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Appendix A: Description of the MidYIS sub-tests

Sub-test	Description	Number of items
Vocabulary	Vocabulary can be thought of as a collection of words (Merriam Webster Dictionary Online). However, for the purposes of the assessment vocabulary is a collection of words of which the meaning is understood, synonyms can be identified, used or recognised.	40 Items
Mathematics	Mathematics can be thought of as the science of numbers and their operations, interrelations, combinations, generalizations, and abstractions in terms of space configurations and their structure, measurement, transformations, and generalizations (Merriam Webster Dictionary Online).	74 Items
Proof reading	Proof reading is seen as the ability to identify mistakes in spelling, punctuation, grammar or style and be able to correct them (Sharpling, 2000).	34 Sentences
Perceptual speed and accuracy	Perceptual speed and accuracy is seen as the ability to read quickly, compare sets of information in which small detail is perceived rapidly and accurately. In the assessment this translates into quickly and accurately identifying differences when comparing letters, objects, numbers, symbols, or patterns.	26 Items
Cross-sections	Cross-sections measures of spatial visualisation ability. Spatial visualisation is the ability to create a mental image of an object and then to manipulate it mentally (Robichaux, 2005). In the assessment this translates in to 2D and 3D visualisation and manipulation.	16 Items
Block counting	Block counting measures of spatial visualisation ability. Spatial visualisation is the ability to create a mental image of an object and then to manipulate it mentally (Robichaux, 2005). In the assessment this translates in to 2D and 3D visualisation and manipulation.	20 Items

Sub-test	Description	Number of items
Pictures	Pictures assess the ability to detect patterns, reason and think logically (Kline, 1993).	18 Items

Appendix B: Description of constructs included in the learner questionnaire

Constructs	Description	Number of Items
Demographics: Learner	Background information (age, gender, SES).	29 Items
Learner achievement	The current status of learners with respect to proficiency in given areas of knowledge or skills (Gay & Airasian, 2003).	Information from the baseline assessment
Learner attitudes	Moderately intense emotion that prepares or predisposes an individual to respond consistently in a favourable or unfavourable manner when confronted with a particular object, fairly specific affective characteristic (Anderson, 1988). Depending on whether attitudes are positively or negatively directed towards a particular object it can promote or inhibit learner behaviour in the classroom, home, peer group and ultimately learning and career choices (Anderson, 1994).	35 Items
Motivation to achieve	Motivation may be defined as the causes for initiation, continuation or cessation and direction of behaviour or towards some goal. Achievement motivation can be described as a pattern of planning, actions and feelings connected with striving to achieve some internalised standard of excellence (Day, 1988). Academic motivation is concerned with the factors which determine the direction, intensity and persistence of behaviour related to learning and achievement in academic frameworks (Nisan, 1988).	6 Items
Motivation to continue learning	Motivation may be defined as the causes for initiation, continuation or cessation and direction of behaviour or towards some goal. Achievement motivation can be described as a pattern of planning, actions and feelings connected with striving to achieve some internalised standard of excellence (Day, 1988). Motivation to continue learning is the initiation, persistence and mindful	9 Items

Constructs	Description	Number of Items
	learning in order to attain a future goal (Lens, 1994).	
School climate	An orderly atmosphere in which there are rules and regulations, punishment as well as rewards, where absenteeism and dropout is monitored and the behaviour and conduct of learners is taken into account. Internal relationships are also highlighted here in terms of priorities, perceptions and relationships between the various parties in the school, appraisal of roles and tasks and finally the facilities and buildings (Scheerens & Bosker, 1997).	12 Items
Parental involvement	Parents role in encouraging and supporting children's effort in school (Mortimore, 1998).	6 Items

Appendix C: Description of constructs included in the educator questionnaire

Constructs	Description	Number of Items
Demographic information: educator	Background information	11 items
Demographic information: classes	Background information	7 items
Educator attitude towards achievement	The importance the educator attaches to learner achievement. Positive attitude of teacher towards achievement (Mortimore, 1998). The extent to which educators are achievement oriented, positive expectations of learner achievement (Sammons, 1999).	6 Items
Quality of instruction	The way the curricular priorities are set out, the choice and application of methods and textbooks, opportunities provided for learning and the satisfaction with the curriculum (Scheerens & Bosker, 1997).	21 items
Curriculum 2005 (refers to the national curriculum document of South Africa)	A curriculum framework that comprises of a set of principles and guidelines which provides both a philosophical base and an organisational structure for curriculum development initiatives at all levels, be they nationally, provincially, community or school-based. Framework which is based on the principles of co-operation, critical thinking and social responsibly, and should empower individuals to participate in all aspects of society (Curriculum 2005, lifelong learning for the 21st century). Decisions about what the curricula should be, cooperative planning. Collective and intentional process or activity directed at beneficial curriculum change (Marsh & Willis, 2003). Quality of school curricula (Bosker & Visscher, 1999).	6 items
Assessment practices	Assessment is the process of gathering information (Gay & Airasian, 2003). The	27 items

Constructs	Description	Number of Items
	approach towards assessment is the assessment strategies as advocated by the school as stipulated in an assessment policy. Type of assessment strategies educators use within the classroom	
Opportunities to learn	Amount of time allowed for learning (Scheerens, 1997). How far what is being tested has been taught during lessons (Scheerens, 1992).	6 Items
Challenges	Difficulties educators encounter	7 Items
Instructional methods	Method of instruction used and how effective the method is perceived. Structured instruction as represented by preparation of lessons, structure of lessons, direct instruction and monitoring (Scheerens & Bosker, 1997).	25 Items
Feedback and reinforcement	Opportunity to receive comment (feedback) on work done that is clearly understood, that is timely and of use in the learning situation. Positive reinforcement in which there is clear, fair discipline and feedback (Sammons, 1999). Quantity and quality of homework as well as good teacher feedback (Sammons, 1999).	25 Items
Resources	Resources available to the school in order to facilitate carrying out educational objectives (Sammons, 1999).	13 Items
Professional development	Motivation to improve practice, vocational training undertaken. A good vocational training encouraged for the further development of staff (Sammons, 1999) as articulated by in-service training opportunities, updating policies and introduction of new programmes (Taggart & Sammons, 1999)	14 Items
School climate	An orderly atmosphere in which there are rules and	12 Items

Constructs	Description	Number of Items
	regulations, punishment as well as rewards, where absenteeism and dropout is monitored and the behaviour and conduct of learners is taken into account. Internal relationships are also highlighted here in terms of priorities, perceptions and relationships between the various parties in the school, appraisal of roles and tasks and finally the facilities and buildings (Scheerens & Bosker, 1997). Teacher collaboration: Related to school climate, types and frequency of meetings and consultations, contents and extant of cooperation and the satisfaction levels associated with it, the importance attributed to cooperation and the various indicators of successful cooperation (Scheerens & Bosker, 1997)	
Monitoring at classroom-level	Monitoring of learner progress, making use of monitoring systems (Scheerens & Bosker, 1997). Well established mechanisms for monitoring the performance and progress of learners, classes and the school as a whole, can be formal or informal in nature. Provides a mechanism for determining whether goals are met, focuses staff and learners on these goals, informs planning, teaching and assessment, gives a clear message of that the educator and school are interested in progress (Sammons, 1999)	10 items

Appendix D: Description of the constructs in the principal questionnaire

Construct	Description	Number of Items
Demographics: principal	Background information	10 items
Demographics: school	Background information	9 items
School attitude towards achievement	Official documents expressing an achievement oriented emphasis (Scheerens, 1990), which provides a clear focus for the mastering of basic subjects, stipulates high expectations at school and educators level and offers records of learner achievement (Scheerens & Bosker, 1997)	7 items
School climate	An orderly atmosphere in which there are rules and regulations, punishment as well as rewards, where absenteeism and dropout is monitored and the behaviour and conduct of learners is taken into account. Internal relationships are also highlighted here in terms of priorities, perceptions and relationships between the various parties in the school, appraisal of roles and tasks and finally the facilities and buildings (Scheerens & Bosker, 1997)	26 items
Approach towards assessment	Assessment is the process of gathering information (Gay & Airasian, 2003). The approach towards assessment is the assessment strategies as advocated by the school as stipulated in an assessment policy.	18 items
Curriculum development and design	Decisions about what the curricula should be, cooperative planning. Collective and intentional process or activity directed at beneficial curriculum change (Marsh & Willis, 2003). Quality of school curricula (Bosker & Visscher, 1999).	2 items

Construct	Description	Number of Items
Leadership	A leader who is actively involved in the development and monitoring of educational activities (Scheerens, 1990). Makes provision for general leadership skills and characterises the school principal as an information provider, coordinator, meta-controller of classroom processes, of instigating participatory decision making and is seen as an initiator and facilitator of staff professional development (Scheerens & Bosker, 1997).	21 items
Intended educational policies	The policies that Government put in place for schools and educator to follow. Intended Curriculum is the desired curriculum-based on national objectives which educators are expected to teach and learners' learn. Government legislation on teaching goals and objectives (Bosker & Visscher, 1999).	3 items
Professional development/improving practice	A good vocational training encouraged for the further development of staff (Sammons, 1999) as articulated by in-service training opportunities, updating policies and introduction of new programmes (Taggart & Sammons, 1999).	26 items
Monitoring at school-level	Use of curriculum specific test, use of standardised achievement, monitoring systems in place to track students from one grade level to the next (Scheerens, 1990). Well established mechanisms for monitoring the performance and progress of learners, classes and the school as a whole, can be formal or informal in nature. Provides a mechanism for determining whether goals are met, focuses staff and learners on these goals, informs planning, teaching and assessment, gives a clear message of that the educator and school are	4 items

Construct	Description	Number of Items
	interested in progress (Sammons, 1999).	
Resources	Resources available to the school in order to facilitate carrying out educational objectives (Sammons, 1999).	14 items
Parental involvement	Parental involvement in school activities (Scheerens *et* al, 2003) as well as parents' role in encouraging and supporting children's effort in school (Mortimore, 1998).	2 items

Appendix E: Audit trail documents

Appendix F: Evaluation report guidelines

Content Validation Checklist

Question	Yes	No	Suggestions/Comments
Did the individual items match the indicators as listed in the domain?			
Were all the important rules for writing items followed?			
Did any of the items appear to have any biases either gender or racial?			
Were the instructions, layout and language clear and easy to follow?			

Appendix G: Summary of reports from the language and mathematics specialists

GENERAL COMMENTS:

- Very little language testing although following the instructions accurately in each section implies language proficiency. Language items (vocabulary and proofreading) are very difficult for ESL learners and even L1 speakers of that age.
- The tasks ought to be contextualised for young learners using language and situations familiar to them e.g. proof reading is not a common activity but correcting the mistakes in your friend's book may be.
- A fairly lengthy introductory explanation with several practice examples needs to be included in order for listeners to attune their ears before actually starting with the test.
- My past secondary school teaching experience makes me think that these various spatial tests are rather culture bound and would need to be piloted with a sample for the target audience i.e. African learners in rural and township schools. I doubt whether they will fare well in the first round, as they are not being taught as this test aims to establish. Some questions might be inaccessible for some second language speakers because of the language level (length and level of written language).
- Clear and well set out
- Thorough and easy to follow instructions
- Graphics are clear and will appeal to young learners
- Language is age appropriate
- There is no bias in the items of gender or race in the items
- 15% of the Mathematics questions is not in the Grade 7 (or previous) curriculum, of which all will be accessible to an average Grade 7 learner because of general knowledge and experience and problem solving strategies.
- Time is a big issue which might cause learners not to finish (or nearly finish) some sections, e.g. Cross-sections and Block counting.
- The following outcomes are covered:
    - **Language CO 1:** Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
    - **Language CO 5:** Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation.
    - **Language LO 5: Thinking and reasoning:** The Learner will be able to use language to think and reason, and access, process and use information for learning.
    - **Language LO 6: Language structure and use:** The learner is able to use the sounds, words and grammar of the language to create and interpret texts.
    - **Mathematics LO 1: Numbers, operations and relationships** is over represented
    - **Mathematics LO 5: Data handling** is not represented at all. Note: This is not necessarily bad, as long as it is according to the design of the test.

PAGE	TEST ITEMS	WHAT IS REQUIRED/BEING TESTED?	COMMENTS	RECOMMENDATION
Cover page	-	Biographical detail	• Request for information could be confusing e.g. your age in years (How old are you today?) Grade and class (learners do not necessarily understand that the grade and identifiable class code are two separate things. • Knowledge of how to answer multiple choice is assumed	• Simplify by turning each required field into a question e.g. What is your family name (surname)? Some cultures use the family name first so formulate the field for first name as What is the name by which your friends call you? (Or something similar) • Delineated well or write number of item next to instruction. Must be piloted with Grade 8 learners
1	Practice sheet	Learner orientation (Language questions)	• Tension between learner being addressed directly at times and then switch to third person • Spelling mistake • Add more context to first example • Lack of consistency with position of boxes is confusing • Lack of consistency in instructions regarding crosses • Lack of numbering for three questions confusing	• Consider using the active rather than the passive voice and addressing the learner directly in all cases. • Correct a to as • In the English alphabet, which letter follows immediately after B? • Place all answer boxes below options • Substitute “cross out” with “draw a cross in” • Number and separate questions as done in Maths section on page 2
2	Practice sheet	Learner orientation (Numeracy)	• Substitute low frequency words for more commonly used ones • Questions 1 & 2 instructions not clear • Question 3 could be	• Produce an answer = write an answer • Instructions need to be more specific and include action words related to mathematics. E.g.

PAGE	TEST ITEMS	WHAT IS REQUIRED/BEING TESTED?	COMMENTS	RECOMMENDATION
			answered literally ("It's a sum) • Statement about not finishing/having everything correct, although intended to encourage learners is confusing and patronising • Alignment of boxed instructions incorrect • Instructions to stop working are far too small	add, subtract, calculate • Delete *You are not expected to.... finish each section* • Correct capitalised T of *the next question* • Enlarge and centre instructions to stop working on all appropriate pages
3	Vocabulary	Instructions	• Ensure consistency of instructions • How was five minutes determined? By whom?	• Substitute "cross out" with "draw a cross in" • Extend time to at least ten minutes; isolated words without context need even more careful thinking
4	Vocabulary	Find matching synonym Items 1 - 16	• Three pages without instructions. Learners will need to turn back if they are unsure about what to do. • Items 5, 7, 9, 12 and 16 have very low frequency and culture bound words as options • Items 10 and 11 - options do not discriminate clearly; too vague or close • Item 14 - "Disastrous" can mean both "terrible" and "bad", they are really degrees of comparison. • Footnote instruction too small	• Include instructions at top of each page • Substitute • Substitute • Change "bad" to evil • Enlarge and centre instructions to go to next page
5	Vocabulary	Find matching synonym Items 17 – 32	• Items 17, 21, 25, 26 and 27 have very low frequency and culture bound words as options • Item 25 - Not even first language learners of this age	• Substitute • Suggest change hate to "goad"

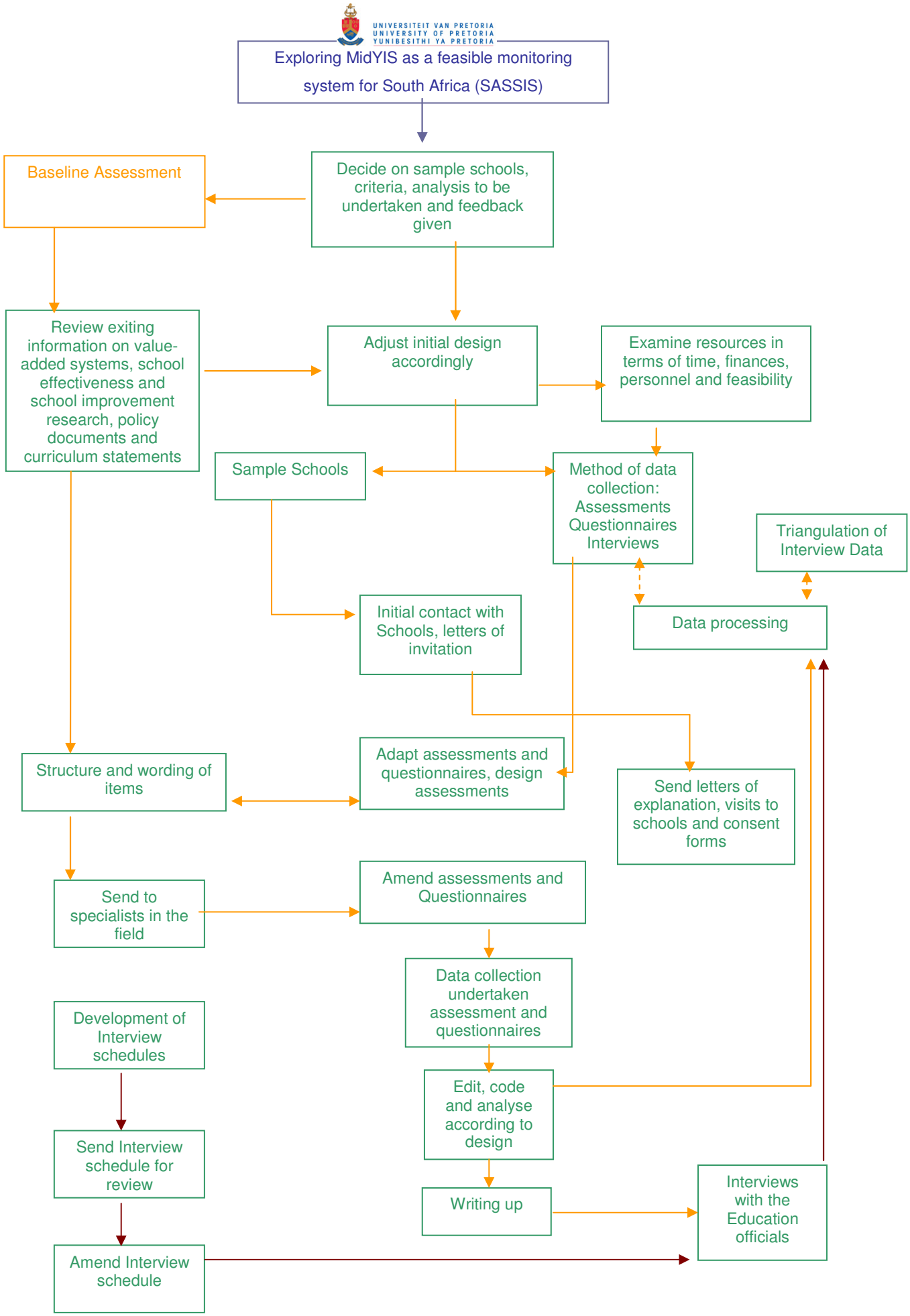
PAGE	TEST ITEMS	WHAT IS REQUIRED/BEING TESTED?	COMMENTS	RECOMMENDATION
			would know the word "Indolent". • Item – 30 "Grudge" can be both "hate" and "resent". • Item 31 – endure not closely related enough	
6	Vocabulary	Find matching synonym Items 33 - 40	• Item 33 • Items 37 and 40 have very low frequency and culture bound words as options • Item 38 – preceding and previous too difficult for Grade 8 ESL speakers	• Revisit options • "Irate" - it is more likely that second language learners would know this word as opposed to "indolent. It would be a discriminating question to identify very strong language candidates. • Substitute
7	Maths	Example	Instructions don't make sense; also no indication that mental arithmetic is required and thus no calculators permitted. Or are they?	Revisit and elaborate
8	Maths	Items 1 - 12	*Rough working here* is not an obvious instruction	Address learner directly e.g. Use this space to do your rough work in.
9	Maths	Items 13 - 20	-	-
10	Maths	Items 21 - 27	• Item 22 vegetarianism is not common in RSA • Item 23: 6 over 20 does not look like a fraction • Item 24: *discount* rather than *get off* • Item 25 – 27 *Find out* rather than *determine* • *Rough working here* is not an obvious instruction	• Substitute with a more common noun e.g. boys/girls • Type fractions as fractions e.g. ½ ¼ • Address learner directly e.g. Use this space to do your rough work in.
11	Maths	Telling the time	• Items 28 – 30 unlabelled answer boxes confusing	• Type capital letters A – E above each box
12	Maths	Shapes and sizes	• Full stop not required after 40 • Item 43 - Clarify question • Items 43 and 44: space for answers	• Delete full-stop after 40 • Substitute *is* with *make up* • Delete horizontal line

PAGE	TEST ITEMS	WHAT IS REQUIRED/BEING TESTED?	COMMENTS	RECOMMENDATION
			confusing	
13	Maths	Basic calculations	*Rough working here* is not an obvious instruction	Address learner directly e.g. Use this space to do your rough work in.
14	Maths	Fractions and co-ordinates	• Instructions confusing and too small	• Revisit – add statement to each item
15	Maths	Cogs	• Font size and style inconsistency; diagram also bigger than others elsewhere in test • Direction of arrow too short • Item 69: instructions are too small	• Adjust and align • Lengthen arrow • Place? directly after *turn*
16	Proof reading	Instructions	• How was five minutes determined? By whom? • Doubtful whether Grade 8's would know what the skill of proofreading entails. • Instructions and example not clear. The sample sentence does not make sense.	• Extend time to at least ten minutes; isolated words without context need even more careful thinking • Consider rephrasing or explaining • Elaborate on instructions to be more specific e.g. by adding ...l*ook for mistakes in each paragraph on the next page.* Rephrase sample sentence.
17	Proof reading	Topic: TV, Making bread, English	• Not an easy task!	• Repeat instructions before each paragraph
18	Proof reading	Master list and typed copy	• Master list and typed copy = jargon + low frequency • More context would give purpose to task	• Explain or rephrase • Contextualise task at Grade 8 level
19	Perceptual speed and accuracy	Instructions	• How was two minutes determined? By whom? • *Left-hand box* not clear, does not look like answer boxes. • Shaded blocks next to heading EXAMPLE also confusing • Ensure consistency	• Extend time to at least five minutes; • Rather shade left-hand box and call it as such • Remove • Change instructions to *Draw a cross in*

PAGE	TEST ITEMS	WHAT IS REQUIRED/BEING TESTED?	COMMENTS	RECOMMENDATION
			of instructions	
21	Perceptual speed and accuracy	Items 15 - 26	• Incorrect spacing after item 24 • Seems to be a pattern of more first and last options than others	• Delete extra space • Revisit
22	Cross-sections	Instructions and example	• Instructions not clear enough • Time probably also insufficient	• Clarify by adding *If you cut and apple **in half …*** I also suggest numbering the 3 steps and deleting the oval shape on each apple • Add a comma after *On the following page, …*
23	Cross-sections	Items 1 -16	-	-
24	Block counting	Instructions and example	• There is a fair chance that the word *box* (a 1-dimensional white space surrounded by 4 black lines) could be confused with block (3-D as shown in picture). • Time probably also insufficient	• Consider using word *cubes* or some explanation to avoid the learner counting the flat surfaces of the cube as blocks too.
25	Block counting	Items 1 - 6	-	-
26		Instructions Items 7 -10	• Clumsy and confusing.	• Rephrase, simplify and rearrange order of sentences.
27	Pictures	Instructions and example	• Task calls for some very abstract thinking probably foreign to most learners	• Substitute *see-through* with *transparent, picture* with *shape, moved directly on top of* with *shifted over* or *placed over.* Or number the frames
28	Adding pictures	Example and Items 1 –6	• Instructions and example repeated but example resembles actual test items more closely.	• Consider using both examples on previous page or substituting “black dots” one
29	Subtracting pictures	Example and Items 7-12	• Is subtracting the appropriate word?	• Consider *remove*

PAGE	TEST ITEMS	WHAT IS REQUIRED/BEING TESTED?	COMMENTS	RECOMMENDATION
30	Picture sequences	Example and Items 13-18	• Instructions seem to be squashed in	• Enlarge font of instructions in order to make it more readable.

Appendix H: Diagramatic representation of the research procedures undertaken


UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Exploring MidYIS as a feasible monitoring system for South Africa (SASSIS)
Baseline Assessment
Decide on sample schools, criteria, analysis to be undertaken and feedback given
Review exiting information on value-added systems, school effectiveness and school improvement research, policy documents and curriculum statements
Adjust initial design accordingly
Examine resources in terms of time, finances, personnel and feasibility
Sample Schools
Method of data collection: Assessments Questionnaires Interviews
Triangulation of Interview Data
Data processing
Initial contact with Schools, letters of invitation
Structure and wording of items
Adapt assessments and questionnaires, design assessments
Send letters of explanation, visits to schools and consent forms
Send to specialists in the field
Amend assessments and Questionnaires
Data collection undertaken assessment and questionnaires
Development of Interview schedules
Edit, code and analyse according to design
Send Interview schedule for review
Writing up
Interviews with the Education officials
Amend Interview schedule

Appendix I: Letters of consent

I. 1: Letter to Department of Eduaction officials

Dear <Official>

Through this letter I am requesting that you kindly fill in a short questionnaire about the implementation of the OBE curriculum in schools as a contribution to my research.

My name is Vanessa Scherman and I am a Lecturer/Researcher at the Centre for Evaluation and Assessment at the University of Pretoria, Faculty of Education. The Centre for Evaluation and Assessment (CEA) is currently involved in a research project, which is funded by the National Research Foundation. The research is being conducted in collaboration with the Curriculum, Evaluation and Management (CEM) Centre at the University of Durham, England.

The aims of the project are:
1. to investigate appropriate assessment methods that may assist schools, educators and communities to ascertain the "real" contribution of the school to an individual learner's learning taking into account the background of the learner (the so-called value added approach).
2. to develop appropriate value-added assessment measures specifically for South African primary and secondary schools.
3. to develop appropriate ways to report the results of these assessment methods in a comprehensible and useful way for schools.

This research project consists of two components namely on a primary school-level and on a secondary school-level. I am responsible for the secondary school component. In brief, the value-added assessment measures evaluates the contribution or value that schools add to their learners' learning in any given school by considering the background of the learner. Value-added measures provide the school with a starting point for monitoring learners' performance taking into account the intake factors which are largely outside the control of the school, but which may have a considerable impact on the learners' performance.

Value-added measures have been designed and developed for primary school and secondary school and the CEA has been working on contextualising the instruments, which were originally developed in England, to the South African context. An important part of the research is to ascertain curriculum validity, specifically for languages and mathematics, and you are requested to contribute to that part by responding to the questionnaire attached.

It is for this reason that I am contacting you and kindly request that you complete the attached questionnaire as your knowledge in the fields of assessment and curriculum will add a great deal to

this project. The questionnaire should take approximately 15 minutes to complete and once completed can be emailed back to me.

Thanking you in advance,
Kind regards,

I. 2: Letter to the principals of participating schools

Dear <Principal's Name>,

RE: National Research Foundation Value Added Project

Dear <Principal's Name>,

The Centre for Evaluation and Assessment (CEA) at the University of Pretoria has embarked on an international project namely the NRF Value-Added project. For the first year of the project we chose three primary schools and three secondary schools in Gauteng to participate in this project in order to contextualise the instruments for our context. Since then we have increased our sample to seven primary schools and eleven secondary schools. However, we would like to increase the number of schools. Your school has been selected to participate in this project and we would greatly appreciate it if you would be willing to participate in the project next year. As per regulations we have approached the Provincial Government for permission to conduct research in schools and permission has been granted.

The aims of the project are to:

1. Investigate appropriate assessment methods that may assist schools, educators and communities to ascertain the "real" contribution of the school to an individual learner's learning (the so-called value added approach) taking into account the background of the learner.
2. To develop appropriate value-added assessment measures specifically for South African Primary and Secondary schools.
3. To develop appropriate ways to report the results of these assessment methods in a comprehensible and useful way for schools.

The CEA is working with the Curriculum, Evaluation and Management (CEM) Centre at the University of Durham, England, which developed a value-added approach that is currently running in more than 5 000 schools in England, and nearly 1 000 schools in New Zealand and Australia. In brief, the value-added assessment measures and evaluates the contribution or value that schools add to their learners' learning by considering the background of the learner (their parent's educational background and resources in the home for example). Value-added measures provide the school with a starting point for evaluating performance taking into account the intake factors which are largely outside the control of the school, but which may have a considerable impact on the learner's performance.

Value-added measures have been designed and developed for primary school and secondary school and the CEA would like to pilot the assessments developed for primary school and secondary school,

which have been translated and/or contextualised for South African schools. The Secondary school component is called SASSIS (South African Secondary School Information System).

The participation of your school, principal, educators and learners is crucial to realise the project. Therefore we sincerely hope that your school will be interested in participating collaboratively with the CEA and CEM this year. Furthermore, principals and educators of participating schools will be invited to a seminar where we will share more about the value-added approach and some preliminary results.

Ultimately, the intention is to implement the project in 250 schools across the country within the next two years.

Kind Regards,

I. 3: Letter to Parents

To Whom It May Concern:

RE: Permission to assess your child

Dear Parent/Guardian,

The Centre for Evaluation and Assessment (CEA) at the University of Pretoria has embarked on an international research project namely the NRF Value-Added project in 2003. For the last four years the CEA has been working with schools in Gauteng and have been granted permission to conduct research in schools by the Gauteng Department of Education. We would like to ask your permission to include your child in this exciting study. We have included a brief description of this study for your convenience.

The value-added assessment **(MidYIS/SASSIS Baseline Assessment)** measures and evaluates the contribution or value that schools add to their learner's learning in any given school by considering the background of the learner. Value added measures provide the school with a starting point for evaluating performance taking into account the intake factors (for instance, the socio-economic status) which are largely outside the control of the school, but which may have a considerable impact on the learner's performance.

Such an assessment could provide the school and parent with invaluable information for every learner. By carrying out these assessments, the teacher will have a good idea about the strengths and weaknesses of each learner. Therefore particular weaknesses can be strengthened and built on. The results of the assessment will be given to parents, with the cooperation of the school.

The participation of the school, principal, educator and learner plays a crucial role in being able to realise the project. Therefore, we sincerely hope that you will be interested in participating collaboratively with the CEA in undertaking this new approach to assessment for schools. However, one important aspect is that of parental consent. Parents need to grant permission and this is required from each learner.

The information (data) that is gained from the assessment will be used for research purposes of the CEA; however, *all information* will be kept confidential. Kindly fill in the ***Permission form*** attached herewith and return the form to the teacher involved.

Yours sincerely,

PERMISSION FORM

I do hereby grant permission for my child to participate in the MidYIS/SASSIS project.

Parent/guardian's name _____

Child's name _____

Grade_____

Teacher's name_____

Parent/guardian's signature _____

Date _____

Appendix J: Assessment framework for mathematics

Item no.	Mathematics Learning Outcome	AS*	Grade level	Accessibility with regard to the Grade level. (Grade 7 (end) and/or Grade 8 (beginning))				Accessibility with regard to the RNCS (Curriculum).		Cognitive level appropriate for Grade 7 (end), Grade 8 (beginning) level.			Remarks
				Very easy	Easy	Moderate	Difficult	Not covered in Gr. 7 and/or previous grades, AND		Knowledge	Comprehen-sion	Application/Problem Solving	
								Possible	NOT Possible				
1	Numbers, Op. & Rel.	8	1	X				N/A		X			
2	Numbers, Op. & Rel.	8	1	X				N/A		X			
3	Numbers, Op. & Rel.	9	2	X				N/A		X			
4	Numbers, Op. & Rel.	9	2	X				N/A		X			
5	Numbers, Op. & Rel.	8	4	X				N/A		X			
6	Numbers, Op. & Rel.	8	1	X				N/A		X			
7	Numbers, Op. & Rel.	9	2	X				N/A		X			
8	Numbers, Op. & Rel.	9	2	X				N/A		X			
9	Numbers, Op. & Rel.	4	1	X				N/A		X			
10	Numbers, Op. & Rel.	4	6	X				N/A		X			
11	Numbers, Op. & Rel.	5	6	X				N/A		X			
12	Numbers, Op. & Rel.	5	6	X				N/A		X			
13	Numbers, Op. & Rel.	3	6	X				N/A		X			
14	Numbers, Op. & Rel.	4	6	X				N/A		X			
15	Numbers, Op. & Rel.	3	6	X				N/A		X			
16	Numbers, Op. & Rel.	3	4	X				N/A		X			
17	Space and Shape (Geo.)	1	4	X				N/A		X			
18	Space and Shape (Geo.)	1	4	X				N/A		X			
19	Space and Shape (Geo.)	2	5	X				N/A		X			
20	Space and Shape (Geo.)	1	5	X				N/A		X			
21	Numbers, Op. & Rel.	4	7			X		N/A			X		Language
22	Numbers, Op. & Rel.	4	7			X		N/A			X		Language
23	Numbers, Op. & Rel.	4	7			X		N/A			X		
24	Numbers, Op. & Rel.	4	7			X		N/A			X		
25	Pat, Functions & Alg.	5	8			X		N/A			X		
26	Pat, Functions & Alg.	5	8				X	N/A			X		

Item no.	Mathematics Learning Outcome	AS*	Grade level	Accessibility with regard to the Grade level. (Grade 7 (end) and/or Grade 8 (beginning))				Accessibility with regard to the RNCS (Curriculum).		Cognitive level appropriate for Grade 7 (end), Grade 8 (beginning) level.			Remarks
				Very easy	Easy	Moderate	Difficult	Not covered in Gr. 7 and/or previous grades, AND		Knowledge	Comprehen-sion	Application/Problem Solving	
								Possible	NOT Possible				
27	Pat, Functions & Alg.	5	8			X		N/A			X		
28	Measurement	1	3	X				N/A		X			
29	Measurement	1	4		X			N/A		X			
30	Measurement	1	4		X			N/A		X			
31	Pat, Functions & Alg.	1	5	X				N/A		X			
32	Pat, Functions & Alg.	1	5		X			N/A			X		
33	Pat, Functions & Alg.	1	6		X			N/A			X		
34	Pat, Functions & Alg.	1	4		X			N/A			X		
35	Pat, Functions & Alg.	1	6			X		N/A			X		Question Changed
36	Pat, Functions & Alg.	1	7			X		N/A			X		
37	Pat, Functions & Alg.	1	7			X		N/A			X		
38	Pat, Functions & Alg.	1	7				X	N/A			X		
39	Pat, Functions & Alg.	1	7			X		N/A			X		
40	Measurement	8	6		X			N/A			X		
41	Measurement	2	7			X		N/A			X		
42	Measurement	11	6			X		N/A			X		
43	Numbers, Op. & Rel.	4	7			X		N/A			X		
44	Numbers, Op. & Rel.	4	7	X				N/A			X		
45	Numbers, Op. & Rel.	9	2	X				N/A		X			
46	Numbers, Op. & Rel.	9	2	X				N/A		X			
47	Numbers, Op. & Rel.	9	2	X				N/A		X			
48	Numbers, Op. & Rel.	9	3	X				N/A		X			
49	Numbers, Op. & Rel.	8	3	X				N/A		X			

Item no.	Mathematics Learning Outcome	AS*	Grade level	Accessibility with regard to the Grade level. (Grade 7 (end) and/or Grade 8 (beginning))				Accessibility with regard to the RNCS (Curriculum).		Cognitive level appropriate for Grade 7 (end), Grade 8 (beginning) level.			Remarks
				Very easy	Easy	Moderate	Difficult	Not covered in Gr. 7 and/or previous grades, AND		Knowledge	Comprehen-sion	Application/Problem Solving	
								Possible	NOT Possible				
50	Numbers, Op. & Rel.	8	3	X				N/A		X			
51	Numbers, Op. & Rel.	9	3	X				N/A		X			
52	Numbers, Op. & Rel.	9	3	X				N/A		X			
53	Numbers, Op. & Rel.	8	4	X				N/A		X			
54	Numbers, Op. & Rel.	8	3	X				N/A		X			
55	Numbers, Op. & Rel.	8	4	X				N/A		X			
56	Numbers, Op. & Rel.	8	4	X				N/A		X			
57	Pat, Functions & Alg.	5	8			X		N/A			X		
58	Pat, Functions & Alg.	5	8			X		N/A			X		
59	Pat, Functions & Alg.	5	8				X	N/A			X		
60	Pat, Functions & Alg.	5	8				X	N/A			X		
61	Numbers, Op. & Rel.	7	7			X		N/A			X		
62	Numbers, Op. & Rel.	7	7			X		N/A			X		
63	Numbers, Op. & Rel.	7	7			X		N/A			X		
64	Pat, Functions & Alg.	5	8				X	X			X		
65	Pat, Functions & Alg.	5	8				X	X			X		
66	Pat, Functions & Alg.	5	8				X	X			X		
67	Numbers, Op. & Rel.	6	7			X		X			X		
68	Numbers, Op. & Rel.	6	7				X	X				X	
69	Numbers, Op. & Rel.	6	7			X		X				X	
70	Numbers, Op. & Rel.	6	7				X	X				X	
71	Numbers, Op. & Rel.	6	7				X	X				X	
72	Numbers, Op. & Rel.	6	7				X	X				X	
73	Numbers, Op. & Rel.	6	7				X	X				X	
74	Numbers, Op. & Rel.	6	7				X	X				X	

Perceptual Speed & Accuracy

Item no.	Mathematics Learning Outcome	AS	Grade level	Accessibility with regard to the Grade level. (Grade 7 (end) and/or Grade 8 (beginning))				Accessibility with regard to the RNCS (Curriculum).		Cognitive level appropriate for Grade 7 (end), Grade 8 (beginning) level.			Remarks
				Very easy	Easy	Moderate	Difficult	Not covered in Gr. 7 and/or previous grades, AND		Knowledge	Comprehen-sion	Application/Problem Solving	
								Possible	NOT Possible				
All 1 - 26	Pat, Functions & Alg.	1	4	X				X			X		

Cross-sections

Item no.	Mathematics Learning Outcome	AS	Grade level	Accessibility with regard to the Grade level. (Grade 7 (end) and/or Grade 8 (beginning))				Accessibility with regard to the RNCS (Curriculum).		Cognitive level appropriate for Grade 7 (end), Grade 8 (beginning) level.			Remarks
				Very easy	Easy	Moderate	Difficult	Not covered in Gr. 7 and/or previous grades, AND		Knowledge	Comprehen-sion	Application/Problem Solving	
								Possible	NOT Possible				
All 1 - 8	Space and Shape (Geo.)	7	7				X	X				X	Not enough time

Block counting

Item no.	Mathematics Learning Outcome	AS	Grade level	Accessibility with regard to the Grade level. (Grade 7 (end) and/or Grade 8 (beginning))				Accessibility with regard to the RNCS (Curriculum).		Cognitive level appropriate for Grade 7 (end), Grade 8 (beginning) level.			Remarks
				Very easy	Easy	Moderate	Difficult	Not covered in Gr. 7 and/or previous grades, AND		Knowledge	Comprehen-sion	Application/Problem Solving	
								Possible	NOT Possible				
1 – 3 5 – 6	Space and Shape (Geo.)	7	7			X		X				X	Not enough time
4, & 7 - 10	Space and Shape (Geo.)	7	7				X	X				X	Not enough time

Pictures

Item no.	Mathematics Learning Outcome	AS	Grade level	Accessibility with regard to the Grade level. (Grade 7 (end) and/or Grade 8 (beginning))				Accessibility with regard to the RNCS (Curriculum).		Cognitive level appropriate for Grade 7 (end), Grade 8 (beginning) level.			Remarks
				Very easy	Easy	Moderate	Difficult	Not covered in Gr. 7 and/or previous grades, AND		Knowledge	Comprehen-sion	Application/Problem Solving	
								Possible	NOT Possible				
	Adding Pictures												
1, 2, 4 & 5	Space and Shape (Geo.)	5	7			X		X			X		Not enough time
3 & 6	Space and Shape (Geo.)	5	7				X	X				X	Not enough time
	Subtracting Pictures												
7 – 12	Space and Shape (Geo.)	5	7			X		X			X		Not enough time
	Picture Sequences												
13 – 18	Pat, Functions & Alg.	1	7			X		X			X		Not enough time

Appendix K: Complete list of ability factors

Ability	Definition of the ability	Assessment in which ability is found
Verbal ability, verbal comprehension and verbal relations	Denotes the understanding of words (Kline, 2000) as measured by tests of vocabulary and reading comprehension (Sternberg, 1985), using words in context such as understanding proverbs, verbal analogies and vocabulary (Cooper, 1999).	General Scholastic Aptitude Test Battery (GSAT) Senior South African Individual Scale (SSAIS) South African Wechsler Adult Intelligence Scale (WAIS) Junior Aptitude Test (JAT) Senior Aptitude Test (SAT) Washington-Pre-College Test Battery Wechsler Intelligence Scale for Children (WISC) Differential Aptitude Test (DAT)
Grammar or language usage	Measured by means of identifying poor grammar and correcting errors (Hunt, 1985).	Washington-Pre-College Test Battery Differential Aptitude Test (DAT)
Spelling	Denotes the recognition of misspelled words (Kline, 1993).	Differential Aptitude Test (DAT)
Numerical ability	Facility in the manipulation of numbers but does not include arithmetic reasoning (Kline, 2000).	General Scholastic Aptitude Test Battery (GSAT) Senior South African Individual Scale (SSAIS) Junior Aptitude Test (JAT) Differential Aptitude Test (DAT)
Numerical facility	Denotes the ability to use algebra and other forms of mathematical operation (Cooper, 1999).	South African Wechsler Adult Intelligence Scale (WAIS) Junior Aptitude Test (JAT) Senior Aptitude Test (SAT) Washington-Pre-College Test Battery Wechsler Intelligence Scale for Children (WISC) Differential Aptitude Test (DAT)
Spatial ability	Ability to recognise figures in different orientations (Sternberg, 1985; Kline, 2000).	Junior Aptitude Test (JAT) Senior Aptitude Test (SAT)

Ability	Definition of the ability	Assessment in which ability is found
		Washington-Pre-College Test Battery Differential Aptitude Test (DAT)
Perceptual speed and accuracy	Denotes the ability to rapidly assess difference between stimuli (Kline, 2000) and measured by the rapid recognition of symbols (Sternberg, 1985).	Junior Aptitude Test Senior Aptitude Test Wechsler Intelligence Scale for Children (WISC) Differential Aptitude Test (DAT)
Speed of closure	The ability to complete a pattern with a part missing (Kline, 2000).	General Scholastic Aptitude Test Battery (GSAT) Senior South African Individual Scale (SSAIS) South African Wechsler Adult Intelligence Scale (WAIS) Wechsler Intelligence Scale for Children (WISC)
Inductive reasoning	Denotes the ability to find rules given examples (Cooper, 1999), involves the process of induction which is reasoning from the specific to the general (Kline, 1993).	Differential Aptitude Test (DAT)
Rote memory or memory span	Denotes the ability to memorise unlinked stimuli (Kline, 2000) measured by recalling words or sentences (Sternberg, 1985).	Senior South African Individual Scale (SSAIS) South African Wechsler Adult Intelligence Scale (WAIS) Junior Aptitude Test (JAT) Senior Aptitude Test (JAT) Wechsler Intelligence Scale for Children (WISC)
Aesthetic judgement	Denotes the ability to detect good principles of art (Kline, 2000).	
Meaningful memory	Denotes the ability to learn links between related stimuli (Kline, 2000) measured by the recalling	South African Wechsler Adult Intelligence Scale (WAIS)

Ability	Definition of the ability	Assessment in which ability is found
	pair-associates such as names with pictures of people (Sternberg, 1985).	Junior Aptitude Test (JAT) Senior Aptitude Test (SAT)
Originality of ideational flexibility	Denotes the ability to generate different and original ideas (Kline, 2000).	
Ideational fluency	Denotes the ability to rapidly develop idea on topic (Kline, 2000).	
Word or verbal fluency	Denotes the ability to produce words from letters (Sternberg, 1985; Kline, 2000).	
Originality	Denotes the ability to combine two objects into one functional object (Kline, 2000).	
Aiming	Denotes hand-eye coordination (Kline, 2000).	
Auditory ability	Denotes the ability to differentiate and remember a sequence of tones (Kline, 2000).	
Representational drawing	Denotes the ability to draw a stimulus object which is scores for precision (Kline, 1993).	
Block Design	Denotes the ability to replicate patterns by using blocks (Kline, 2000).	Senior South African Individual Scale (SSAIS) South African Wechsler Adult Intelligence Scale (WAIS) Wechsler Intelligence Scale for Children (WISC)

Appendix L: Rasch and correlation analyses

Appendix M: Multilevel analyses

Effects	Null model		Model 5		Model 9		Model 12	
	Coefficient	*Standard error*	*Coefficient*	*Standard error*	*Coefficient*	*Standard error*	*Coefficient*	*Standard error*
Fixed effects								
Intercept	***47.995***	***3.429***	***37.203***	***3.879***	***45.174***	***4.082***	***45.951***	***4.432***
Learner-level								
Learesoho			0.104	0.174	-	-	-	-
Lealive			-1.366	0.380	-1.339	0.380	-1.386	0.380
Leamoted			0.986	0.436	1.182	0.342	1.174	0.343
Leafated			0.253	0.433	-	-	-	-
Leamaimp			1.511	0.353	1.494	0.352	1.486	0.380
Leaengimp			1.172	0.380	1.158	0.379	1.202	0.380
Classroom-level								
Chalinservm					-1.847	2.398	-	-
Resoum					-0.133	0.256	-	-
Teaattm					0.141	0.235	-	-
Chalinserve					-	-	-2.262	1.832
Resoue					-	-	-0.064	0.306
Teaatte					-	-	-0338	0.547
School-level								
Prinencexc								
Prinemach								
Prinedmon								
Random effects								
σ_e^2	129.120	6.664	119.147	6.150	119.222	6.153	119.222	6.154
σ_{u0}^2	11.997	6.752	8.741	5.219	6.721	4.366	14.205	7.561
σ_{v0}^2	121.412	55.146	78.274	36.002	63.327	29.186	40.516	21.339
Deviance	***6013.450***		***5945.567***		***5941.737***		***5944.246***	

Effects	Null model		Model 14		Model 15	
	Coefficient	*Standard error*	*Coefficient*	*Standard error*	*Coefficient*	*Standard error*
Fixed effects						
Intercept	***47.995***	***3.429***	***86.171***	***14.601***	***87.714***	***16.736***
Learner-level						
Learesoho			-	-	-	-
Lealive			-1.357	0.380	-1.321	0.379
Leamoted			1.210	0.341	1.197	0.341
Leafated			-	-	-	-
Leamaimp			1.485	0.353	1.480	0.352
Leaengimp			1.130	0.381	1.116	0.379
Classroom-level						
Chalinservm			-3.247	1.321	-3.325	1.188
Resoum			-	-	-	-
Teaattm			-	-	-	-
Chalinserve			-1.725	1.142	-	-
Resoue			-	-	-	-
Teaatte			-	-	-	-
School-level						
Prinencexc			-13.980	4.627	-16.877	4.956
Prinemach			-3.550	2.103	-2.338	-2.315
Prinedmon			7.612	2.031	8.433	2.306
Random effects						
σ_e^2	129.120	6.664	119.172	6.151	119.156	6.150
σ_{u0}^2	11.997	6.752	12.873	6.976	9.187	5.416
σ_{v0}^2	121.412	55.146	4.716	6.480	11.645	8.112
Deviance	***6013.450***		***5928.297***		***5929.021***	

Appendix N: Ethical clearance and language editing

N.1: Clearance certificate

ANNEXURE D

UNIVERSITY OF PRETORIA

FACULTY OF EDUCATION

RESEARCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE	**CLEARANCE NUMBER :** CS06/10/11
DEGREE AND PROJECT	PhD Assessment and Quality Assurance The validity of value-added measures in secondary schools
INVESTIGATOR(S)	Vanessa Scherman
DEPARTMENT	Curriculum Studies
DATE CONSIDERED	25 August 2004
DECISION OF THE COMMITTEE	APPROVED

This ethical clearance is valid for 3 *years from the date of consideration and may be renewed upon application*

CHAIRPERSON OF ETHICS COMMITTEE	Dr S Human-Vogel
DATE	31 October 2006
CC	Prof S Howie Mrs Jeannie Beukes

This ethical clearance certificate is issued subject to the following conditions:

1. A signed personal declaration of responsibility
2. If the research question changes significantly so as to alter the nature of the study, a new application for ethical clearance must be submitted
3. It remains the applicant's responsibility to ensure that all the necessary forms for informed consent are kept for future queries.

Please quote the clearance number in all enquiries.

N.2: Language editing

It is hereby certified that the final draft of the PhD thesis "The validity of value-added assessments" by Vanessa Scherman, has been edited and proof read by me.

PHS van der Merwe