

# CHAPTER 1

## INTRODUCTION

*This study aims to explore the feasibility of adapting an existing monitoring system developed in the United Kingdom, to the South African context. Quality in education has, once again, become a key focus point for governments, as highlighted by international studies, such as the Third International Mathematics and Science Study (TIMSS), Progress in International Reading Literacy Study (PIRLS), Monitoring Learning Achievement (MLA) and Southern Africa Consortium for Monitoring Educational Quality (SACMEQ). The international studies, such as TIMSS and PIRLS, shed light on performance in reading and mathematics and seem to encourage governments to address issues relating to literacy, mathematics, and quality of education more broadly. International initiatives, such as Education for All, have emphasised educational quality as a main objective and highlighted the role that monitoring education can play in determining the quality of education. By using a monitoring system that provides valid and reliable information, important decisions on quality can be made. The decisions on quality of education then have the potential to facilitate the design and development of adequate intervention strategies. This research aims to explore whether the Middle Years Information System (MidYIS), which was developed in the United Kingdom, could be adapted and implemented for South Africa. This research is linked to a research project initiated in the United Kingdom in 1996 and a more recent one in South Africa since 2003 at the Centre for Evaluation and Assessment, which is funded by the National Research Foundation. The South African project takes place in collaboration with the project originators, the Curriculum, Evaluation, and Management Centre at the University of Durham in the United Kingdom.*

## 1.1 Introduction

The challenge we have taken up is to ensure that we nurture a high quality education system that is accountable, transparent, accessible, and efficient. It is also to ensure that public education is a vehicle that really does assist us in realising our dreams, that really does work to free the potential in all of us (Asmal, 2001, p. 1).

The aim of this research is to investigate the feasibility of adapting an existing monitoring system developed in the United Kingdom, to South Africa. The ultimate aim of the research is to investigate whether the Middle Year Information System (MidYIS), developed by the Curriculum, Evaluation and Management Centre (CEM) at the University of Durham, is a valid and reliable monitoring system for South Africa. The project in South Africa is named the South African Secondary School Information System (SASSIS) and the research investigates to what extent the system can be used to monitor the quality of teaching and learning at the beginning of the secondary school phase.

The challenge of any education system is to be able to provide quality education for participants in the system and it is not surprising that, internationally, there has been a re-emphasis on quality education. Two of the United Nations conferences, namely the Jomtien Declaration, in 1990, and the Dakar Framework for Action, in 2000, have recognised that quality in education is imperative if goals and objectives of developing countries are to be met (UNESCO, 2005).

There is little consensus, however, on what quality education is, as the concept could be understood differently by different stakeholders (Fitz-Gibbon, 1996). When asked to describe quality, many would use the terms such as useful, good, efficient, or measuring up (Botha, 2002) rather than a descriptor that is generically understood and standardised. For the purposes of this research, the quality of education is seen in definitive terms that require the identification of aims and objectives and is based on the concept that the more education realises these aims and objectives, the better the quality of education.

In 2003, the Centre for Evaluation and Assessment (CEA), at the University of Pretoria, in collaboration with the Curriculum, Evaluation, and Management Centre (CEM), at the University of Durham, embarked on a research project. The National Research Foundation, a national funding body in South Africa, funded this project in order to investigate the possibility of adapting existing monitoring systems established in the United Kingdom to the South

African context. The aim of adapting the monitoring systems is to provide information about the quality of education that learners receive, and more specifically the extent of academic gains made with the purpose to intervene timeously and effectively in the learners' development.

The CEM Centre is a research centre in the United Kingdom and has developed a number of monitoring systems for various stages of the United Kingdom's schooling system, most notably, Primary Indicators at Primary Schools (PIPS), The Middle Years Information System (MidYIS), The Year 11 Information System (YELLIS) and, finally, The Advanced Level Information System or Alis (CEM, 2002a). Of the several systems that could have been investigated, the CEA selected PIPS, to be implemented at the beginning of primary school, and MidYIS to be implemented at the beginning of the secondary school phase. PIPS and MidYIS were chosen because of the lack of monitoring systems in South Africa that focused specifically on the beginning of the primary and secondary school phases. The research reported on here concentrates on the secondary school component that focuses on Grade 8, which is the beginning of secondary school.

The MidYIS project was developed with the aim of providing schools with information on how learners would perform at the end of Key Stage 3 and at the end of their General Certificate Secondary Education (GCSE). Both Key Stage 3 and the GCSE are national assessments in the United Kingdom. The MidYIS project predicts how learners would perform in Key Stage 3 and GCSE. The predictions are based on results obtained from a baseline assessment. In order to provide schools with information on the future achievement of enrolled learners, the CEM Centre developed assessments that could be used for prediction and monitoring purposes as well as to work out the "value" the school has added to learners over a set period. Specific details of the MidYIS are elaborated on later in Chapter 4.

Before continuing, however, the current research project needs to be placed in context; thus a brief description of the South African context is appropriate (1.2). In this section, the condition of schooling is discussed as well as education policies relevant to monitoring, curriculum, and assessment issues. This will be followed by a discussion of the key concepts (1.3) of this study, namely: quality, monitoring systems and value-added monitoring systems. Thereafter, the problem this research aims to address is presented, including the general research questions, which guide the research (1.4). The chapter concludes with the structure of the dissertation (1.5).

## **1.2 South African education context**

South Africa is located at the southern tip of the African continent and has a total land area of more than 1.2 million square kilometres. Several countries border South Africa, namely: Namibia, Botswana, Zimbabwe, Lesotho, Swaziland, and Mozambique. There are approximately 46, 9 million people living in South Africa. South Africa is a multi-lingual country, recognising eleven official languages, namely: Afrikaans, English, isiNdebele, isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, SiSwati, Tshivenda and Xitsonga (International Marketing Council of South Africa, 2005). South Africa is divided into nine provinces with the Eastern Cape, Northern Cape, and Western Cape in the west and south, while the central region is known as the Free State. The Limpopo and North West Province can be found to the north of the country while KwaZulu-Natal can be found to the east. Gauteng and Mpumalanga are situated in the north-eastern region of the country. The largest provincial population can be found in Kwa-Zulu Natal, followed by Gauteng, while the most sparsely populated province is Northern Cape (International Marketing Council of South Africa, 2005).

The democratic government elected in 1994 has embarked on a substantial reform effort in many areas, including education (Howie, 2002). One of the key focus points was to make education more accessible and equitable to all population groups. One of the first steps in addressing the unequal education system was to focus on the allocation of funding and the content taught. In the section to follow, the education system is discussed (1.2.1), and the national curriculum (1.2.2) as well as the role that assessment plays in the curriculum (1.2.3) is presented.

### ***1.2.1 The South African education system***

Twelve million learners are currently enrolled in approximately 29 000 public schools throughout the country (Garson, 2005). Twenty-four percent of schools can be found in Eastern Cape, while a further 22% and 16% are located in Kwa-Zulu Natal and Limpopo respectively (see Table 1.1 for more detail). The structure of school education in South Africa comprises three bands. The first band is the General Education and Training (GET) Band that encompasses compulsory education. Compulsory education comprises Grade R, which is the reception year, as well as Grade 1 - Grade 9. The General Education and Training Band is divided into three phases: the Foundation Phase, which comprises Grade 1-3, the Intermediate Phase (Grade 4-6) and the Senior Phase, which comprises Grade 7-9 (South Africa Yearbook, 2003). The second band is the Further Education and Training (FET) Band

encompasses Grade 10 – 12, while the third band is called Higher Education and Training (HET), which includes all tertiary education (South Africa Yearbook, 2003).

Currently, illiteracy rates in South Africa are approximately 30% of the adult population (an adult is defined as a person who is over 15 years of age). It is estimated that 6-8 million adults are not functionally literate (Garson, 2005). The net enrolment ratio for 2002 was 66%. In 2000, of the learners who completed primary school, only 93% progressed to secondary school (World Bank Education Profile, 2002). Furthermore, the largest percentage of learners enrolled in 2003 as a portion of the national enrolments were found in Kwa-Zulu Natal (23%) while the smallest percentage of learners were enrolled in the Northern Cape, with 2% of the national enrolments (see Table 1.1 for details).

**Table 1.1 Information on learners, educators, and schools in 2003**

Province	Type of School	Learners <sup>1)</sup>			Educators <sup>2)</sup>			Schools			L:E Ratio <sup>4)</sup>	L:S Ratio <sup>5)</sup>
		Number	As % of Provincial Total	As % of National Total	Number	As % of Provincial Total	As % of National Total	Number	As % of Provincial Total	As % of National Total		
Eastern Cape	Public	2 100 024	99.2	17.9	63 899	98.5	18.8	6 100	98.9	23.6	32.9	344
	Independent	16 402	0.8	5.6	966	1.5	4.1	65	1.1	6.5	17.0	252
	<b>Total</b>	<b>2 116 426</b>		<b>17.6</b>	<b>64 865</b>		<b>17.9</b>	<b>6 165</b>		<b>23.0</b>	<b>32.6</b>	<b>343</b>
Free State	Public	684 134	98.3	5.8	21 955	97.2	6.5	2 123	97.1	8.2	31.2	322
	Independent	12 021	1.7	4.1	641	2.8	2.7	63	2.9	6.3	18.8	191
	<b>Total</b>	<b>696 155</b>		<b>5.8</b>	<b>22 596</b>		<b>6.2</b>	<b>2 186</b>		<b>8.1</b>	<b>30.8</b>	<b>318</b>
Gauteng	Public	1 524 595	91.7	13.0	45 437 <sup>3)</sup>	84.5	13.4	1 873	84.2	7.2	33.6	814
	Independent	137 222	8.3	46.5	8 312	15.5	35.5	352	15.8	35.0	16.5	390
	<b>Total</b>	<b>1 661 817</b>		<b>13.8</b>	<b>53 749</b>		<b>14.8</b>	<b>2 225</b>		<b>8.3</b>	<b>30.9</b>	<b>747</b>
KwaZulu-Natal	Public	2 726 271	98.0	23.2	68 760	88.3	20.3	5 614	97.0	21.7	39.6	486
	Independent	56 780	2.0	19.3	9 069	11.7	38.7	174	3.0	17.3	6.3	326
	<b>Total</b>	<b>2 783 051</b>		<b>23.1</b>	<b>77 829</b>		<b>21.5</b>	<b>5 788</b>		<b>21.6</b>	<b>35.8</b>	<b>481</b>
Limpopo	Public	1 797 820	99.0	15.3	53 382	98.3	15.7	4 181	98.4	16.2	33.7	430
	Independent	19 032	1.0	6.5	916	1.7	3.9	70	1.6	7.0	20.8	272
	<b>Total</b>	<b>1 816 852</b>		<b>15.1</b>	<b>54 298</b>		<b>15.0</b>	<b>4 251</b>		<b>15.8</b>	<b>33.5</b>	<b>427</b>
Mpumalanga	Public	901 732	98.6	7.7	24 793	97.2	7.3	1 841	95.6	7.1	36.4	490
	Independent	13 007	1.4	4.4	722	2.8	3.1	85	4.4	8.5	18.0	153
	<b>Total</b>	<b>914 739</b>		<b>7.6</b>	<b>25 515</b>		<b>7.0</b>	<b>1 926</b>		<b>7.2</b>	<b>35.9</b>	<b>475</b>
North West	Public	880 946	98.9	7.5	29 693	97.9	8.8	2 211	98.1	8.6	29.7	398
	Independent	10 090	1.1	3.4	626	2.1	2.7	42	1.9	4.2	16.1	240
	<b>Total</b>	<b>891 036</b>		<b>7.4</b>	<b>30 319</b>		<b>8.4</b>	<b>2 253</b>		<b>8.4</b>	<b>29.4</b>	<b>395</b>
Northern Cape	Public	199 229	98.6	1.7	6 068	98.2	1.8	441	97.1	1.7	32.8	452
	Independent	2 781	1.4	0.9	111	1.8	0.5	13	2.9	1.3	25.1	214
	<b>Total</b>	<b>202 010</b>		<b>1.7</b>	<b>6 179</b>		<b>1.7</b>	<b>454</b>		<b>1.7</b>	<b>32.7</b>	<b>445</b>
Western Cape	Public	929 262	97.1	7.9	25 192	92.5	7.4	1 456	91.2	5.6	36.9	638
	Independent	27 574	2.9	9.4	2 056	7.5	8.8	141	8.8	14.0	13.4	196
	<b>Total</b>	<b>956 836</b>		<b>7.9</b>	<b>27 248</b>		<b>7.5</b>	<b>1 597</b>		<b>5.9</b>	<b>35.1</b>	<b>599</b>
National	Public	11 744 013	97.6		339 179	93.5		25 840	96.3		34.6	454
	Independent	294 909	2.4		23 419	6.5		1 005	3.7		12.6	293
	<b>Total</b>	<b>12 038 922</b>			<b>362 598</b>			<b>26 845</b>			<b>33.2</b>	<b>448</b>

(Source: Education statistics in South Africa at a glance, 2005a)

The main challenge for South African education in recent years has been to address access, equity, and quality. The apartheid system left the country with marked inequalities along racial lines. International studies, such as SACMEQ and MLA, have alluded to this, revealing marked underperformance of South African learners compared with other countries in the southern and eastern region of Africa (UNESCO, 2005).

Conditions in many South African schools are extremely poor and there are substantial disparities between schools because of the apartheid legacy (Howie, 2003). The vast backlogs created by the educational policies of the apartheid government, in conjunction with modest economic growth, have prevented extensive transformation of schools that serve historically disadvantaged groups. These deep inequalities and conditions of deprivation were highlighted in a comprehensive National Study of School Needs (Lemon, 2004). The School Register of Needs Survey (2000) established that approximately 16.6% of learners were without toilet facilities. In addition, 28% of schools surveyed did not have access to water, while only 57.1% of schools had access to electricity. Thirty-five point five percent of the schools reported that they had no access to any form of telecommunication, not even a telephone (National Department of Education, 2001). Moreover, there was insufficient funding to rebuild schools, renovate buildings as well as to supply learning materials and teaching aids in time for use (Lethoko, Heystek & Maree, 2001). Learning materials in some schools were scarce, with up to five learners sharing a book. In addition, although the School Register of Needs found that, on average, the learner to teacher ratio was 32:1, in some rural areas, this figure was tripled, with a learner to teacher ratio of 90:1 (Buthelezi, 2003).

The fact remains that schools are situated in different contexts and are faced with many challenges; however, South Africa is a country with “natural wealth and many cultures” (Howie, 2002, p.9). It is also notorious, as mentioned earlier, for the apartheid policies that have left a lasting impression on the education system in the country. Evidence of this lies in the appalling conditions in many schools across the country as described above. It is of significance to note that these conditions exist primarily in previously designated African, Coloured and Indian schools. Prior to 1994, South Africa had nineteen different Departments of Education. These were separated by race, geography and ideology (National Curriculum Statement, 2002). The curriculum played a powerful role in reinforcing inequality, by dictating what children were taught, how children were taught and, even, whether children were taught at all. The situation was exacerbated by the philosophy that different population groups were to be taught differently according to the roles they were expected to play in society (National Curriculum Statement, 2002). South Africa has attempted to address the issue of inequality, since the first democratic elections in 1994 (Howie, 2002).

### **1.2.2 National revised curriculum statement**

Policy, as well as curriculum change in post-apartheid South Africa started immediately after the election in 1994. Changes to the curriculum included a process of syllabus revision and subject rationalisation: laying the foundations for a single national core syllabus. The national curriculum for Grades R-9 was first published in October 1997, and was introduced into schools in 1998. The new curriculum was named Curriculum 2005 to indicate the year in which the curriculum should be fully implemented. Outcomes-based education (OBE) forms the core of the new curriculum.

OBE is an educational model that originated in the United States of America (The Chalk Face, 1999). The model was developed in response to the view that traditional education systems were not 'producing' citizens with the skills, values, and knowledge that were needed to participate in the changing world of work (JUTA, 2003). At the heart of OBE are three basic premises (Killen, 2002, p. 3):

- 1) All learners can learn as well as succeed; but the rate at which they do this is not necessarily the same for everyone or even performed in the same way;
- 2) Success in learning promotes success in learning;
- 3) Schools, as well as educators, can control the conditions that will determine whether learners are successful.

In South Africa, OBE has elements of the economic accountability features of OBE systems in other countries (e.g. the United States, United Kingdom, Australia, and New Zealand). In addition to incorporating accountability features, the system, as implemented in South Africa, differs slightly in other ways (Botha, 2002). In South Africa there is an emphasis on the transformation process, where equity in education, access to education, redress, and quality assurance are highlighted (Botha, 2002). In the South African context, OBE is an attempt to reform educational practices so that learners become better prepared to cope with life's demands and changing circumstances. In this context, learners are not merely required to acquire knowledge, but also be able to demonstrate skills and to display values (Kotzé, 2002).

The National Department of Education (1998, p. 9) views OBE as "a learner centred, result-oriented approach to education and training that builds on the notion that all learners need to and can achieve their full potential, but notes that this may not happen in the same way or within the same period". For the National Department of Education, this implies that what the learner needs to learn is clearly defined, that progress is determined by demonstrated



achievement and that each learner's needs are accommodated by using multiple strategies and assessment tools. In addition, each learner is provided with the time and assistance needed in order to realise his or her potential. Killen (2002, p. 16-17) elaborates on the National Department of Education's view stating that OBE should be developed around certain principles that would serve to guide the design, the delivery and the documentation, as well as the decision-making process that occurs. These principles include the premise that:

- ❖ The outcomes-based programme must have a clear focus on learning outcomes that are stated clearly;
- ❖ These outcomes are what learners should know and be able to demonstrate, should be practical and useful;
- ❖ Curriculum and instructional design is 'derived' from the most significant outcomes;
- ❖ The outcomes should be challenging and achievable, in order to motivate students to progress to a higher performance level;
- ❖ Time should be used as a flexible resource that allows educators to accommodate learner differences;
- ❖ Students should be given more than one chance to receive instruction and to demonstrate their learning;
- ❖ Assessment should be an integral component of instruction and, ideally, should use real-world situations to assess application of knowledge and skills;
- ❖ Learners should take responsibility for their learning.

In 2000, a Ministerial Committee reviewed Curriculum 2005 and its implementation. The review included the structure and design of the curriculum, educator orientation, training and development, learning support materials, provincial support to educators in schools and implementation timeframes (National Curriculum Statement, 2002). The main findings of the review were that there was support for the change in curriculum but that the understanding of the new curriculum and its implications varied. In addition, the review found that there were basic flaws in the structure and design of the curriculum. The language used in the new curriculum was often complex and confusing. Moreover, there was a lack of alignment between the curriculum and the assessment policies. However, the lack of alignment could be traced back to inadequate training, especially in the early implementation process (Howie, 2003). The result of the review process was the revision of the curriculum.

In the Revised National Curriculum Statement (RNCS), both learning outcomes and assessment standards were designed using the critical and developmental outcomes as a starting point. Here a learning outcome refers to everything that has to be learnt and the term

assessment standard refers to the level at which learners should demonstrate that the outcome has been achieved (Kotze, 2004). The critical and developmental outcomes describe the kind of citizen the education and training system should ideally create. A critical outcome refers to broad, generic cross-curricular statements and could be compared to culminating outcomes or real-life roles that everybody should attain. Developmental outcomes, on the other hand, contribute to the personal, social and economic development of the learner and could be likened to discrete outcomes and information that is “nice to know but not essential” to know (du Toit & du Toit, 2004, p. 15).

The revised national curriculum comprises eight learning areas. Each learning area is viewed as a field of knowledge, skills, and values. It is unique in itself but also has links with other learning areas and consists of learning outcomes that are derived from both the critical and the developmental outcomes (National Department of Education, 2002a).

1) *Language learning area*: during the Foundation Phase, 40% of time is allocated to the language learning area while 25% of time is allocated in the Intermediate and Senior Phases. Learners are expected to be proficient in at least two official languages and to be able to communicate in other languages. This learning area encompasses six (6) learning outcomes (National Department of Education, 2002a):

- ❖ *Listening*, this focuses on listening for information and enjoyment and the ability to respond appropriately.
- ❖ *Speaking*, in which the learner is expected to communicate confidently and effectively.
- ❖ *Reading and viewing*, which entails reading and viewing information and responding critically.
- ❖ *Writing*, in which learners are expected to be able to write different kinds of factual and imaginative texts.
- ❖ *Thinking and reasoning*, where the learner is enabled to use language to think and reason and to access, process, and use information for learning *purposes*.
- ❖ *Language structure and use* emphasises the sounds, words, and grammar of language.

2) *Mathematics learning area*. Thirty-five percent of learners’ learning time is allocated to mathematics in the Foundation Phase while 18% is allocated in the Intermediate and Senior Phases. Five Outcomes are included in the mathematics learning area (National Department of Education, 2002a):

- ❖ *Numbers, operations and relationships* where the learner is expected to be able to recognise, describe and represent numbers. In addition, learners are

expected to recognize relationships between numbers and to count, estimate and calculate with the aim to solve problems.

- ❖ *Patterns, functions, and algebra.* In this Outcome, learners are exposed to algebraic language and taught the skills to solve algebraic problems.
  - ❖ *Space and shape,* where learners are expected to describe and represent 2-D and 3-D objects in a variety of orientations.
  - ❖ *Measurement* that entails the use of appropriate measuring units, instruments, and formulae.
  - ❖ *Data handling* where learners are exposed to collecting, summarizing, displaying and critically analysing data in order to make inferences and draw conclusions.
- 3) *Natural sciences* is the third learning area. Thirteen percent of learning time is allocated to this learning area for both the Intermediate and Senior Phases. Three outcomes are included in the natural sciences learning area (National Department of Education, 2002a):
- ❖ *Scientific investigations* in which learners investigate relationships and solve problems in science, technology and in environmental contexts.
  - ❖ *Constructing scientific knowledge.* Here learners are expected to know, to interpret, and to apply scientific, technological, and environmental knowledge.
  - ❖ *Science, society and the environment* in which learners are expected to demonstrate understanding of the interrelationships between science, technology, the environment, and society.
- 4) *Social sciences learning area* is allocated thirteen percent of learning time. This learning area comprises of two components, namely geography and history, each with three learning outcomes (National Department of Education, 2002a).  
The outcomes of the history component are:
- ❖ Historical enquiry
  - ❖ Historical knowledge
  - ❖ Understanding and historical interpretation.
- The outcomes of the geography component are:
- ❖ Geographical enquiry
  - ❖ Geographical knowledge
  - ❖ The understanding as well as the exploring of issues
- 5) *Arts and culture learning area* is allocated eight percent of learning time. Four learning outcomes are included in this learning area (National Department of Education, 2002a), namely:
- ❖ Creating, interpreting and presenting

- ❖ Reflecting
  - ❖ Participating and collaborating
  - ❖ Expressing and communicating
- 6) *Life orientation* comprises five learning outcomes and totals 8% of teaching and learning time for the Intermediate and Senior Phases. The five outcomes are (National Department of Education, 2002a):
- ❖ Health promotion
  - ❖ Social development
  - ❖ Personality development
  - ❖ Physical development and movement
  - ❖ Orientation to the world of work
- 7) *Economic and management sciences* has four learning outcomes and totals 8% of teaching and learning time for the Intermediate and Senior Phases. The four learning outcomes are (National Department of Education, 2002a):
- ❖ Knowledge and understanding of the economic cycle
  - ❖ Understanding of sustainable growth and development
  - ❖ Managerial, consumer and financial knowledge as well as skills
  - ❖ Entrepreneurial knowledge and skills
- 8) *Technology learning area* is allocated eight percent learning time in the Intermediate and Senior Phases. Its three learning outcomes are (National Department of Education, 2002a):
- ❖ Technological processes and skills
  - ❖ Technological knowledge and understanding
  - ❖ Technology, society and environment

Curriculum objectives require mechanisms to determine whether implementation is successful. Assessment is one of the mechanisms used for this purpose. It is an essential element of OBE and an integral part of the teaching and learning process (Siebörger & Macintosh, 2004). Furthermore, learners do not necessarily learn what is expected of them but rather, as du Toit and du Toit (2004, p. 24) phrase it, “learn what is inspected”. Learning is expected to improve when continuous, transparent, and valid assessment forms part of the learning programme (du Toit & du Toit, 2004).

### **1.2.3 Assessment policies**

Assessment is a fundamental part of OBE and is the mechanism used to demonstrate the achievement of predetermined outcomes (Killen, 2002). Assessment is seen as the process

of collecting, synthesising, and interpreting information about learners' achievement (Gay & Airasian, 2003). Furthermore, assessment needs to be developed with a clear sense of curricular purpose and analysis, including what assessment will be undertaken, by whom it will be undertaken and how the assessment will be marked (Reddy, 2004). Four distinct steps can be identified in this process (GDE Circular, 2002, p. 13):

- 1) Generating and collecting evidence of achievement;
- 2) Evaluating this evidence against outcomes;
- 3) Recording the findings of the evaluation ;
- 4) Using the information to assist the learner in his/her development and to improve the process of teaching and learning.

Moreover, assessment is undertaken in order to monitor learner progress so that decisions can be made about how to best facilitate further learning (GDE Circular, 2002). Decisions have to be made about what to teach, how to teach, how long to teach, whether learners should be grouped, what questions to ask, (and how these questions should be asked) and what activities should be included (McMillian, 2001) so that educators can (National Department of Education, 1996):

- i. Determine whether learning required for the achievement of specific outcomes is taking place and what difficulties are experienced.
- ii. Report to parents and other role-players and stakeholders on the levels of achievement during the learning process and to build a profile of achievement.
- iii. Provide the necessary information for the evaluation and review of learning programmes.
- iv. Maximise learners' access to knowledge, their skills, attitudes, and values as defined by the curriculum statements (National Department of Education, 1996).

In the OBE system, adopted by the South African government, continuous assessment (CASS) is used, as it enables educators to use any planned learning experience to assess learner achievement and progress. Continuous assessment is the process of gathering valid and reliable information about learner performance on an ongoing basis and measuring it against clearly defined criteria (GDE Circular, 2002). In addition, CASS takes place over a period in which learner growth and development is supported. CASS allows for integrated assessment in which a variety of assessment strategies is used and it allows for feedback as an integral mechanism for learning (National Department of Education, 2002). The continuous assessment model that is promoted by the South African government makes use of five different types of assessment and may use several different strategies to obtain the necessary information (National Department of Education, 1998):

- ❖ *Baseline assessment* is undertaken at the beginning of a new set of activities in order to ascertain what learners already know and what they can demonstrate.
- ❖ *Formative assessment* involves a developmental approach and is specifically designed to monitor and to improve the learning progress. Positive achievement of the learner is recognised and discussed and appropriate further steps are considered. This assessment highlights a particular child's strengths and needs while information gained from formative assessment can be used when discussing and devising the next steps in that child's development.
- ❖ *Diagnostic assessment* focuses on ascertaining the nature and cause of a learning difficulty in order to provide the appropriate remedial help and guidance. Diagnostic assessment identifies a pupil's underlying strengths and needs in a particular area. Such an assessment may be able to explain why a child is experiencing a specific learning difficulty and can help teachers to evaluate the severity of the problem while providing information to help future teaching programmes.
- ❖ *Summative assessment* focuses on grading and certification, making use of a series of assessment activities and results in an overall report of the learner's performance. Summative assessment usually occurs at the end of a scheme of work or phase of education
- ❖ *Systemic evaluation* is used to evaluate the appropriateness of the education system and involves the monitoring of learners' attainment at regular intervals making use of instruments designed provincially and nationally. Systemic evaluation plays an integral part in ensuring that learners obtain the maximum benefit from the education system. In South Africa, this assessment takes place at the Grade 3, 6 and 9 levels. The main objective of the systemic evaluation is to assess the effectiveness of the system as well as the extent to which the goals of educational transformation have been achieved. Systemic evaluation is intended to monitor the national standards and the quality of education.

One of the biggest paradigm shifts that educators had to make is using assessment in different ways and for different purposes. The curriculum used during the apartheid years was prescriptive, content heavy, detailed and authoritarian in nature, heavily dependent on textbooks and rote-learning (Howie, 2003). As a result, thinking about assessment had to change from a more traditional orientation to an authentic assessment orientation. Here authentic assessment refers to the learners demonstrating the application knowledge and skills to real-life tasks (McMillan, 2001). The shift between traditional assessment and authentic assessment is presented in Table 1.2.

**Table 1.2 Trends in the purpose of assessment**

From	To
<ul style="list-style-type: none"> <li>• Sole emphasis on assessment after learning</li> <li>• Isolates and disconnects facts and skills</li> <li>• Assessing with decontextualised tasks</li> <li>• Single correct answers</li> <li>• Providing little feedback to learners</li> <li>• Sporadic assessment</li> <li>• Controlling and documenting</li> <li>• Demonstrating knowledge with unauthentic tasks</li> <li>• Knowing and simple understanding</li> <li>• Memorisation</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment during learning</li> <li>• Integrated skills</li> <li>• Assessing with contextualised tasks</li> <li>• Many correct answers</li> <li>• Providing considerable feedback to learners</li> <li>• Continual assessment</li> <li>• Motivating</li> <li>• Demonstrating knowledge with authentic tasks</li> <li>• Deep understanding and application</li> <li>• Thinking</li> </ul>

*(Source: McMillan, 2001)*

OBE has been heralded as the system that could change the education for the better. Many difficulties, however, have been experienced in the implementation of OBE and the use of assessment as a key part of the learning process. The Curriculum 2005 review clearly indicated that there should be a clearer and closer interaction between curriculum and assessment as well as an emphasis on the idea that assessment practice is crucial to the success of Curriculum 2005 (Howie, 2003). The Review Committee based their recommendation on the lack of clarity about assessment in Curriculum 2005, specifically about what should be assessed and how it should be assessed (Rault-Smith, 2001).

### 1.3 Key concepts

As this study addresses the issue of monitoring education, it is important that key concepts associated with monitoring be discussed. In the section to follow, the concept of quality in education (1.3.1) and monitoring (1.3.2), as well as the use of value-added approaches (1.3.3), are elaborated on. These concepts are discussed in more detail in Chapter 2, which comprises a review of the relevant literature. The concepts of quality and monitoring are interrelated and one could view monitoring as a vehicle on the road to ensure quality. Monitoring is the cornerstone of this research. Although monitoring can take place at various levels of the education system, e.g. at a national-level, a provincial-level or at the school-level, for the purposes of this research, only the learner, classroom and school-level will be addressed.

#### 1.3.1 Quality in education

The current research takes place against the backdrop of the monitoring of education in order to ascertain the quality of teaching and learning. Educational quality can be thought of in the following terms:

- ❖ Schools being able to transform system-inputs into system-outputs (OECD, 2005).
- ❖ The functioning of education and the relevance of educational objectives (Scheerens, Glas & Thomas, 2003)
- ❖ The fairness of educational resource distribution and the economic use of these resources (Scheerens et al., 2003)
- ❖ What learners learn, not only in terms of knowledge but also in terms of skills that have been mastered (van der Werf, Brandsma, Cremers-van Wees & Lubbers, 1999).
- ❖ The value of the certificate learners receive after schooling (van der Werf, Brandsma et al., 1999).

The National Qualifications Framework (NQF), in South Africa, defines “quality education” and how “quality education” can be measured. Quality is measured against NQF specifications and is monitored to ascertain whether quality has been maintained or whether progress has been made with regard to the prescribed specifications. This monitoring process should lead to decision-making and improvement strategies (Gawe & Heyns, 2004).

There may be debate about what quality education entails, but it would appear that there is common ground. Implicit in the concept of quality education is the idea that there are certain



aims and objectives that should be achieved, and the more education realises these aims and objectives, the better the quality becomes. Thus quality refers to the adequacy and appropriateness of aims and objectives that often imply a scale, so that quality can be assessed as being good or poor (Kellaghan & Greaney, 2001). For the purposes of this research, quality is seen in terms of whether the aims and objectives identified are being realised. The more education realises these aims and objectives the better the quality of the education. Once the aims and objectives have been identified, a process of evaluation or monitoring takes place in order to ascertain which aims and objectives should have been met and which aims and objectives have actually been met (Scheerens et al., 2003).

### ***1.3.2 Monitoring in education***

School success has often been thought of in terms of achievement. Emphasis has also been placed on the tools used to monitor the progress of learners in order to ensure achievement (Safer & Fleischman, 2005). School success, however, is not merely achievement and the concept of monitoring needs to be defined. At present, there is little agreement in literature on the definition of monitoring (Sammons, 1999). Even though there is little agreement on what the concept means, monitoring is constantly mentioned in school effectiveness research (SER) and is often linked to the achievement of learners (Scheerens et al., 2003, p. 14) "...frequent monitoring and evaluation of students' progress stand out as a factor that is consistently mentioned in research reviews as a correlate of educational achievement." In this section, the concept of monitoring in education will be elaborated on as well as the reasons for the importance of monitoring and how monitoring can be applied.

Scheerens et al. (2003) are of the opinion that monitoring can be defined as a systematic gathering of information in order to make judgments about the effectiveness of schooling. Furthermore, monitoring stresses ongoing gathering of information as a basis for making decisions with the purpose to improve learning. Raffan and Ruthen (2003) further elaborate on the gathering of information by linking the activity to learning and observing learning, in terms of difficulties experienced and progress made. The monitoring system utilised and envisaged in this research concentrates on the learner at the classroom-level, but is also situated at the school-level as a monitoring system for governance and management bodies.

Monitoring is important, as it provides mechanisms for formally regulating the desired level of quality (Scheerens et al., 2003). It is seen as a tool that focuses learners, educators and the principal on set goals (Sammons, 1999). Monitoring of learners also has the potential to inform planning, teaching and assessment, but, most importantly, monitoring sends the

message that the educator and the school are interested in the learner and in the progress being made (Sammons, 1999). Lockheed and Murphy (1996) concur by stating that monitoring is vital to the learning process and assists children who are not performing to reach their potential. Monitoring assesses achievement trends over time (Lockheed, 1996) and in the words of Hager and Slocum (2005, p. 58) in “a system for ongoing progress, monitoring is critical to ensure the student is continually moving toward mastery”. For the purpose of this research, monitoring is seen as gathering relevant information about learner performance, at various stages, in order to ascertain whether academic gains have been made and to identify strategies where necessary.

Monitoring can be formal or informal and can therefore take various forms (Sammons, 1999). In its formal context, monitoring could refer to learner monitoring systems, by which is meant a set of educational achievement tests that help to identify not only learners who have fallen behind, but also the subject matter or skills in which difficulties are experienced. Alternatively, there is informal monitoring which can take the form of assessment-based self-evaluation in which performance is evaluated either internally or externally (Scheerens et al., 2003). Regardless of which form of monitoring is applied, certain tools are required to track progress (Lockheed, 1996). Many assessments have been designed and developed to monitor learner progress. Scheerens (2001) is of the opinion that factors that have received support in international school effectiveness literature, such as leadership or feedback and reinforcement, should be used as a basis for the selection of indicators for monitoring purposes in developing countries. One could argue that the factors identified in international school effectiveness literature could be adapted to serve as measurement criteria that would be appropriate in the intended context.

The current research aims to adapt an existing monitoring system for Grade 8, i.e. the beginning of secondary school. Various contextual factors are taken into account in order to interpret the gathered information (see Chapters 2 and 3 where these factors are presented and discussed). In addition, the current research can be classified as a learner monitoring system because the learner and the classroom-level are the primary focus, but, for the purposes of this research, contextual information is also gathered at the school-level.

### **1.3.3 Value-added assessment as a monitoring mechanism**

Value-added assessment is not a new type of assessment (School Directors Handbook, 2003). Rather, it refers to a model in which academic gains made by learners are investigated and thus fulfils a monitoring function (refer to Chapter 2 where models of value-added assessment are presented). This model specifically uses statistical analysis to determine the effects of educators and schools on learning (School Directors Handbook, 2003). As such, the model can be viewed in terms of different levels, namely the individual learner-level, between the learner or classroom-level and the school-level.

On the learner-level, the primary meaning of value-added assessment is the contribution that the school makes to the learner and the relative progress that learners make in comparison to their past progress as well as to other learners for monitoring purposes (Tymms, 2000). Value-added assessments can also be used in order to monitor schools by taking the difference in the learner populations of the schools into account (Harker, 2003). This is done by isolating the factors possibly tied to learners' achievement, such as gender, ethnic group, date of birth, level of special education needs and socially disadvantaged backgrounds (Saunders, 2002) in order to determine the value that the school has added to learner growth (academic gains) from one point in time to another. Schools that are similar in nature (size, resources and learner population) can be compared with one another in order to monitor progress made by learners.

To be able to investigate academic gains, it is necessary not only to assess learners' performance at certain points in their development but also to measure the progress of a larger population in order to determine whether the learner did better or worse than might be expected (McDouall, 1998). Therefore, value-added assessments can be thought of in terms of a pre-post test assessment framework, in which the relationship between scores is compared in order to establish whether the learner is advancing and at what pace (School Directors Handbook, 2003). Value-added assessments also provide sophisticated ways of analysing potential school effects (Mortimore & Sammons, 1994).

### **1.4 Policies on monitoring quality in education**

Three South African government initiatives in the monitoring of education, directed toward the establishment of systems with which to ascertain the level of quality in the education system, will be discussed in this section. They are *Systemic Evaluation*, the *Integrated*

*Quality Management System*, and *Whole School Evaluation*. In the words of NAPTOSA (2006, p.1), an education union:

An improvement in the quality of provision of education to redress the inequalities of the past in South Africa is probably the most crucial element of a truly transformatory agenda. An improvement in quality lies at the heart of the vision for education and must inform all our decisions about policy development, how policy is implemented, and how we measure our successes or failures.

The three policy initiatives discussed were developed at different times. For example, the policy on *Whole School Evaluation (WSE)* and *Systemic Evaluation (SE)* was established before the *Integrated Quality Management System (IQMS)*. As a result of challenges encountered with the implementation of the *Whole School Evaluation* policy, other avenues had to be sourced and the policy on *Whole School Evaluation* was subsumed under the *Integrated Quality Management System*. The policy initiatives for monitoring the quality of education are summarised in Table 1.3. The table provides information pertaining to the aim of the policy and provides a brief description of the policy. Whether the policy is focused on a system or national-level, meso or school-level, micro or classroom-level and finally the nano or individual/personal-level is indicated. Finally, the approach to the policy is also provided.

**Table 1.3 Policy initiatives aimed at monitoring the quality of education**

<b>Policy</b>	<b>Aim</b>	<b>Description</b>	<b>System levels</b>	<b>Approach</b>
<b>Systemic Evaluation (SE)</b> (National Department of Education, 2003a)	SE aims to measure the effectiveness of the education system by assessing the components of the education system at selected grade levels (Grade 3, 6 and 9), provide and implement a National Framework for the evaluation of the education system and develop benchmarks from which performance can be interpreted.	SE collects information on learner performance as well as on contextual factors that might influence the learner. The SE policy draws heavily on school effectiveness research by making use of an inputs-process-outputs model.	System-level.	Sample of schools is drawn to participate.
<b>Integrated Quality Management System (IQMS)</b>	The IQMS consists of three programmes or policy initiatives aimed at the development and monitoring of quality public education for all as well as the improvement of learning, teaching, and accountability to the wider community.	Quality management should be expected to determine competence and to assess, but with the purpose of development so that support can be provided and opportunities for growth can be created. IQMS intends to promote accountability and monitor the overall effectiveness of both individuals and the system. The crucial role that quality education plays and the right to quality education that all learners have are recognised. The integrated system endeavours to be transparent and includes elements of self-evaluation and discussion with the goal of trying to find ways and mechanisms for improvement so that quality education can be provided (National Union for Educators, 2005).	Nano, meso, and system -level.	All individuals in the system.
<b>Developmental Appraisal as part of IQMS</b>	Aims to identify needs and further development as to how these needs can be addressed.	Reviews individual educators in terms of areas of strength and weakness and, based on the review, draws up developmental programmes aimed at educator development.	Nano -level.	Educators and education officials.
<b>Performance management as part of IQMS</b>	Aims to improve performance against corporate goals improve awareness of performance standards, improve communication between supervisors and staff and to evaluate performance fairly and objectively as well as provide a basis for decisions on possible rewards.	Evaluates individual educators for salary progression, grade progression, and affirmation of appointments, rewards, and incentives.	Nano -level.	Educators and education officials.
<b>Whole School Evaluation (WSE) as part of IQMS</b>	WSE aims to improve the overall quality of education and to evaluate the overall effectiveness of the school, including infrastructure, resources, and quality of teaching and learning.	WSE focuses on the improvement of quality and standards of performance in schools and combines a number of approaches, namely self-evaluations that are conducted by schools and external evaluations.	Meso-level.	All schools.

The policies described are in various stages of development. *Systemic Evaluation* has taken place at Grade 3 and Grade 6, in 2001 and 2004, respectively. *Systemic Evaluation* has not yet, however, been implemented on the Grade 9 level. The *Integrated Quality Management System* as well as *Whole School Evaluation* are still in infancy and, as such, need to be refined, streamlined and, possibly, simplified in order to make implementation possible (NAPTOSA, 2006).

However, the implementation of these policies has not been without challenges. At the launch of the Foundation Phase *Systemic Evaluation*, Kader Asmal (2003), the Minister of Education at the time, was open about the challenges experienced during the implementation of policy, however, he added that ways should be found to address these limitations and that was where research could play an important role. The implementation of the policy for *Whole School Evaluation* was difficult as key stakeholders viewed this policy with suspicion - see Jansen (2004, p. 60) who states, "...the WSE policy has not yet taken off because of contestations between teacher unions and the government as the driver of this policy". The opposition to *Whole School Evaluation* policy was based on the view that the policy was imposed from top down and was punitive in nature rather than developmental in nature as had been proposed. Furthermore, there was a lack of understanding as to what the policy entailed and how schools should go about implementing the policy (Jansen, 2004).

Clearly the policies needed to be evaluated. According to the *Plan of Action: Improving the Access to Free and Quality Basic Education* (2003b), the monitoring and evaluation framework of the Department of Education went into a review process (National Department of Education, 2003b). The reason for the review was that current structures did not adequately cover learner performance and the performance of the school in general. It is the Department's contention that an effective system and a well-managed school contribute to learner performance and should therefore be focused on.

The Department of Education then introduced *the Integrated Quality Management System* which has paved the way for the improvement of quality teaching and learning (Pampallis, 2004). In response to the National Councils of Provinces (2005), the current Minister of Education, Naledi Pandor, states that two key initiatives are already providing valuable data on the quality of education, namely the *Integrated Quality Management System* and *Systemic Evaluation*.

## 1.5 Research problem in context

Both initiatives, *Integrated Quality Management System* and *Systemic Evaluation*, mentioned by Minister Pandor are not yet adequately defined for use in secondary schools. *Systemic Evaluation* has taken place at the Grade 3 level, in 2001, and the Grade 6 level, in 2004, but has not yet been implemented in Grade 9. Furthermore, secondary schools need valid and reliable information from primary schools so they can attune and structure their learning programmes. The information, which is needed, could be provided in learner profiles but these are often missing or incomplete on arrival at secondary schools.

In addition, due to the lack of an adequate monitoring system for secondary schools, schools and educators lack baseline information from which to work and the pressures associated with the *Whole School Evaluation* component of the *Integrated Quality Management System* are still a reality. At the heart of the *Whole School Evaluation*, process is the concept of self-evaluation, not only in terms of learner performance but also in terms of other key areas such as management and classroom practice. At the beginning of 2007, the way in which this evaluation should take place has not been clarified.

This PhD research explores the Middle Years Information System (MidYIS) as a possible monitoring system for the South African context for use in secondary schools particularly. The appeal of the MidYIS project lies in the fact that the system attempts to ascertain the relative contribution the school has made to learners' learning by using a value-added approach. The MidYIS project has also been established in other countries such as New Zealand and Hong Kong. This poses the question that, if the MidYIS project is applied in other countries with success, then would such a system not be of value in the context of South Africa and, if so, under what conditions? Furthermore, the MidYIS project makes use of a "developed abilities" assessment and not an assessment that is purely curriculum-based. Developed abilities are the common ground between intelligence, aptitude, and achievement and reflect the effects of experience and learning (Reschly, 1990). Even though the assessment is not strictly curriculum-based, however, researchers in the United Kingdom have shown that there is a link between performance on the MidYIS assessment and that of school subjects, as will be shown in Chapters 2 and 4 of the dissertation. Even though the assessment is not curriculum-based and is an abilities assessment, it can be used to draw inferences based on the curriculum. This has added appeal for South Africa as resources and the implementation of the curriculum in addition to knowledge of the abilities of learners entering secondary school vary greatly among schools in different areas. Such a system could be of great value not only to schools and educators, but also to districts. By means of

focusing on Grade 8, on entry to secondary school, valuable information about the level of learner ability is provided which educators, schools, districts, and provinces can then use for monitoring purposes and to provide clues as to what intervention strategies need to be developed. Furthermore, subsequent performance can be compared with the baseline information to ascertain academic gain.

As a result of the vast disparities and variation among schools, additional information on the school and classroom-level, which would shed light on performance, has to be part of the monitoring system for South Africa. MidYIS focuses exclusively on the learner-level and does not make provision for collecting information on a classroom and school-level (see Chapter 4 for further elaboration). If performance, or rather, lack of performance, is to be investigated as part of the monitoring system, then additional information is necessary. Additional information on school, classroom, and learner-level will assist in the identification of key factors that could play a role in the performance of learners. Furthermore, schools that are similar in nature could be grouped and comparisons between like schools would be possible. This would give a more balanced view of learner performance and indeed the school's contribution to learner performance.

This research focuses specifically on how the instruments, a learner assessment and learner questionnaire, developed in the MidYIS project, can best be adapted for the South African context to obtain information about learner performance. Moreover, the type of system proposed aims to monitor the quality of teaching and learning at the learner, classroom, and school-level by means of including additional contextual information on the various levels. It is believed that the assessment used in MidYIS and contextualised for South Africa, in addition to the contextual indicators, will provide information that can be used by schools. The information could provide a base from which to evaluate the value the school has added to the learners' learning and identify potential problem areas. In order to achieve the aim of investigating MidYIS as a monitoring system that is feasible for South Africa, a number of research questions have been identified.

The first main research question identified for this research is ***how appropriate is the Middle Years Information System (MidYIS) as a monitoring system in the South African context?***



The first main research question comprises the following specific questions:

- 1.1 How does the Middle Years Information System (MidYIS) compare with other monitoring systems?
- 1.2 How valid and reliable are the data generated by the MidYIS monitoring system for South Africa?
- 1.3 What adaptations are needed to transform MidYIS into SASSIS, a monitoring system for the South African context?

MidYIS uses a developed abilities assessment to gather information. However, ability is only one factor in academic success and thus ability can only account for so much variance in terms of performance. Kline (1993) is of the opinion that a moderate, but significant, correlation of 0.3 or 0.4 is sufficient for the ability-academic relationship, but cautions that there are other factors that could have an effect on performance. If it could be established that the instruments are valid and reliable and that there is a link between MidYIS and school subjects, then what other factors need to be considered when interpreting performance? It could be argued, based on literature (Mortimore & Sammons, 1994; Sammons, 1999; Scheerens & Bosker, 1997; Scheerens, 1990, 2000), that contextual factors play a very important role in performance and, as ability can only account for a certain percentage of variance explained in terms of performance, then the question is what other factors could have an effect on performance and should form part of the monitoring system.

Thus a secondary question has been identified namely ***which factors have an effect on learner performance and therefore inform the design of the monitoring system?***

Four specific questions can be identified to address the second main research question, as the school system is a nested system with learners within classes and classes within schools.

- 2.1 What factors on a school-level affect the performance of learners on the assessment?
- 2.2 What factors on a classroom-level affect the performance of learners on the assessment?
- 2.3 What factors on a learner-level affect performance of learners on the assessment?
- 2.4 How can the identified factors be included in the design of the monitoring system?

## 1.6 Structure of the dissertation

Nine chapters compose this dissertation. Chapter 2 continues with the themes of monitoring and value-added assessment and critiques the literature in these areas, building upon the structure provided in Chapter 1. In this chapter (Chapter 2), types of monitoring systems as well as the use of a value-added system as a monitoring tool are elaborated on. Commonalities and differences are discussed and compared. Different approaches to value-added assessment are discussed as well as the use of ability as a predictor of academic success. Literature alludes to the fact that ability can only account for so much of academic success and that other factors play a role. Therefore, other factors influencing academic success based on school effectiveness research are also discussed. Chapter 3 includes a description of the conceptual framework, building on discussions found in Chapter 2. Furthermore, the discussions in Chapters 2, 3 and 4 are aimed at addressing the question of how MidYIS compares with other monitoring systems. The MidYIS project is discussed in detail in Chapter 4. In addition, steps are identified as to how the MidYIS project could be adapted for the South African context. The research design and methodology are discussed in Chapter 5 where issues of paradigmatic framework, sampling, instruments, validity issues, data collection, and data analysis are elaborated on. The chapter concludes with ethical considerations taken into account when conducting this research. Chapter 6 marks the beginning of the results chapters. The results of the validation strategies undertaken in terms of content-related validity (including face, content and curriculum validity) are presented in Chapter 6. Chapter 7 extends the discussion of validity by focusing on the construct-related validity and predictive validity of the assessment in addition to how reliable the assessment is. While Chapter 6 and 7 address the first main research question, Chapter 8 focuses on the second main research question. In this chapter factors on the school-, classroom-, and learner-level that (according to literature) may influence achievement are explored by means of multilevel analyses. The final chapter of the dissertation is the conclusions and recommendations chapter (Chapter 9) in which the main findings are discussed in light of the guiding research questions, literature, and conceptual framework. In light of the integration of the literature, research questions and conceptual framework recommendations are given.