults indicated that they are confident in dealing with financial affairs (Clementi, 2004: 2).

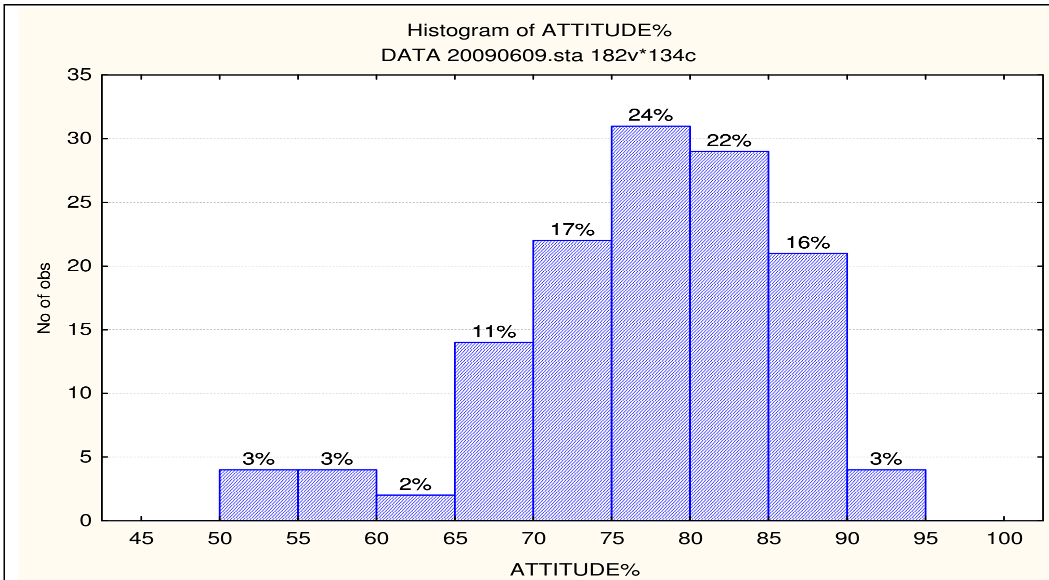

Figure 6.3: Histogram of attitude %

Source: Nel, 2009.

Table 6.1 also illustrates the mean, median, minimum, maximum, lower quartile, higher quartile, and standard deviation for the knowledge items on credit, income and expenditure, inflation, insurance, investments, retirement, and taxes. It is clear from the table that knowledge is less than 50% for questions on inflation, insurance and investments and this raises concern.

Table 6.1: Descriptive Statistics of Financial Knowledge, Behaviour and Attitude

	Mean	Median	Minimum	Maximum	Lower Quartile	Higher Quartile	Std. Dev.
Knowledge							
Self Graded	60.80	60	20	100	48.75	72.38	16.64
Credit	49.53	50	0	100	37.5	62.5	19.71
Income and expenditure	58.66	60	0	100	40	80	26.21
Inflation	43.28	0	0	100	0	100	49.73
Insurance	42.54	33.33	0	100	33.33	66.67	29.30
Investments	39.37	37.50	0	75	25	50	13.84
Retirement	72.02	100	0	100	50	100	30.97
Tax	58.96	50	0	100	50	75	25.17
Test%	50.17	51.61	25.81	74.19	41.94	58.07	12.41
Test% if items deleted	55.55	56	20	84	44	68	16.15
Behaviour							
Behaviour%	69.85	68.69	42.42	96.08	60.42	78.43	12.64
Attitude							
Attitude%	74.59	76.03	51.72	90.80	70.15	79.55	7.66
Attitude% if items deleted	77.11	78.20	51.28	93.59	71.80	83.33	8.62

The main question, however, is if the measurement instrument accurately measures what it is actually supposed to measure. To assess the reliability and validity of the measurement instrument the next section will begin with an item analysis of the knowledge, behaviour and attitude sections, followed by the findings on the validity of the measurement instrument.

6.3.3 Item Analysis

In order to assess the reliability and the validity of the measurement instrument an item analysis was completed on the three elements of the financial literacy instrument of which knowledge was the first one. This section consists of 31 questions, and in Chapter 5 various items from this section were highlighted as possibly inconsistent. Three items had an item difficulty of at least .90 (too easy) and two items were less than .20 (too difficult). Furthermore, nine items had a discrimination index of less than .20 of which four are negative, and the distraction value of possible answers for question 8 was less than 5%. The pre-test results for questions 32 and 36 also indicated possible guessing by respondents. The results for the main survey are illustrated in Table 6.2 revealing the difficulty index, the discrimination index, and the distribution of answers for the main survey. The first column of the table indicates the item number in the questionnaire.

The second column illustrates the item difficulty index (P) that was calculated in determining how many respondents of the total group correctly identified the right answer. Questions 8, 11, 14, and 24 proved to be easy questions with a P value of above .80. Question 20 is the most difficult question with a P value of less than .20.

Significant changes between the sample and main survey results are question (Q) 11 from .73 to .88, Q18 from .23 to .30, Q20 from .03 to .11, Q22 from .83 to .69, Q23 from .43 to .28, and Q27 from .5 to .23. The results of the easy questions that were changed in the previous chapter remained very much the same: Q8 remained at .90, Q14 changed from .93 to .90, and Q24 from .90 to .85. The most difficult question was Q20, and it improved from .03 to .11. Based on these results Q20 should be deleted.

An item discrimination index (D) was calculated by using the top 36 and the bottom 36 respondents if item is not deleted. With the assessment of the sample in the previous chapter, there were nine items with a D of less than .20, of which four items had a negative D value. These items' D value, however, improved in the main survey: Q9 from -.13 to .25, Q12 from -.13 to .14, Q34 from -.13 to .11, and Q36 from -.13 to .14.

Table 6.2: Item Analysis of Knowledge Section

Item	Difficulty Index (P)	Discrimination Index (D)	Distribution of answers to alternatives				
			1	2	3	4	5
8	0.90	0.08	0.03	0.90	0.03	0.04	N/A
9	0.53	0.25	0.06	0.53	0.08	0.31	N/A
10	0.43	0.08	0.21	0.18	0.43	0.17	N/A
11	0.88	0.28	0.01	0.02	0.88	0.08	N/A
12	0.39	0.14	0.29	0.39	0.22	0.09	N/A
13	0.52	0.42	0.23	0.22	0.52	0.03	N/A
14	0.90	0.28	0.90	0.06	0.04	N/A	N/A
15	0.48	0.47	0.48	0.24	0.28	N/A	N/A
16	0.51	0.50	0.51	0.15	0.16	0.18	N/A
17	0.43	0.28	0.15	0.43	0.07	0.34	N/A
18	0.30	0.11	0.38	0.30	0.23	0.08	N/A
19	0.33	0.39	0.31	0.17	0.19	0.33	N/A
20	0.11	-0.14	0.78	0.11	0.09	0.01	N/A
21	0.63	0.58	0.63	0.19	0.10	0.07	N/A
22	0.69	0.56	0.09	0.06	0.15	0.69	N/A
23	0.28	0.39	0.44	0.27	0.28	N/A	N/A
24	0.85	0.42	0.02	0.07	0.85	0.05	N/A
25	0.38	0.58	0.08	0.23	0.30	0.38	N/A
26	0.54	0.42	0.27	0.10	0.08	0.54	N/A
27	0.23	-0.36	0.06	0.23	0.15	0.54	N/A
28	0.75	0.53	0.06	0.11	0.75	0.07	N/A
29	0.75	0.53	0.13	0.75	0.11	0.01	N/A
30	0.54	0.28	0.09	0.14	0.54	0.23	N/A
31	0.80	0.47	0.80	0.06	0.04	0.09	N/A
32	0.40	0.44	0.09	0.08	0.26	0.40	0.16
33	0.51	0.61	0.04	0.20	0.22	0.51	N/A
34	0.23	0.11	0.23	0.28	0.08	0.40	N/A
35	0.21	-0.06	0.39	0.21	0.16	0.16	0.07
36	0.21	0.14	0.33	0.21	0.40	0.07	N/A
37	0.43	0.39	0.43	0.18	0.33	0.05	N/A
38	0.38	0.50	0.34	0.19	0.08	0.38	N/A

Poor discriminatory items can be indicators of ambiguous wording, grey areas of opinion, or just wrong keys. In the main survey, there are still nine questions with an item discrimination of less than .20, and there are now three with a negative discriminatory value: Q20 from .13 to -.14; Q27 from .5 to -.36, and Q35 from .13 to -.06. Although .20 is suggested to be the bottom margin for accepting items, the questions with negative D values should definitely be excluded, that is questions 20, 27, and 35.

The distribution of answers between the alternatives indicates the distraction value of each alternative. Ideally, all alternatives should attract responses of at least 5%. As can be seen in Table 6.2 the distraction value of questions 8, 11, 14, 24, 33 is less than 5% and should be further developed. Questions 10, 12, 15, 18, 23, 25, 34, and 36 have very similar responses to the various alternatives, which may indicate possible guessing by respondents. Although guessing is a problem, certain questions should remain because they actually test something important.

Researchers such as Gliem and Gliem (2003: 82) frown upon item analysis per item. They question the use of the analysis of single-item questions, and state that these analyses are not reliable and consequently should not be used to draw final conclusions. Therefore, it is suggested that use is made of summated scales or subscales for the behaviour and attitude sections, as illustrated in Table 6.3 to 6.5. Summated scales, according to Gliem and Gliem (2003: 82-83), contain multiple items, each item has an underlying quantitative measurement continuum, the item has no right answer, and each item is a statement. The knowledge part of the questionnaire, however, is not a summated scale, and the results for this multiple-choice test are reflected in Table 6.3. The table indicates the mean if deleted, the variance, the standard deviation, item-to-total correlation and alpha if item is deleted for the knowledge section of the questionnaire. The item means indicate the summary statistics for the 31 individual item means to be 15.5522. The item standard deviation is 3.84779, and the correlation as indicated by the average inter-item correlation that measures the correlation of each item with the sum of all remaining items is .044823.

The mean if item is deleted indicates the mean if all items, excluding that specific item, are summed for all respondents. In Table 6.3, the mean if item 8 is deleted is 14.64925. The variance if item 8 is deleted is 14.52623 and the standard deviation is 3.811329. The item-to-total correlation is the correlation of the item designated with the summated score for all other items. A rule-of-thumb is that these values should be at least .40. The item-to-total correlation in column five indicates the relationship between a specific item and the total test score (Barba, 2007: 6). Although Barba prefers that a good item to total score should be between .4 and .6, Venter (2006: 14) quotes Parmenter and Wardle who find .2 as an acceptable minimum requirement.

Table 6.3: Reliability Results: Knowledge.

Variable	Summary for scale: Mean = 15.5522 Std. Dev. = 3.84779 Valid Cronbach alpha: 0.594708 Standardized alpha: 0.588855 Average inter-item corr.: 0.044823				
	Mean if deleted	Var. if deleted	Std. Dev. if deleted	Item-to-total correlation	Alpha if item deleted
8	14.64925	14.52623	3.811329	0.03599	0.5965
9	15.02239	14.18607	3.766439	0.06912	0.5978
10	15.12687	14.67794	3.831179	-0.06001	0.6121
11	14.67164	13.98173	3.739216	0.25079	0.5808
12	15.16418	14.57006	3.817075	-0.03024	0.6085
13	15.02985	13.64090	3.693359	0.21808	0.5804
14	14.65672	13.83738	3.719863	0.33577	0.5752
15	15.07463	13.48697	3.672461	0.26128	0.5752
16	15.03731	13.46876	3.669981	0.26620	0.5746
17	15.11940	14.16485	3.763622	0.07634	0.5969
18	15.25373	14.68189	3.831695	-0.05597	0.6097
19	15.22388	13.75585	3.708888	0.20630	0.5820
20	15.44030	15.15688	3.893184	-0.22862	0.6155
21	14.91791	13.12013	3.622172	0.38491	0.5610
22	14.85821	13.22616	3.636779	0.37488	0.5632
23	15.26866	13.82335	3.717976	0.19946	0.5829
24	14.70149	13.32880	3.650863	0.47629	0.5602
25	15.17164	13.20188	3.633440	0.35638	0.5642
26	15.00746	13.73875	3.706582	0.19186	0.5835
27	15.32090	15.80001	3.974923	-0.38265	0.6377
28	14.79851	13.25045	3.640116	0.40138	0.5620
29	14.79851	13.32507	3.650352	0.37653	0.5646
30	15.01493	14.10426	3.755563	0.09137	0.5952
31	14.75373	13.55875	3.682221	0.33020	0.5708
32	15.14925	13.73892	3.706604	0.19678	0.5829
33	15.03731	13.11055	3.620849	0.36878	0.5620
34	15.32090	14.48658	3.806124	0.00954	0.6017
35	15.34328	14.83738	3.851932	-0.09822	0.6111
36	15.34328	14.46424	3.803189	0.02118	0.6002
37	15.11940	13.74694	3.707686	0.19123	0.5836
38	15.17164	13.39591	3.660043	0.29920	0.5710

Based on that requirement the following questions should be excluded: 8, 9, 10, 12, 17, 18, 20, 23, 26, 27, 30, 32, 34, 35, 36, and 37. That is more than fifty percent of the questions! In the pre-test, there were 8 questions with an item-to-total correlation of less than .20, of which four were negative: Q9, Q12, Q34, and Q36. In the main survey questions 9 and 34 improved to positive values although still below .20, but positive item-to-total correlation items such as Q10, Q18, Q20, Q27, and Q35 deteriorated into negative figures.

The alpha if item is deleted is most probably the most important column in the table. This figure represents the scale's Cronbach alpha reliability coefficient for internal consistency if the individual item is removed from the scale. In Table 6.3 the scale's Cronbach's alpha for item 8 is .5965 if item 8 were removed from the scale. This value is compared to the Alpha coefficient value at the top of the table to see if one should delete the item. For example deleting item 8 will increase the alpha of the scale from .594708 to .5965, and the reliability of the measurement instrument. As can be seen in the table, deleting questions 10, 12, 18, 20, 27, and 35 will improve the reliability of the instrument. The standardized item alpha equal to .588855 illustrates the coefficient of internal consistency but is only used when the individual scale items are not scaled the same.

As a result of the item difficulty index, the discrimination index and the item-to-total correlation it is decided to exclude the following questions from the questionnaire: Q10, Q12, Q18, Q20, Q27 and Q35. This now leaves us with 25 knowledge questions, and as a result, the following values change as well: mean, variance, standard deviation, item-to-total correlation, and alpha if item is deleted for the remaining questions in the knowledge section of the questionnaire. The mean for the scale now decreases from 15.5522 to 13.8881 (out of 25), the standard deviation increases to 4.03865, the valid Cronbach's alpha increases from .594708 to .713262, the standardized alpha increases from .588855 to .718206, and the average inter-item correlation increases from .044823 to .093677. Thus, in order to improve the reliability of the scale it is proposed that the mentioned questions be excluded.

Table 6.4 indicates the reliability assessment of the behavioural section of the questionnaire. This section consists of 17 questions, each with three possible options resulting in a total score of 51. The mean for this section in the main survey is 35.7623. None of these items has an item-to-total correlation that is negative, and although 43a and 43b are less than .2 all these questions are retained. The valid

Cronbach alpha is good for the scale at .822022 and the standardized alpha is also more than acceptable at .817235.

Table 6.4: Reliability Results: Behaviour

Variable	Summary for scale: Mean = 35.7623 Std. Dev. = 6.29187 Valid Cronbach alpha: 0.822022 Standardized alpha: 0.817235 Average inter-item corr.: 0.213619				
	Mean if deleted	Var. if deleted	Std. Dev. if deleted	Item-to-total correlation	Alpha if item deleted
43a	33.49180	37.41387	6.116688	0.141312	0.829221
43b	33.04918	38.73529	6.223768	0.032832	0.830298
43c	33.53279	35.34729	5.945358	0.403811	0.813731
43d	33.82787	33.35562	5.775432	0.538551	0.804893
43e	34.13115	34.19592	5.847727	0.496552	0.807983
43f	33.57377	33.90029	5.822396	0.496550	0.807858
44a	33.05738	36.69343	6.057510	0.391751	0.815338
44b	33.38525	36.92536	6.076624	0.260176	0.821008
44c	33.77049	34.88175	5.906077	0.399667	0.814219
44d	33.42623	35.35931	5.946370	0.333699	0.818675
44e	33.82787	33.71627	5.806571	0.548648	0.804581
44f	33.80328	33.46949	5.785283	0.562551	0.803516
44g	33.36066	35.88632	5.990519	0.380432	0.815032
44h	33.49180	34.54501	5.877501	0.523061	0.806971
44i	34.17213	33.94578	5.826301	0.559856	0.804301
44j	34.01639	34.03252	5.833740	0.5616063	0.804357
44k	34.27869	35.43053	5.952355	0.416070	0.813065

The reliability of the items within the attitude section as reflected in Table 6.5, however, requires some attention. The questions that measure the comfort and non-existence of feelings towards managing and planning household finances, saving for emergencies, budgeting, using credit, and investing for the future, have a negative item-to-total correlation and are therefore deleted from the questionnaire. The implication of deleting these two items is a decrease in the scale mean from 65.5391 to 60.7607 (the total also decreases from 90 to 84), and an increase in standard deviation for the scale from 6.13630 to 6.23623. The measures of reliability such as the valid Cronbach alpha, the standardized alpha, and the average inter-item correlation all increase in value which suggests improved reliability. The valid Cronbach alpha increases from .678913 to .733688.

Table 6.5: Reliability Results: Attitude

Variable	Summary for scale: Mean = 65.5391 Std. Dev. = 6.13630 Valid Cronbach alpha: 0.678913 Standardized alpha: 0.712825 Average inter-item corr.: 0.082096				
	Mean if deleted	Var. if deleted	Std. Dev. if deleted	Item-to-total correlation	Alpha if item deleted
Desperate	63.91304	36.54896	6.045574	0.035926	0.685728
Uncomfortable	63.93044	38.37777	6.194979	-0.178245	0.702579
No feelings	64.05218	37.26685	6.104658	-0.048218	0.691966
Comfortable	63.20869	35.64340	5.970210	0.149707	0.676429
Calm	63.24348	35.22768	5.935291	0.194760	0.672814
Thriftiness Comp	63.42609	35.91410	5.992837	0.053270	0.689715
47a	62.63478	35.46662	5.955386	0.362146	0.665606
47b	62.86087	34.45021	5.869430	0.383066	0.659660
47c	63.00000	35.32174	5.943210	0.186905	0.673434
47d	62.74783	35.24945	5.937125	0.353596	0.664608
47e	62.80000	34.12521	5.841679	0.472793	0.654765
47f	63.10435	33.51954	5.789607	0.391693	0.655414
47g	62.83478	34.06836	5.836811	0.436696	0.655656
47h	62.74783	35.40598	5.950292	0.323398	0.666255
47i	62.69565	35.28998	5.940537	0.385361	0.664063
47j	63.13044	32.54821	5.705103	0.528641	0.643341
47k	63.06956	33.21255	5.763033	0.492405	0.648733
47l	63.23478	33.53618	5.791043	0.357961	0.657778
Uncultural	64.43478	36.10662	6.008878	0.217852	0.672390
Pray and hope	63.45218	35.06510	5.921579	0.180835	0.674516
No time	64.21739	36.70926	6.058817	0.046651	0.682392
Do not know	63.86087	37.61543	6.133142	-0.091273	0.696689
Trying	63.02609	36.39062	6.032464	0.058457	0.683657
Have plan	63.26957	34.66647	5.887824	0.249430	0.668140
Can teach	63.03478	34.65966	5.887246	0.262793	0.667054
Good role model	63.22609	33.51410	5.789136	0.366491	0.657093
49c	63.25217	34.50163	5.873808	0.254318	0.667654
49d	63.00870	35.01731	5.917543	0.218738	0.670806
49e	63.67826	35.26170	5.938157	0.122402	0.681817

As a result of the completed analysis it can be stated that the reliability of the sections as illustrated by Cronbach alpha, standardized alpha and average inter-item correlation is at acceptable levels, and therefore this measurement instrument has internal consistency. In other words, it measures financial literacy consistently. A Cronbach alpha of .8 would have been preferred for the knowledge section. Authors such as George and Mallery (2003: 231) accept anything above .7 as acceptable. The value of .713262, is attributed to guessing the answers to the more difficult questions, and may improve in a survey with more respondents.

While increasing the value of alpha is partially dependent on the number of items in the scale, it should be noted that this has diminishing returns. It should also be noted that while a high value for Cronbach's alpha indicates good internal consistency of the items in the scale, it does not mean that the scale is unidimensional. Factor analysis is a method of determining the dimensionality of a scale, but according to Malan (2009) a factor analysis is not required for this research. As already stated, the reliability of the measurement instrument is acceptable and reliability is a prerequisite for validity, but it does not constitute validity on its own.

6.3.4 Validity

Allen*, et al.* (2004: 2) define validity as the extent to which an instrument measures what it claims to measure, and according to Anastasi and Urbina (1997: 13) it can also tell us what can be inferred from the test scores. Different types of validity have already been discussed in the previous chapter, and therefore the focus here will be on whether this measurement instrument is valid or not. This research focused on the face validity, content validity, and construct validity of the measurement instrument, and validity such as prediction validity was excluded because this measurement instrument is not developed to be a predictor of financial well-being, or to be compared with existing measures.

Face validity is not validity in the technical sense, but what it superficially appears to measure. However, it is an important measure because it will influence the approach of the respondent to the measurement instrument. If it is perceived to be elementary the respondents will not respond to it seriously. Face validity was established for this measurement instrument by showing it to potential respondents and other untrained parties to express an opinion. The response was unanimous that it appears to be an instrument that will test the knowledge, behaviour and attitude on financial issues. The way in which it was completed by respondents in the pilot test and main survey also suggests that it is perceived to be a proper measure of financial literacy. Quite a few remarks, however, were made with regard to specific questions, and that brings us to the issue of content validity.

The different content questions and the number of content questions included represent the domain of what is being measured. In order to assess if the right content is included and the correct number of questions are asked with regard to the content of financial literacy a content-description validation procedure should be followed. According to Anastasi and Urbina (1997: 114-115) such a procedure involves essentially the systematic examination of the test content to determine whether it covers a representative sample of the domain to be measured (Anastasi & Urbina, 1997: 114-115), and, according to Allen*, et al.* (2004: 1), if it is constructed in a sensible manner. To make sure that all major aspects are included in the correct proportions such a process should begin with a description of the domain. For educational tests, for instance, the relevant courses' syllabi and textbooks should be thoroughly and systematically analysed.

Content validity was addressed in Chapter 5, and it was accepted that the developed financial literacy measurement instrument is valid, and the reasons for accepting validity are threefold. Firstly, extensive research has been done on the contextual and conceptual nature of what financial literacy is. In the contextual analysis the full scope of what financial literacy means to different stakeholders was scrutinized so that the content of what is to be measured is covered. From the conceptual analysis an acceptable definition was developed in concepts, indicators and ultimately questions that measure financial literacy. So a structured process was followed that shows the thread from context to question.

Secondly, the scope of the content had to be narrowed for obvious reasons such as limited time and other practical reasons. In order to limit the scope previous research was scrutinized to identify the concepts that have been identified by other researchers as being important indicators of financial literacy. Amongst others, the research done by Volpe on identifying the important questions for measuring financial literacy levels was of significant value. Volpe used a methodology where input was sought from professionals in charge of 401 (k) education, employee benefits, and other related personal finance programmes. The five topics identified by Volpe were then included in this measurement instrument, and thus supports the validity of this measurement instrument. Existing financial literacy questionnaires, which have been in use for a period of time, were also scrutinized for possible questions.

Thirdly, the developed questionnaire was presented to various subject experts and changes made to improve the validity. Amongst these experts were accountants, industrial psychologists, military practitioners, and financial advisors. These experts had to indicate from a South African perspective what they deem to be important and list suggestions and recommendations. Unfortunately, the requested input from Swart, arguably the best financial literacy expert of this country, was not forthcoming.

The third type of validity assessed was that of construct validity. Construct validity can be confirmed if the developed financial literacy questionnaire or measure conforms to theoretical expectations. In Chapter 1, it was indicated that the educational system does not address the financial empowerment of learners. The results of the applied financial literacy measurement instrument on first-year SAMA students supports this statement, and therefore it may be argued that theoretical expectations are supported by the measurement instrument. Another example of construct validity is the correlation that exists between the ownership of shares and mutual funds, and the low knowledge levels on investments. In theory it is believed that low levels of financial literacy knowledge lead to ineffective financial behaviour. From the main survey it is clear that knowledge levels are low and that respondents hardly invest in shares and mutual funds. Cognizance should, however, be taken that there may be other reasons for ineffective behaviour and that it is not necessarily due to low knowledge levels.

Other forms of validity such as criterion validity can only be assessed if this measurement instrument is comparable with existing well-accepted financial literacy questionnaires (de Vaus, 1996: 56). Unfortunately, there is not an existing well-accepted South African financial literacy questionnaire in place, so criterion validity cannot be assessed. Within the test, however, it is possible to do a correlation analysis between the knowledge perception as criteria and the tested knowledge. In theory it may be expected that there is a good correlation between the perceived knowledge levels and the real knowledge levels. The correlation is .11498 which is a very low correlation, but that may be due to the fact that respondents had to rate their own knowledge levels, and, as already indicated by various authors, a self-reported assessment is usually inflated. High positive correlation is an example of convergent validation, the opposite of discriminant validation where a negative correlation should exist between test scores and variables that have nothing to do with financial literacy knowledge levels, such as the province in which the respondent matriculated, for instance (Anastasi & Urbina, 1997: 129).

6.4 CONCLUSIONS AND RECOMMENDATIONS

The measurement instrument for financial literacy is now ready. The measurement instrument that has been developed is a financial literacy test that meets the criteria of good test construction and that is socially relevant in the South African context. The test has curricular or content validity as determined by experts. The test discriminates between good and poor students as determined by item analysis, and the reliability of the instrument was assessed using various correlation coefficients and proved to be acceptable. The test is objective and economical from the standpoint of administration. The test is designed to test the financial literacy knowledge, financial behaviour and attitude, and measure the ownership of financial products. The measurement instrument should also allow the determination of the consequences of inadequate knowledge, in other words the financial behaviour and attitude illustrated by the unknowledgeable. It can also indicate the areas of financial knowledge, behaviour, and attitude that need attention.

In order to achieve the above conclusion various questions were dealt with, and findings made. From the summaries and findings dealt with in this chapter the following limitations, recommendations, and future research opportunities are now highlighted. Limitations that existed within this research are:

- limited South African financial literacy literature;
- small and homogeneous population in main survey;
- a South African financial literacy expert , Swart, did not participate, even though contacted on numerous occasions;
- concept development is limited, partly because the financial development tasks of 18-24-year-olds are currently an unexplored field of study;
- it is a once-off measurement of financial literacy;
- the questionnaire was only tested in one organisation; and the findings of the study were not specifically intended to make any generalizations of the organisation concerned, but were focused on evaluating an instrument against the theoretical dimensions identified.

Taking note of these limitations the following general and specific recommendations can be made. The first general recommendation is that financial literacy should be emphasized more as a management competency for both public and private management. Although Virtanen identified resource allocator, project evaluator, entrepreneurial and financial management as part of the 55 competencies for public managers, which might represent the essence of financial literacy, it is not explicitly mentioned. Neither is it mentioned as a general management competency. Therefore, it is recommended that general management literature reflect financial literacy as being important.

Although emphasizing financial literacy as a management competency will increase the awareness of the importance of financial literacy, it should also receive more attention in South Africa and the SANDF as an organisation. The limited number of academic and other articles on financial literacy indicate the low profile that financial literacy currently holds in South Africa. Being financially literate holds many advantages on the global, national, organisational, and personal level, and therefore it is important for everyone to get involved in the process of improving financial literacy through education and training. The benefits on the global level are improved resource utilization, productive global debates, and improved social cohesion. On the national level they are the effective functioning of markets, less regulation, and less dependence on governments as paternalists. An increase in saving can lead to an increase in money supply, investment, and growth. Financially literate employees will have less financial stress, be more productive and effective, and require less personnel management. Specifically within the SANDF, an improvement in financial literacy will result in increased operational readiness and retention, improved job performance and presence, less crime and incarceration, fewer safety issues and accidents, and less administration with regard to letters of indebtedness, pay adjustments, security clearance, and reassignments.

Although the successful impact of financial literacy training and education is not conclusive the financial literacy education and training in South Africa pales in comparison to international efforts. In order to improve the financial literacy levels within South Africa it should not be the responsibility of educationalists and trainers alone, but also that of parents, employers, the financial industry, and individuals themselves. To improve financial literacy within the SANDF a combined effort is required that includes training units, the SAMA and financial institutions. Financial education and training should be broad based but also focus on financing, investing, planning, and risk management by addressing financial knowledge, behaviour, attitude, and skills.

Financial literacy modules need to be developed that prepare people to be able to make ends meet; to keep track; to plan ahead; to choose appropriate products and to stay informed. The average of 50.17% achieved by respondents in the main survey suggests that standard modules such as accountancy, economics and business management are not sufficient to provide the required knowledge levels to be financially literate. Therefore, the training and educational interventions should address the basic and advanced competences required by people.

A financial literacy module will have to include the concepts that constitute financial literacy, and therefore more research should be done on determining what the correct concepts are, and how to cover them effectively in a measurement instrument. Because the financial literacy ability and financial issues referred to in the definition depend on the specific circumstances of the individual, it may be a good idea to approach concept development according to the financial life cycle. This is in agreement with Roy Morgan Research, as quoted by Worthington (2006: 5), who suggests that knowledge be tested relevant to needs and circumstances rather than the entire array of financial products and services. Concept development is very important because it determines the indicators and ultimately the questions that are included in a valid measurement instrument. Concept development may also identify the financial development activities associated with personal development, a field that until now has been under-developed, according to Malan (2009).

Therefore, even this developed financial literacy measurement instrument needs more development and refinement. The ideal situation will be to have as many questions as possible so that the scope of financial literacy is covered (validity). More questions will also improve the accuracy of the measurement instrument, and therefore the reliability. The method of questioning needs development, as well as scoring the test. In the developed questionnaire a subjective approach is followed in assessing financial behaviour and attitude. Because they are self-reported answers are inflated, and the more correct way would be to assess these concepts objectively by observing actual financial behaviour and attitude.

It is also recommended that research should be done on finding a method to score the “test”. Although it may seem that scoring financial literacy knowledge is relatively straight forward it should be noted that some questions are more important than others and some are more difficult than others, and thus a weighing system should be applied. Scoring the financial behaviour, attitude, and financial products are measured using a Likert scale amongst others, and allocating a nominal value to each item is questionable.

What is a pass score? There are normative and absolute, or criterion-referenced, standards. Normative compares how one respondent compares to the others, and absolute standards have a specific required level of performance (Althouse, 2000: 6). The user of the financial literacy measurement instrument will have to decide what a pass score should be. Is pass when the respondent performs better than the average performance of the group, or if a standard of 50% is achieved? It is recommended that the knowledge score be dealt with as an indicator to what areas need improvement, rather than be a judge of general financial knowledge. It is also recommended that acceptable financial behaviour and attitude be above the average obtained by the group of respondents. Similarly, the required financial products should be identified given the circumstances of the specific group completing the questionnaire, and then a pass will be the mean and better.

Can the measurement instrument be used as a credit-scoring model? Currently the answer is no, because although it may be a good indicator of the payment history, number of credit cards and the types of credit used, it does not indicate length of credit history, or the number of inquiries for credit, as required by the FICO model (Ferebee, 2009: 1). The typical indicators important in retail credit-scoring models as summarized by Vojtek (2006: 1) are also poorly represented. Only 6 out of 19 indicators that cover demographics, financials, employment, and behaviour, are reported in the measurement instrument. Thus, it is recommended that the measurement instrument could be developed to include the required information for credit assessment.

A further concern in the development of the financial literacy measurement instrument is proving the validity of the instrument. Although face, content and construct validity is assessed in this research and found to be acceptable, there may be other forms of validity assessment that need further exploration. One such an assessment is factor analysis, and although it was indicated by Malan (2009), Chair Industrial Psychology at the SU, that factor analysis is not required or applicable in determining the validity of this specific measurement instrument, other researchers may have opposing views and therefore this issue could be further investigated.

Additionally the following research topics could be investigated relevant to the financial literacy measurement instrument:

- What are the behavioural and attitude consequences of being financially illiterate? Compare with study by Chen and Volpe.

- Which area contributes most to financial well-being?
- What should be the design and delivery of education and training, and how will its effectiveness be measured? Research done in this regard was done by Huddlestone and Danes (1999), Chatzky (2002) on students, and Braunstein and Welch (2002) on homebuyers (Worthington, 2006: 7)
- Can scores be aggregated as done by the study in Singapore, where actions and knowledge scores were added together?
- Kotlikoff and Bernheim (2001) found explicit evidence of a direct link between an economics curriculum and higher private savings for retirement – is this true for the South African environment?
- Hilgert and Hogarth (2003: 320) found that knowledge can be statistically linked to financial practices such as cash-flow management, credit management, saving, and investment.
- Hira and Loibl (2005: 192) believe that employer-provided education stimulates financial literacy and leads to expectations for a better future financial situation as well as greater satisfaction in the workplace.
- Chen and Volpe found that young females are less financially literate than their counterparts, and that finance business majors outperform non-finance business majors. Is this true at the SAMA?
- Does language play a role in assessing financial literacy?
- Limited research has been done on a longitudinal study of financial literacy.
- In assessing validity and reliability a statistical analysis process could be followed that assesses the following: multicollinearity, test for unidimensionality, test for reliability, item assignment test, test for convergent construct validity, test for discriminant construct validity, and test for predictive validity (see Singh and Smith, 2006: 502).
- What are the financial development activities of personal development?

As can be seen from the above, this research has only touched on financial literacy by developing a measurement instrument, and a lot more remains to be investigated. Therefore, as quoted by Young and Dulewicz (2005: 228): “As long as there is potential gain to be derived from identifying the relationships between managerial success and the individual attributes, there is a clear need for studies exploring links between managerial performance, specific competencies and underlying personality”.

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ANNEXURE 1

SANDF COMPETENCY MATRIX FOR OFFICERS - LIEUTENANT

Management
Management Fundamental knowledge of management types and functions. **General Management** **Risk Management** The ability to identify risks in the workplace; Assessment of identified risks; Initiate preventative and corrective action. **Defence Resource Management** **Total Quality Management** Creating a TQM system within the workplace. **Systems Management**
Leadership, Command and Civic Education Doctrine
Project Management Fundamental Knowledge of Performance Management in the Workplace: Suggestion Schemes, Service Deliver (Batho Pele). **Performance Management** Fundamental Knowledge of Performance Management in the Workplace: Suggestion Schemes, Service Deliver (Batho Pele). **Strategic Management** **Organisational Development** Fundamental Knowledge of Organisational Development within the workplace People: Team Roles, Team Building, Motivation. **Leadership** **Command** **IHL/LOAC** A basic understanding, fundamental knowledge and the ability to apply (interpret, communicate and evaluate) the approved LOAC and UN doctrine in general and within specific functional domains. **Civic Education** **Officership** **Ethics**
Policy
Basic knowledge and comprehension of policy.
Doctrine
Management of Doctrine, Single Service Doctrine, Joint Doctrine, Multi-National Doctrine
Public Administration
Resource Management
Human Resource Management

<table>
<tr><td colspan="2">EO
Labour and Service Relationships
Info Management
An ability to effectively apply and utilize day-to-day communication medium in terms of tactical communications, including: Interpretation of signal instruction; Tactical radios and HAR functions.
Night vision equipment; HF/VHF communication; ECCM/ECM; Battery Charging.</td></tr>
<tr><td>Financial Management</td><td>Public Finance Management Concepts, Budgeting, Financial Expenditure Control</td></tr>
<tr><td>Logistical Resources</td><td>Procurement
Capital Acquisition and Defence Industry
Private Funds and Institutions
Environmental Management
Fixed Asset Management
Hospitality Services
Public Private Partnerships
Alternative Service Delivery
Supply Support
Informed understanding of stores management reports.
Transport Management
Informed understanding of road transport system.
Ammunition Management
Basic understanding of ammunition defect reporting process.
Technical, Fire and Rescue, OHS</td></tr>
<tr><td>Employee and Workplace Well-being</td><td>Chaplaincy Services
Social Well-being, Physical and Recreational Well-being
Medical Well-being</td></tr>
<tr><td colspan="2" align="center">Operational Support</td></tr>
<tr><td colspan="2">Corporate Communication
Informed understanding of departmental policies re communication; Understanding of communication policies and plans; Ability to effectively apply verbal & written communication skills; Ability to use their knowledge of communication medium e.g media liaison; Understanding of the organisation as a system with a wider context and the relation with the society (internal and external).</td></tr>
</table>

ANNEXURE 1
SANDF COMPETENCY MATRIX FOR OFFICERS - LIEUTENANT

Training Management	**General Training Concepts and Management** Basic understanding of the concept of outcomes-based ETD. **Formal Training Management (ETD)** Basic understanding of the ETD process with regard to skills development (determine skills gap). **Force Training Management**
Military Security **MDC and Legal Process** **Military History** Demonstrate a fundamental understanding of Military History and its impact on tactical concepts and doctrine in the functional field. **CBR**	
Crime Prevention	**Crime Prevention** A fundamental knowledge base and understanding of Crime Prevention and his role as an individual regarding Crime Prevention. **VIP Protection** A basic knowledge regarding the tasks, roles and functions of VIP protect. **Protecting/Safeguarding**
Personal Mastery	
Analytical Skills An informed understanding of the impact of current affairs in the Southern African and the DoD. **Conflict Management** **Negotiation Skills** **Problem Solving** **Research**	
Computer Literacy	
Communication	**Learning Skills, Writing, Reading (Assessing and Processing Info)** **Listening, Speaking/Oral/Presentation Skills**
Military Operations	
Defence Diplomacy	**Diplomacy, Protocol** **Ceremonial**
Intelligence, Counter Intelligence and Collection **Strategy Formulation** **Operational Planning and Control** **Joint Warfare** **National Security**	

Source: Chief Joint Training, 2006.

ANNEXURE 2
PROGRESSION FROM CONTEXT TO QUESTION

Contextual Requirement for financial literacy (Chapter 3)	Conceptual Requirements of financial literacy (Chapter 4)	Financial Literacy Indicator	Question
Global concern for: • Effective resource usage; • social cohesion (Johnston, 2005: 1); • effective social debate (Krueger, 2002: 19-20); • efficient market operation (Hilgert & Hogarth, 2003: 309); • decreased regulation (Feslier & Crossan, 2006: 7-9); • improvement in banking relationship (Braunstein & Welch, 2002: 448); • addressing knowledge imbalance (Feslier & Crossan, 2006: 7). **National concerns of:** • Changes in technology; • market innovation; • change in personal needs and responsibilities; • asset accumulation; • debt management; • retirement provision; • financial literacy scores; • poor financial behaviour; • financial stress. **South African concerns**: • Integration of diverse population in financial markets;	Never-ending process of being able to: "*read, analyse, manage, and write about the personal financial conditions that affect material well being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy"* (Vitt, *et al.,* 2005: 7). Summarized as: Personal ability to deal with personal financial issues. **Ability** = essential mathematical, reading and comprehension skills, financial understanding (knowledge), financial competence (behaviour and products), and financial responsibility (attitude) (Roy Morgan Research, 2003: 73). **Financial Issues**: • General - retirement needs, investing money, providing for the future, and managing credit use (Hira & Loibl, 2005: 174); budgeting, home buying and home ownership (Fox, et al., 2005: 197); knowledge of banking and credit, money management, understanding risk and the need for protection against unforeseen	Mathematical, reading and comprehension skills Financial knowledge and understanding of: • Investment • Financing • Income and expenses • Rights and responsibilities • Interest rates • Inflation • Risks • Sources of information Effective financial behaviour • Price comparisons • Paying accounts regularly • Saving/Investing • Keeping records • Managing credit • Managing cash flows (income and expenditure) • Consulting financial experts	Assumed to be in place for first-year university students. Knowledge section in questionnaire. Questions 8-38 Financial behaviour section in questionnaire Questions 39-44

ANNEXURE 2
PROGRESSION FROM CONTEXT TO QUESTION

• consumer rights; • low savings rate; • high debt levels; • poor retirement provision. **Consequences for military organisations such as the SANDF (Vitt, 2006: 4):** decreased operational readiness and retention; deteriorating job performance and time away from work; increased family violence; increased substance abuse; crime and incarceration; safety issues and accidents; possible suicides; and significant administrative time lost to the processing of: • letters of indebtedness; • pay adjustments and garnishments; • security clearance changes and reassignments; • administrative separations. **Financial literacy educational and training responses:** • Internationally – broad financial education, savings and investment, home ownership. • National – economic and management sciences, and mathematical literacy. • Military Academy – financial literacy module.	emergencies, plans for major life events, and saving and investing for the future (Vit, et al., 2005: 9); make ends meet, to keep track, to plan ahead, to select the right products, and to stay informed (FSA, 2005:14). • 18-24 year olds - budgeting, debt management, and investment management (Atkinson & Kemson, 2004). • Grade K-12 outcomes (USA) - Financial Responsibility and Decision Making; Income and Careers; Planning and Money Management; Credit and Debt; Risk Management and Insurance; Saving and Investing (Jump$tart Coalition, 2002: 7-13). • Mathematical literacy (SA) - the use of numbers with understanding to solve real-life problems in different contexts including the social, personal and financial" (National Curriculum Statement Grades 10-12 (General), RSA, 2003: 10). • SANDF - Unit Standard no 114873 on level 5: having the ability to manage income and expenditure, doing financial planning, and managing a budget.	• Exercising rights Positive financial attitude. • Organised • Disciplined • Motivated • Responsible (Hilgert and Hogarth, 2003: 310) Financial products • Testament (minimum) • Savings (minimum) • Budget in writing (minimum) • Record of financial expenses (minimum) • List of Assets • Short, med, long-term goals. • Record system (Hilgert and Hogarth, 2003: 310).	Attitude towards financial issues in questionnaire Questions 45-49 Financial products section in questionnaire. Questions 50-52

ANNEXURE 3

QUESTION MATRIX

Question		Source	Indicator	Concept
1		Jump$tart adjusted	Info source	Financial Literacy
2a-2f		Self Developed	Course at school	Financial Literacy
3		Jump$tart adjusted	Income of guardians	Financial Literacy
4		Jump$tart adjusted	Info source	Financial Literacy
5		Self Developed	Education of parents	Financial Literacy
6		Jump$tart	Allowances	Financial Literacy
7a-7c		FleetBoston		Fin Knowledge
7d-7g		Self Developed		Fin Knowledge
7h-7i		FleetBoston		Fin Knowledge
7j-7p		Self Developed		Fin Knowledge
FINANCIAL KNOWLEDGE AND UNDERSTANDING				
8	**2**	Jump$tart adjusted	Retirement	Fin Knowledge
9	**2**	Jump$tart	Risk	Fin Knowledge
10	**3**	Self Developed	Taxes	Fin Knowledge
11	**3**	Jump$tart	Spending, financing/credit	Fin Knowledge
12	**2**	Self Developed	Financing/credit	Fin Knowledge
13	**3**	Jump$tart adjusted	Income & Taxes	Fin Knowledge
14	**1**	Jump$tart adjusted	Taxes, source of income	Fin Knowledge
15	**1**	Jump$tart adjusted	Mathematical Skills	Fin Knowledge
16	**1**	Jump$tart adjusted	Credit & Financing, Interest rates	Fin Knowledge
17	**2**	Jump$tart	Investment & Inflation	Fin Knowledge
18	**2**	Jump$tart adjusted	Investment	Fin Knowledge
19	**4**	Jump$tart	Credit/Financing, interest rates	Fin Knowledge
20	**2**	Jump$tart adjusted	Risk & Investment	Fin Knowledge
21	**1**	Jump$tart	Taxes, Economy	Fin Knowledge
22	**4**	Self Developed	Saving, credit	Fin Knowledge
23	**3**	Jump$tart adjusted	Financing/credit	Fin Knowledge
24	**3**	Jump$tart	Financing/credit, bank services	Fin Knowledge
25	**4**	Jump$tart	Income generation	Fin Knowledge
26	**4**	Jump$tart adjusted	Inflation, Investments, Interest rates	Fin Knowledge
27	**2**	Jump$tart adjusted	Savings, interest rates, bank services, taxes, rights	Fin Knowledge
28	**3**	Jump$tart	Financing/credit, responsibilities	Fin Knowledge
29	**2**	Jump$tart	Income, investment, growth	Fin Knowledge
30	**3**	Jump$tart	Compounded interest rate, investment	Fin Knowledge
31	**1**	Jump$tart	Income sources	Fin Knowledge
32	**4**	Self Developed	Taxes	Fin Knowledge
33	**4**	Self Developed	Insurance, risk	Fin Knowledge
34	**1**	Jump$tart adjusted	Risk, insurance, responsibility	Fin Knowledge
35	**2**	Self Developed	Shares, taxes, financing, financial markets, brokerage	Fin Knowledge
36	**2**	Jump$tart adjusted	Investment/ saving, bonds, shares, risk and return	Fin Knowledge
37	**1**	Jump$tart	Financing, credit, risk and return	Fin Knowledge
38	**4**	Jump$tart	Investment, Financing/credit, interest rates, inflation	Fin Knowledge

ANNEXURE 3
QUESTION MATRIX

FINANCIAL BEHAVIOUR			
44e	Hilgert and Hogarth adjusted	Organised, investment, risk and return	Fin Behaviour, attitude
43e	Self Developed	Rights/responsibility, info sources	Fin Behaviour, attitude
44j-44k	Self Developed	Control, organised, disciplined	Fin Behaviour, attitude
39	Jump$tart	Credit, responsibility	Fin Behaviour, attitude
40	Jump$tart	Investment, credit	Fin Behaviour, attitude
41	Jump$tart	Responsibility, risk management	Fin Behaviour, attitude
42	Jump$tart	Saving, investment	Fin Behaviour, attitude
43a	Self Developed	Rights/responsibilities	Fin Behaviour, attitude
43b	Self Developed	Rights/responsibilities	Fin Behaviour, attitude
43c	Self Developed	Rights/responsibilities	Fin Behaviour, attitude
43d	Self Developed	Rights/responsibility, info source	Fin Behaviour, attitude
43f	Self Developed	Rights/responsibility, info sources	Fin Behaviour, attitude
44a	Hilgert and Hogarth	Credit management, control, discipline	Fin Behaviour, attitude
44b	Hilgert and Hogarth	Control, discipline, organised	Fin Behaviour, attitude
44c	Hilgert and Hogarth	Organised, discipline, saving	Fin Behaviour, attitude
44d	Hilgert and Hogarth	Responsibility, risk management, investment	Fin Behaviour, attitude
44f	Hilgert and Hogarth	Responsibility, risk management, organised	Fin Behaviour, attitude
44g	Hilgert and Hogarth adjusted	Organised, investment, risk and return	Fin Behaviour, attitude
44h	Hilgert and Hogarth	Control, organised, disciplined	Fin Behaviour, attitude
44i	Hilgert and Hogarth	Discipline, responsibility, control, organised	Fin Behaviour, attitude
ATTITUDE TOWARDS FINANCIAL MATTERS			
45a-45e	FleetBoston	Control, motivation	Fin attitude
46	Jump$tart	Motivation, discipline	Fin attitude
47a-47i	Hilgert and Hogarth	Responsibility, discipline, motivation, control	Fin attitude
47k-47l	Self Developed	Responsibility, discipline, motivation, control	Fin attitude
48	Self Developed	Finding information	Fin attitude
49a-49c	FleetBoston	Motivation	Fin attitude
49d-49e	Self Developed	Investment	Fin attitude
FINANCIAL PRODUCTS			
50	Self developed	Saving & Credit	Fin activity/behaviour
51	Jump$tart	Investment	Fin Knowledge & Behaviour
52	Self Developed	Risk management, Planning, control, cash flow management, record keeping, cash flow management	Fin Knowledge & Behaviour

ANNEXURE 4
FINANCIAL LITERACY QUESTIONNAIRE

FINANCIAL LITERACY 2009

This survey will produce findings about the financial literacy of members of the Military Academy that should benefit you and others within the SANDF

Please complete the following questions by circling the correct answers. If you wish to comment on any questions or qualify your answers, please use the space provided on the back cover.

FINANCIAL LITERACY QUESTIONNAIRE

SEX	MALE	FEMALE	RANK	CO / MID	2ND LT/ ENS	LT / SLT	CAPT / LT
	1	2		1	2	3	4

UNIFORM	SA ARMY	SAAF	SAN	SAMHS
	1	2	3	4

AGE	20	21	22	23	24	25	>25
	1	2	3	4	5	6	7

Province matriculated	GP	EC	KZN	MP	NC	FS	NW	WC	L
	1	2	3	4	5	6	7	8	9

My biggest (most expensive) investment has been	Car	House	Studies	Specify if other:
	1	2	3	……………………………………… ………………………………………

Please answer the following by indicating yes (1) or no (2)	Y	N
Have you ever attended any financial literacy courses?	1	2
Do you have an additional income?	1	2
Have you ever been cheated financially?	1	2
Have you ever had a part-time job while still at school?	1	2
Have you had a job before you joined the SANDF?	1	2
Have you studied between finishing school and joining the SANDF?	1	2

On average I save …..% of my gross monthly salary	0%	1-5%	5-10%	10-15%	15-20%	20-25%	25-30%	>30 %
	0	1	2	3	4	5	6	7

I struggle financially	Yes	1	No	2

ANNEXURE 4

FINANCIAL LITERACY QUESTIONNAIRE

1. Where did you learn **most** about managing your money? **Select one response**.

At home from my family	H
At school in class	S
From talking with my friends	F
From magazines, books, TV and the radio	M
From experience in managing my own funds	O
From courses and studies since grade 12 (matric)	C

2. Which of the following classes have you had in high school up to grade 12? **Indicate yes (1) or no (2).**	**Yes**	**No**
a. Economics - HG	1	2
b. Economics - SG	1	2
c. Mathematics - HG	1	2
d. Mathematics - LG	1	2
e. Accountancy - HG	1	2
f. Accountancy - LG	1	2

3. What is your best estimate of your guardians' **total** combined income last year? Consider annual income from all sources before deductions, expenses and taxes.

No guardians	N
Less than R80,000	1
R80,000 to R149 999	2
R150,000 to R299 999	3
R300 000 or more	4
Don't know	D

4. Which entity will influence you the most in taking out an insurance policy? **Choose only one response**.

Information found on the internet	I
Recommendations from independent financial adviser or broker	B
Newspaper adverts	N
Parents and family	P
Friends	F
Financial literature	L

5. What is the highest level of education your father and/or mother completed? **Indicate for father and mother.**	**Father**	**Mother**
No schooling	FN	MN
Primary School	FP	MP
Secondary (High) School	FS	MS
Post Matric / Diploma	FPM	MPM
Diploma / Degree	FD	MD
Post-Graduate	FPG	MPG

6. How would you describe the allowance (pocket money) you received while growing up? **Choose one response.**

I did not receive a regular (weekly or monthly) allowance	N
I received a regular allowance that depended on the completion of some household chores	A
I received a regular allowance and did not have to perform chores for it	FA

7. How will you grade your knowledge on the following? *1* Means *very poor* and *5* means *very good.*

The stock market	1	2	3	4	5
Mutual funds and how they work	1	2	3	4	5
Saving	1	2	3	4	5
Taxes	1	2	3	4	5
Life assurance	1	2	3	4	5
Interest rates	1	2	3	4	5
Inflation	1	2	3	4	5
Managing household finances, such as income and expenses	1	2	3	4	5
How to prioritize financial goals, such as paying off debt, saving for emergencies, investing for retirement, and so on	1	2	3	4	5
Credit cards	1	2	3	4	5
Investments	1	2	3	4	5
Bonds	1	2	3	4	5
Debit cards	1	2	3	4	5
Insurance	1	2	3	4	5
How much interest (%) you earn on your savings account	1	2	3	4	5
The current inflation rate (%)	1	2	3	4	5

ANNEXURE 4
FINANCIAL LITERACY QUESTIONNAIRE

(For questions 8-38 select only one response per question)

8. Retirement income paid by a company is called:

a dividend	1
pension	2
social security	3
premium	4

9. If each of the following persons had the same amount of take home pay, who would need the greatest amount of life insurance?

a young single woman without children	1
a young single woman with two young children	2
a young married man without children	3
an elderly retired man, with a wife who is also retired	4

10. Which of the following is **true** about value added tax (VAT)?

the government will deduct VAT from your pay cheque	1
the VAT percentage rate is 6%	2
VAT makes things more expensive for you to buy	3
you don't have to pay VAT if your income is very low	4

11. Which of the following instruments is **NOT** typically associated with spending?

credit card	1
cash	2
32 day call account	3
debit card	4

12. Which of the following is **NOT** true about financing/lending of money?

your credit-worthiness depends on your willingness and ability to repay	1
a debit order is drawn and cancelled by the client at the bank	2
a cheque account has an overdraft facility	3
your identification document is required to open any bank account	4

13. Your take home pay from your job is less than the total amount you earn. Which of the following best describes what is taken out of your total pay?

income tax, social tax, and medical and pension contributions	1
pension and medical contributions	2
income tax, pension and medical contributions	3
income tax, sales tax, and pension contributions	4

14. Mpho worked part-time while at college and earned R15 000 per year. After graduation Mpho's first job pays R120 000 per year. Mpho will now:

have to register to pay personal income tax	1
still not qualify to pay personal income tax	2
pay less tax than when in college	3

15. Mpho just found a job with a take home pay of R1 500 per month. Mpho must pay R750 for rent and R125 for groceries each month. R100 per month is spent on transportation and R50 is budgeted for each month for clothing, R75 for restaurants and R50 for everything else. How long will it take to accumulate savings of R700?

2 months	1
4 months	2
6 months	3

16. Which of the following credit card users is likely to pay the **MOST** for finance charges (interest) per year if the same interest rate applies to all their cards?

Paula who only pays the minimum amount each month	1
Ellen who always pays off her credit card bill in full shortly after she receives it	2
Barbara, who generally pays off her credit card in full but occasionally will pay the minimum when she is short of cash	3
Nancy, who pays at least the minimum amount each month, and more when she has the money	4

17. Inflation can cause difficulty in many ways. Which group will have the greatest problem during periods of high inflation that may last several years?

older, working couples saving for retirement	1
older people living on fixed retirement income	2
young couples, who both work, without children	3
young working couples with children	4

18. Mpho and Joe have put money aside for emergencies. Which of the following forms would it be of LEAST benefit to them if they needed it right away?

savings account	1
invested in a down payment on a house	2
shares	3
cheque account	4

19. Ed and Bob are young men. Each has a good credit history. They work at the same company and earn approximately the same salary. Ed has borrowed R2 500 to take a foreign vacation. Bob has borrowed R2 500 to buy a car. Who is likely to pay the lowest finance rate?

they will both pay the same because the rate is set by law	1
they will both pay the same because they have almost identical financial backgrounds	2
Ed will pay less because people who travel overseas are better risks	3
Bob will pay less because the car is collateral for the loan	4

20. Mpho has saved R9 000 for college expenses by working part-time. Mpho plans to start college next year and needs all of the money saved. Which of the following is the **safest** place to keep the college money for one year?

a bank savings account	1
Government Bonds	2
shares	3
locked in Mpho's closet at home	4

21. Rebecca has a good job on the production line of a factory in her hometown. During the past year or two, taxes on businesses were raised dramatically. What effect is this likely to have on Rebecca's job?

Rebecca's company may consider closing down, thus threatening Rebecca's job	1
higher business taxes can't have any effect on Rebecca's job	2
higher business taxes will cause more business to move into Rebecca's factory, and therefore raise wages	3
she is likely to get a large raise to cover the effect of higher taxes	4

22. Which of the following is **NOT** correct about debit cards?

you can only withdraw to the amount that is currently in your account	1
you can use your debit card for transactions such as purchases, statement enquiries and cash withdrawals	2
it is more expensive to withdraw money with a debit card from a different ATM than the one associated with your bank	3
debit cards are exactly the same as credit cards in all aspects	4

23. Mpho must borrow R10 000 to complete further studies. Which of the following would **NOT** be likely to ensure a lower interest rate?

if you applied for a study loan instead of a personal loan	1
if Mpho's parents co-signed the loan	2
if Mpho went to a University rather than a College	3

24. Which of the following statements is **NOT** correct about most ATM (Automated Teller Machine) cards?

you can generally get cash 24 hours a day	1
you must have a bank account to have an ATM card	2
you can get cash anywhere in the world at the same charge	3
you can generally obtain information concerning your bank balance at an ATM machine	4

25. If you studied after school and earned a degree, how much more money could you expect to earn than if you only had a high school qualification?

no more, i would make about the same either way	1
about 10 times as much	2
a lot more, about 20% more	3
a little more, about 70% more	4

26. Which of the following types of investment would best protect the purchasing power of a family's savings in the event of a sudden increase in inflation?

a twenty five year government bond	1
a certificate of deposit at a bank	2
a 10 year bond issued by a corporation	3
a house financed with a fixed rate mortgage	4

27. If you had a savings account at a bank, which of the following would be correct concerning the interest that you would earn on this account?

you cannot earn interest until you pass your 18th birthday	1
income tax may be charged on the interest received	2
value added tax may be charged on the interest received	3
interest earned on a savings account is not taxable	4

28. Which of the following statements is **true**?

if you missed a loan payment more than 2 years ago, it cannot be considered in a loan decision	1
people have so many loans, it is very unlikely that one bank will know your history with another bank	2
banks and other lenders share the credit history of their borrowers with each other and are likely to know of any loan payments that you have missed	3
your bad loan payment record with one bank will not be considered if you apply at another bank for a loan	4

29. Carla and Sara work together in the finance department of the same company and earn the same pay. Carla spends her free time taking work-related classes to improve her computer skills, while Sara spends her free time socializing with friends and working out at a fitness centre. After five years what is likely to be true?

Carla and Sara will continue to make the same money	1
Carla will make more money because she is more valuable to her company	2
Sara will make more because Carla is likely to be laid off	3
Sara will make more because she is more social	4

30. Ron and Molly are the same age. At age 25 Ron began saving R2 000 a year while Molly saved nothing. At age 50, Molly realized that she needed money for retirement and started saving R4 000 per year while Ron kept saving his R2 000. Now they are both 75 years old. Who has the most money in his or her retirement account?

Molly, because she saved more each year	1
Ron, because he has put away more money	2
Ron, because his money has grown for a longer time at compound interest	3
they each have the same amount because they put away exactly the same amount	4

31. Which of the following best describes the primary sources of income for most people aged 20-35?

salaries, wages, tips	1
profits from business	2
dividends & interest	3
allowances	4

32. Which of the following is **NOT** true about personal taxes?

the IRP 5 indicates the tax deducted from the employee	1
PAYE means "pay as you earn"	2
retirement annuity contributions are tax deductible depending on the amount paid and the allowed deductions by Government	3
the sale of fixed property is exempted from Capital Gains Tax	4
you should keep financial records at least 5 years	5

33. Which of the following statements is **NOT** correct about insurance?

an insurance broker acts as the middleman between you and the insurance company	1
your motor vehicle is only insured for its trading or market value	2
the monthly premium broadly reflects the likelihood of occurrences of loss and the estimated value of the potential loss	3
it is legally possible to claim more than what you are insured for	4

34. If you have a motorcar accident with your car, which type of insurance would cover damage to your car?

comprehensive	1
liability to third party	2
limited	3
all risks	4

35. Which of the following is **NOT** true about the stock market?

dividends received by the investor are not taxed in South Africa	1
you can buy and sell shares through the JSE by yourself	2
your broker should act in your best interest	3
a bull market is a market where share prices are on the increase	4
a share is part of the ownership of a company	5

36. Hector and Maria just had a baby. They received money as baby gifts and want to put it away for the baby's education. Which of the following investments historically tend to have the highest growth over longer periods of time, as long as 18 years?

RSA Government bond	1
stocks/shares	2
savings account	3
cheque account	4

37. Marie has just applied for a credit card. She is an 18 year old high school graduate with few valuable possessions and no credit history. If Marie is granted a credit card, which of the following is the most likely way that the credit card company will reduce its risk?

It will start Marie out with a small line of credit to see how she handles the account	1
It will charge Marie twice the finance charge rate it charges older cardholders	2
It will require Marie to have both parents co-sign for the card	3
It will make Marie's parents pledge their home to repay Maria's credit card debt	4

38. Under which of the following circumstances would it be financially beneficial to you to borrow money to buy something now and repay it with future income?

when the interest on the loan is greater than the interest you get on your savings	1
when some clothes you like go on sale	2
when you really need a two-week vacation	3
when you need to buy a car to get a much better paying job	4

(For questions 39-44 select only one response per question)

39. Whose credit card do you currently use?

my own	O
my parents'	P
both my own and my parents'	OP
none, I don't use a credit card	N

40. Why do you use your debit card?

for drawing cash from an ATM and for buying things directly	DB
for drawing cash from an ATM only	D
I don't have a debit card	N

41. Which of the following best describes your driving?

I don't have a driver's license	NL
I have a driver's license but no car in the family that I can drive	NC
I drive the family car, which is used by others, and I help pay for the insurance	DP
I drive the family car, which is used by others, but I do not help pay for the insurance	D
I drive my own car and pay for the insurance	OP
I drive my own car but do not pay insurance	O

42. Some people tend to be very thrifty, saving money whenever they have the chance, while others are very spending-oriented, buying whenever they can and even borrowing to consume more. How would you classify yourself?

somewhat spending-oriented, seldom saving money	1
neither thrifty nor spending-oriented	2
somewhat thrifty, often saving money	3

43. How often do you do the following? **Indicate the frequency by circling *never* (1), *sometimes* (2), or *always* (3).**	Never	Sometimes	Always
a. if I discover that I have been sold a financial product not suitable for my needs I go back to the person that sold it to me	1	2	3
b. if I discover that a product sold to me is dysfunctional, I return it to the supplier	1	2	3
c. if I am not happy with the service received I complain to management	1	2	3
d. I consult a professional (broker) on investments	1	2	3
e. I consult a professional on taxes and tax planning	1	2	3
f. I consult the professional advice of my bank on issues such as saving and borrowing options	1	2	3

44. How often do you do the following? **Indicate your frequency by circling *never* (1), *sometimes* (2), or *always* (3).**		Never	Sometimes	Always
a.	paying bills on time	1	2	3
b.	reading bank account statements regularly	1	2	3
c.	making more than the minimum payments on your credit card/s	1	2	3
d.	contributing to a retirement fund	1	2	3
e.	comparing financing options of various banks	1	2	3
f.	keeping an emergency fund of at least three months living expenses	1	2	3
g.	shopping around for the best prices	1	2	3
h.	following a monthly budget	1	2	3
i.	adjusting your tax return every year	1	2	3
j.	checking the appropriateness of assets in your portfolio	1	2	3
k.	k. mixing (diversifying) your investments	1	2	3

(For questions 45-49 select only one response per question)

45. For each of the following statements, please tick the box that best describes your feelings. **Indicate frequency of your feelings by circling *never* (1), *sometimes* (2), or *always* (3).**	Never	Sometimes	Always
a. I feel **desperate and out of control** when it comes to managing and planning my household finances, saving for emergencies, budgeting, using credit, and investing for the future	1	2	3
b. I feel **uncomfortable** when it comes to managing and planning my household finances, saving for emergencies, budgeting, using credit, and investing for the future	1	2	3
c. I have **no feelings** when it comes to managing and planning my household finances, saving for emergencies, budgeting, using credit, and investing for the future	1	2	3
d. I feel **comfortable** when it comes to managing and planning my household finances, saving for emergencies, budgeting, using credit, and investing for the future	1	2	3
e. I feel **calm and in control** when it comes to managing and planning my household finances, saving for emergencies, budgeting, using credit, and investing for the future	1	2	3

46. Comparing yourself to those that raised you, would you say that you are:

somewhat less thrifty (tendency to save) than those that raised you, and more likely to spend what you can	1
about as thrifty as they are	2
somewhat more thrifty than those that raised you, and more likely to save what you can	3

47. Indicate the importance of the following by indicating ***not important*** **(1), *undecided* (2),** or ***very important*** **(3).**	Not Important	Undecided	Very Important
a. paying bills on time	1	2	3
b. reading bank account statements regularly	1	2	3
c. making more than the minimum payments on your credit cards	1	2	3
d. preparing a will/testament	1	2	3
e. contributing to a retirement fund	1	2	3
f. comparison shopping for a personal loan	1	2	3
g. keeping an emergency fund of at least three month's living expenses	1	2	3
h. shopping around for the best prices	1	2	3
i. following a monthly budget	1	2	3
j. adjusting your tax return every year	1	2	3
k. checking the appropriateness of assets in your portfolio	1	2	3
l. mixing (diversifying) investments	1	2	3

48. For each of the following statements, please tick the box that best describes your approach to planning for your retirement and future**. Indicate the frequency of your approach by circling *never* (1), *sometimes* (2), or *always* (3).**	Never	Sometimes	Always
a. it is against my culture to plan for retirement	1	2	3
b. I'm praying/hoping that somehow it will all work out in the end	1	2	3
c. I don't have the time or energy to think that far ahead	1	2	3
d. I don't know how to put together a saving and investing plan	1	2	3
e. I am trying to make some changes to my financial situation so that I will have enough for my future	1	2	3
f. I have a plan in place and am quite confident that I will have enough for my future	1	2	3

49. **For each of the following statements, please tick the box which best describes your opinion.** Indicate your opinion by circling *tend to disagree* (1), *undecided* (2), or *tend to agree* (3).	Tend to disagree	Undecided	Tend to agree
a. I am prepared to teach other people/family about basic finances such as saving, using credit cards, and learning about investments	1	2	3
b. I am a good role model for children regarding learning about savings and spending	1	2	3
c. I am reasonably sure that I'll have enough to retire on	1	2	3
d. you have to be thrifty (have a tendency to save) to be financially successful	1	2	3
e. it does not take money to make money	1	2	3

(For questions 50-52 select all relevant responses)

50. Which accounts do you have with the bank? (**Circle all that apply**)

savings account	S
money market account	M
credit card	CR
cheque account	CH
student loan	SL
personal loan	PL
car loan	CL
house mortgage	HM

51. Which of the following is true about your ownership of stocks (shares) and mutual funds? (**Circle all that apply**)

I don't own stocks (shares) or mutual funds	N
I own mutual funds in someone else's name	MI
I own mutual funds in my own name	M
I own stocks (shares) in someone else's name	SI
I own stocks (shares) in my own name	S

52. What is in your financial portfolio? **Circle all that apply**.

I have a will (testament)	T
I have a budget in writing	B
I have short-term insurance	I
I have savings	S
I have life assurance	L
I have a record of all expenses	R
I keep my financial records for tax purposes	F
I have a list of all my assets	A

(Quoted and adapted from *FleetBoston* Financial Literacy Survey of 2003, Jump$tart Coalition's Biennial Financial Literacy Survey, and research by Hilgert and Hogarth.)

Please use this space either for comments or for qualifying your answers:

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THANK YOU FOR TAKING PART IN THIS SURVEY

ENJOY YOUR DAY!!!