

Consolidated Post-Exam
Analysis Report 2014
Content Subjects - DBE

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Structure of the Report

This report provides an overview of the results of the post-examination analysis project. This project is run in order to provide qualitative feedback to Umalusi's Assessment Standards Committee on the structure and quality of the National Senior Certificate final examinations. The process is one of the strands of results standardisation, and is also intended as a lever for improvement of the examinations year on year.

This report is divided into two sections. Section 1 provides the background information that informed the post-examination analysis project, and defines the terms that are used. It concludes with an overview of the methodology employed in the project.

Section two provides the reports generated by the post-examination analysis teams that detail their findings. The subject reports are presented consecutively in alphabetical order.

Section 1: Background

In carrying out its mandate to set and monitor educational standards in the General and Further Education sector in South Africa, Umalusi must ensure that assessments of those qualifications that are registered in its sub-framework are of a satisfactory standard. To operationalize that, Umalusi performs quality assurance that supports the enhancement of the standard of instruments used to assess candidates in the sector. This includes, amongst others, evaluation and analysis of examinations as a means of setting standards within the education system. It is through such process that Umalusi is able to determine whether or not the results of its quality assured examination remain a valid predictor of performance and to develop an informed understanding of the cognitive demand, and more recently item difficulty, of the examinations associated with its qualifications.

The framework for working with item difficulty is intended to support all key role players in making complex decisions about what makes a particular question or item easy, difficult or moderately challenging for Grade 12 examination candidates. In other words, the framework is intended to address concerns about whether the examinations in question are defensibly adequate instruments.

To differentiate a large number of examination candidates into graded categories, examination results need to show a wide spread of marks rather than a skewed mark distribution. To accomplish this goal, examiners need to vary the difficulty of examination questions or tasks, and ensure that there are sufficient easy, moderate, and difficult questions that allow for high ability candidates to be discriminated from other candidates of lower ability. If all students achieve an A or B grade in an examination, results could be interpreted as reflecting high ability or proficiency on the part of all candidates. As it is highly unlikely that all candidates are 'above average', such results are more commonly an indication that the examination did not measure the entire range of levels of difficulty. Correspondingly, a high failure rate could be interpreted as reflecting low ability on the part of most candidates. As candidates usually possess a range of abilities, especially as the sample size

increases, a high failure rate likely indicates that the examination contained too many difficult questions.

It is important that a range of cognitive demands are made on students in Grade 12 examinations, and that examination papers are not only characterised by questions that require reproduction of information and replication of basic procedures. Questions that assess higher order processes, such as analysis, are *usually* more difficult than questions that assess lower order processes, such as recognition and factual recall (simple memory questions), hence higher level cognitive demands should not be under-represented in papers.

However, other factors besides the type of cognitive demand affect the level of difficulty of examination questions for Grade 12 students. We know this because questions that align to a particular type of cognitive demand are not always as difficult as other questions that align to the same cognitive demand. For example:

- a recall question that asks students to recall an abstract theory, or complex content is often much more difficult to accomplish than one which asks candidates to recall a simple fact (i.e. differences in content difficulty).
- a question that requires recalling an ordered sequence of events and which entails writing a few sentences is generally easier than one which involves the same type of cognitive demand but entails writing a whole essay (i.e. differences in 'writing difficulty').
- literal comprehension of source material comprising a simple contemporary magazine article is generally easier than literal comprehension of a classical work such as one of Shakespeare's dramas because of differences in the content, vocabulary, sentence and organisational structure, register, diction, literary techniques, abstractness of ideas and imagery, and background knowledge required (i.e. differences in 'reading difficulty').

We also know that a particular evaluation question may be more difficult for a typical Grade 12 student than for a university graduate. A question requiring inferential reasoning may be far more difficult for the average Grade 6 student than for the average Grade 12 student. With this in mind, Umalusi has developed the below framework for thinking about question difficulty.

Levels of difficulty of examination questions

This question is assessed as:			
1	2	3	4
Easy for the ideal average Grade 12 student to answer.	Moderately challenging for the ideal average Grade 12 student to answer.	Difficult for the ideal average Grade 12 student to answer.	Very difficult for the ideal average Grade 12 student to answer. The skills and knowledge required to answer the

			question allows for A-grade students (extremely high-achieving/ability students) to be discriminated from other high ability/proficiency students.
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The *ideal* average learner is an intellectual construct that does not represent any individual South African learner. Rather it is envisioned as a learner that has received adequate tuition from a qualified teacher, has been taught the entire curriculum, and is of average intelligence. Essentially this construct is one that Umalusi uses to set the standard at which we understand appropriate examination difficulty – without reference to learners in any measured or aggregate sense.

Umalusi evaluators are tasked with using the above categories of question difficulties after using the framework for thinking about question difficulty below to inform their judgements. The four-category framework **for thinking about question or item difficulty** in the table that follows is adapted from Leong (2006) and comprises the following four general categories of difficulty:

1. Content (subject/concept) difficulty;
2. Stimulus (question) difficulty;
3. Task (process) difficulty; and
4. Expected response difficulty.

When you read the framework you will see that

- the **demands of the reading required** to answer a question forms an important element of 'Stimulus difficulty'.
- the **demands of the written** text or representations students are required to produce for their **response** form an important element of 'Task difficulty'.
- the **cognitive demand** of a question is another element of 'Task difficulty'.

The framework draws a crucial distinction between 'valid' and 'invalid' sources of question difficulty in each of the four general categories.

Valid difficulty or 'easiness' is intended by the examiner. Invalid sources of difficulty are defined as those features of question difficulty that were *not* intended by the examiner. **Invalid sources of question difficulty** prevent the question from assessing what the examiner intended, and **are those aspects of question difficulty that prevent candidates from demonstrating their true ability or competence**. The framework provides **examples** of possible invalid sources for each category. For example, grammatical errors in a question that could cause misunderstanding are invalid sources of question difficulty because the difficulty in answering the question lies in the faulty formulation of the question, rather than in the intrinsic difficulty of the

question itself. Students may misunderstand the question and therefore not be able to demonstrate what they know.

Framework for thinking about question difficulty

CONTENT/CONCEPT DIFFICULTY

Content/concept difficulty indexes the difficulty in the **subject matter, topic or conceptual knowledge** assessed or required. In this judgment of the item/question, difficulty exists in the **academic and conceptual demands** that questions make and/or the **grade level** boundaries of the various 'elements' of domain/subject knowledge (topics, facts, concepts, principles and procedures associated with the subject).

For example

Questions that assess 'advanced content', that is, subject knowledge that is considered to be in advance of the grade level curriculum, are *likely* to be difficult or very difficult for most candidates. Questions that assess subject knowledge which forms part of the core curriculum for the grade are *likely* to be moderately difficult for most candidates. Questions that assess 'basic content' or subject knowledge candidates would have learnt at lower grade levels, and which would be familiar to them are *unlikely* to pose too much of a challenge to most candidates.

Questions that require general everyday knowledge or knowledge 'real life' experiences are *often* easier than those that test more specialized school knowledge.

Questions involving only concrete objects, phenomena, or processes are *usually* easier than those that involve more **abstract constructs, ideas, processes or modes**.

Questions which test students' understanding of theoretical or **de-contextualised issues or topics**, rather than their knowledge of specific examples or contextualised topics or issues *tend* to be more difficult. Questions involving familiar, contemporary/current contexts or events are *usually* easier than those that are more abstract or involve 'imagined' **events** (e.g. past/future events) or **contexts** that are distant from students' experiences.

Content difficulty may also be varied by changing **the number of knowledge elements or operations assessed**. *Generally* the difficulty of a question **increases** with the number of knowledge elements or operations assessed. Questions that assess students on two or more knowledge elements or operations are *usually* (but not always) more difficulty than those that assess a single knowledge element or operation.

Assessing students on **a combination of knowledge elements or operations that are seldom combined** *usually* increases the level of difficulty.

EXAMPLES OF INVALID OR UNINTENDED SOURCE OF CONTENT DIFFICULTY

- Testing obscure or unimportant concepts or facts that are hardly mentioned in the curriculum, or which are unimportant to the curriculum learning objectives.
- Testing advanced concepts or operation that candidates are extremely unlikely to have had opportunities to learn.

STIMULUS DIFFICULTY

Stimulus difficulty refers to the difficulty of the linguistic **features of the question (linguistic complexity)** and the challenge that candidates face when they attempt to read, interpret and understand the words and phrases in the question AND when they attempt to read and understand in the **information or 'texts' or source material (diagrams, tables and graphs, pictures, cartoons, passages, etc.) that accompanies the question.**

For example

Questions that contain words and phrases that require only simple and straightforward comprehension are *usually* easier than those that require the candidate to understand **subject specific phraseology and terminology** (e.g. idiomatic or grammatical language not usually encountered in everyday language), or that require more technical comprehension and specialised command of words and language (e.g. everyday words involving different meanings within the context of the subject).

Questions that contain information that is tailored to an expected response, that is, that contain no irrelevant or distracting information, are *generally* easier than those that require candidates to select relevant and appropriate information or **unpack a large amount of information** for their response.

A question set in very rich context *can* increase question difficulty. For example, students *may* find it difficult to select the correct operation when a mathematics or accountancy question is set in a context-rich context.

Although the level of difficulty in examinations is *usually* revealed most clearly through the questions, text complexity or the degree of **challenge or complexity in written or graphic texts** (such as a graph, picture, cartoon, etc.) that students are required to read and interpret in order to respond *can* increase the level of difficulty. Questions that depend on reading and selecting content from a text *can* be more challenging than questions that do not depend on **actually reading the accompanying text** because they test reading comprehension skills as well as subject knowledge. Questions that require candidates to **read a lot** *can* be more challenging than those that require limited reading. Questions that tell students where in the text to look for relevant information are *usually* easier than those where students are not told where to look.

The level of difficulty *may* increase if texts set, and reading passages or other **source material** used are challenging for the grade level, and make **high reading demands** on students at the grade level. Predictors of textual difficulty include

- **semantic content** - for example, if vocabulary and words used are typically outside the reading vocabulary of Grade 12 students, 'texts' (passage, cartoon, diagram, table, etc.) are *usually* more difficult. 'Texts' are *generally* easier if words or images are made accessible by using semantic/context, syntactic/structural or graphophonic/visual cues.
- **syntactic or organisational structure** - for example, sentence structure and length. For example, if students are likely to be *familiar with the structure* of the 'text' or resource, for example, from reading newspapers or magazines, etc. 'texts' are *usually* easier than when the structure is unfamiliar.
- **literary techniques** - for example, abstractness of ideas and imagery - and **background knowledge required**, for example, to make sense of allusions.
- if the context is unfamiliar or remote, or if candidates do not have **access to the context** which informs a text (source material, passage, cartoon, diagram, table, etc.) they are expected to read, and which informs the question they are supposed to answer and the answer they are expected to write, then constructing a response is *likely* to be more difficult than when the context is provided or familiar (for example. if details about the originator/'producer' of source material are provided in history).

Questions which require students to cross-reference different sources are *usually* easier than those which deal with one source at a time.

Another factor in stimulus difficulty is presentation and visual appearance. For example, type face and size, use of headings, and other types of textual organisers etc. can aid 'readability' (Mobely, 1987 in Fisher-Hoch and Hughes, 1996) and make it easier for students to interpret the meaning of a question.

EXAMPLES OF INVALID OR UNINTENDED SOURCES OF STIMULUS DIFFICULTY

- Meaning of words unclear or unknown.
- Difficult or impossible to work out what the question is asking.
- Questions which are ambiguous.
- Grammatical errors in the question that could cause misunderstanding.
- Inaccuracy or inconsistency of information or data given.
- Insufficient information provided.
- Unclear resource (badly drawn or printed diagram, inappropriate graph, unconventional table).
- Dense presentation (too many important points packed in a certain part of the stimulus).

TASK DIFFICULTY

Task difficulty refers to the **difficulty that candidates confront when they try to formulate or produce an answer.**

For example

In most questions, to generate a response, candidates have to work through the steps of a solution. *Generally*, questions that **require more steps in a solution** are more difficult than those that require fewer steps. Questions involving only one or two steps in the solution are *generally* easier than those where several operations required for a solution.

Task difficulty may also be mediated by the **amount of guidance present in the question**. Although question format is not necessarily a factor and difficult questions can have a short or simple format, questions that provide guided steps or cues (e.g. a clear and detailed framework for answering) are *generally* easier than those that are more open ended and require candidates to form or tailor their own response strategy or argument, work out the steps and maintain the **strategy for answering** the question by themselves. A high degree of prompting (a high degree of prompted recall, for example) *tends* to reduce difficulty level.

Questions that test specific knowledge are *usually* less difficult than **multi-step, multiple-concept or operation questions**.

A question that requires the candidate to use a **high level of appropriate subject, scientific or specialised terminology** in their response *tends* to be more difficult than one which does not.

A question requiring candidates to **create a complex abstract (symbolic or graphic) representation** is *usually* more challenging than a question requiring candidates to create a concrete representation.

A question requiring writing a one word answer, a phrase, or a simple sentence is *often* easier to write than responses that **require more complex sentences, a paragraph or a full essay or composition**.

Narrative or descriptive writing, for example where the focus is on recounting or ordering a sequence of events chronologically, is *usually* easier than **writing discursively** (argumentatively or analytically) where ideas need to be developed and ordered logically. In subjects such as history where one of the goals is that students learn to express themselves well (in English, etc.) and **writing skill** is part of what students are supposed to learn, some questions reflect expected response difficulty simply by 'creating the space' for A-grade candidates to demonstrate genuine insight, original thought or good argumentation, and to write succinctly and coherently about their knowledge.

On the other hand, questions which require continuous prose or extended writing may also be easier to answer correctly or to get marks for than questions that require no writing at all or single letter answer (such as multiple choice), or a brief response of one or two words or short phrase/s because they **test very specific knowledge**.

The **cognitive demand** or **thinking processes** required form an aspect of task difficulty. Some questions test thinking ability, and students' capacity to deal with ideas, etc. Questions that assess inferential comprehension or application of knowledge, or that require students to take ideas from one context and use it in another, for example, *tend* to be more difficult than questions that assess recognition or retrieval of basic information. Questions requiring recall of knowledge are *usually* more difficult than questions that require simple recognition processes.

When the **resources for answering** the question are included in the examination paper, then the task is *usually* easier than when candidates have to use and select their own internal resources (for example, their own knowledge of the subject) or transform information to answer the question.

EXAMPLES OF INVALID OR UNINTENDED SOURCES OF TASK DIFFICULTY

- Level of detail required in an answer is unclear.
- Context is unrelated to or uncharacteristic of the task than candidates have to do.
- Details of a context distract candidates from recalling or using the right bits of their knowledge.
- Question is unanswerable.
- Illogical order or sequence of parts of the questions.
- Interference from a previous question.
- Insufficient space (or time) allocated for responding.
- Question predictability or task familiarity. If the same question regularly appears in examination papers or has been provided to schools as exemplars, students are likely to have had prior exposure, and practised and rehearsed answers in class (for example, when the same language set works are prescribed each year).

EXPECTED RESPONSE DIFFICULTY

Expected response difficulty refers to difficulty imposed by examiners in a **mark scheme and memorandum**. This location of difficulty is more applicable to 'constructed' response questions, as opposed to 'selected' response questions (such as multiple choice, matching/true-false).

For example

When examiners expect few or no details in a response, the question is *generally* easier than one where the mark scheme implies that **a lot of details are expected**.

Another element is the **complexity in structure of an expected response**. When simple connections between ideas or operations are expected in a response, the question is *generally* easier to answer than a question in which the significance of the relations between the parts and the whole is expected to be discussed in a response. In other words, a question in which an unstructured response is expected is *generally* easier than a question in which **a relational response** is expected. A response which involves **combining or linking a number of complex ideas or operations** is *usually* more difficult than a response where there is no need to combine or link ideas or operations.

A further aspect of expected response difficulty is the **clarity of the allocation of marks**. Questions are *generally* easier when the allocation of marks is explicit, straight-forward or logical (i.e. 3 marks for listing 3 points) than when the **mark allocation is indeterminate or implicit** (e.g. when candidates need all 3 points for one full mark or 20 marks for a discussion of a concept, without any indication of how much and what to write in a response). This aspect affects difficulty because candidates who are unclear about the mark expectations in a response may not produce sufficient amount of answers in their response that will earn the marks that befit their ability.

Some questions are more difficult/easy to mark accurately than others. Questions that are **harder to mark and score objectively** are *generally* more difficult for candidates than questions that require simple marking or scoring strategies on the part of markers. For example, recognition and recall questions are *usually* easier to test and mark objectively because they usually require the use of matching and/or simple scanning strategies on the part of markers. More complex questions requiring analysis (breaking down a passage or material into its component parts), evaluation (making judgments, for example, about the worth of material or text, or about solutions to a problem), synthesis (bringing together parts or elements to form a whole), and creativity (presenting own ideas or original thoughts) are *generally* harder to mark/score objectively. The best way to test for analysis, evaluation, synthesis and creativity is usually through essays. Such essays *generally* require the use of more cognitively demanding **marking** strategies such as interpreting and evaluating the logic of what the candidate has written.

Questions where **a wide range of alternative answers or response/s** is possible or where the correct answer may be arrived at through different strategies *tend* to be more difficult. On the other hand, questions may be so open-ended that students will get marks even if they engage with the task very superficially.

EXAMPLES OF INVALID OR UNINTENDED SOURCES OF EXPECTED RESPONSE DIFFICULTY

- Mark allocation is unclear or illogical. The weighting of marks is important in questions that comprise more than one component when components vary in levels of difficulty. Students may be able to get the same marks for answering easy component/s of the item as other students are awarded for answering the more difficult components.
- Mark scheme and questions are incongruent.
- Question asked is not the one that examiners want candidates to answer. Memorandum spells out expectation to a slightly different question, not the actual question.
- Impossible for candidate to work out from the question what the answer to the question is (answer is indeterminable).
- Wrong answer provided in memorandum.
- Alternative correct answers from those provided or spelt out in the memorandum are also plausible.
- The question is 'open' but the memo has a closed response. Memo allows no leeway for markers to interpret answers and give credit where due.

The above framework does not provide evaluators with explicit links between the different categories, or show relationships between the different concepts in the framework. This is because it is impossible to set prescribed rules or pre-determined combinations of categories and concepts for making judgements about where the difficulty in a particular examination question might lie.

The idea behind the framework is to allow evaluators to exercise their sense of professional judgement as a coherent whole. The complexity of the judgement task lies in an evaluator's ability as an expert to recognise subtle interactions and identify links between different elements of a question's difficulty or 'easiness'. For example, a question that tests specific knowledge can actually be more difficult than a multi-step question because it requires candidates to explain a highly abstract theory, or very complex content.

Methodology

The post-examination analysis process consisted of gathering teams of subject experts to evaluate examination papers and memoranda based on an instrument developed by Umalusi.

Each subject team ideally consisted of:

- An academic working in the subject
- A subject advisor for the subject
- A teacher currently teaching the subject

In some cases it was not possible to gather a team that met all these criteria, but in general the above is an accurate representation of the Umalusi Post-Examination analysis team structure.

Before any analysis all teams were thoroughly trained either in group workshops or individually in order for a uniform understanding of the framework for assessing question difficulty to be built up. Once this was achieved, the teams were provided with the examination papers and memoranda required for analysis, together with the instrument and accompanying spreadsheet for them to capture the data required for analysis. Each team then met in mid-2014 to finalise their analyses for the 2012-2014 Exemplar examinations and write interim subject reports for submission to Umalusi.

After comments and feedback were provided, including inputs from members of Umalusi's Assessment Standards Committee, the teams then met within a day or so of the final 2014 examinations for their subject to analyse the final exams and construct final reports that incorporated previous feedback. The final reports were submitted to Umalusi, and an extraction of the data that is of particular relevance to the Assessment Standards Committee was undertaken to provide this digest report.

Section 2: Subject Reports – Department of Basic Education

2.1: Accounting – Department of Basic Education

Subject: Accounting

Introduction

This report provides an analysis of the National Senior Certificate (NSC) examination question papers for Accounting Grade 12. The Department of Basic Education (DBE) 2014, 2014 exemplar paper, the 2012 and 2013 Accounting examination papers were analysed to assess compliance with the CAPS, quality and standard of the examination papers.

Each team member initially worked through the examination papers individually. The data collected from the item-by-item analysis was plotted on an individual MS Excel spreadsheet. After the initial individual analysis, the team members met to compile a composite report and spreadsheet. In cases where the team members disagree about the selection of categories, it was extensively discussed by the team members until the consensus was reached. During analysis, questions were classified in one of eight categories or types of cognitive demand. Within this category, each question was also classified according to levels of difficulty, that is, easy, moderate, difficult or very difficult. Sources of difficulty were also listed in the case of difficult questions. Justification for the source of difficulty was also provided. Data from the MS Excel spreadsheet was then used to compile a composite report.

1. Compliance with the CAPS

1.1 Format and structure

In Table 1 below, the DBE Accounting papers that were analysed for 2012, 2013, and 2014 are presented.

Exam paper	Focus area	Duration (hrs)	Mark allocation
DBE 2012	Financial Accounting	3	300
	Managerial Accounting		
	Managing resources		
DBE 2013	Financial Accounting	3	300
	Managerial Accounting		
	Managing resources		

DBE 2014 Exemplar	Financial Accounting	3	300
	Managerial Accounting		
	Managing resources		
DBE 2014	Financial Accounting	3	300
	Managerial Accounting		
	Managing resources		

All the DBE papers comply with the requirements as specified in the SAG and CAPS as they cover the scope of the grade 12 curriculum: Financial Accounting, Managerial Accounting and Managing resources

The 2014 final DBE paper complies with the examination requirements as set out by the CAPS with regard to the format and structure. The mark allocation (300 marks) and duration (3 hours) of the examination paper complies with the suggestions in the CAPS.

The CAPS does not stipulate the number of questions per paper and the mark allocation per question. However it is stipulated in the examination guidelines that questions may vary from 5 to 8 questions. Like other previous years examination papers, the final DBE 2014 paper consists of 6 questions. All questions are compulsory and are to be answered in a specially prepared answer book.

It is stipulated in the CAPS that all topics require integration of ethical issues and internal control. There were no ethical issues integrated in any of the questions while internal control was integrated in all questions as suggested in the CAPS except Questions 4 and 5 and totalled 28 marks in total.

The team noted that the DBE 2014 final paper includes the new content as specified in the CAPS. Creditors Reconciliation was examined in Question 2. Repurchase (buy-back) of shares was examined in Question 3 where the focus was on the repurchase (buy-back) of shares and its effect on the Balance Sheet and Notes. Other aspects related to the repurchase of shares were included in Statement of Cash Flow in Question 4 from the point of view of how a repurchase would affect the cash flow of a business.

Although all new content was covered adequately in the DBE 2014 final paper, this has led to double testing of repurchase of shares across namely in Questions 3 and 4. While this is not a desirable practice, the team believed that it was appropriate as it was tested in different contexts. In Question 3 learners had to distinguish between the amount that was recorded in the share capital note i.e. the average price and the amount recorded in the retained income note i.e. the difference between the average price and the purchase price. In Question 4 the impact of the repurchase of shares on the cash flows was examined.

In the CAPS it is stipulated that approximately 10% of all Accounting examinations should address problem-solving questions (CAPS, pg. 44) where learners are required

to use critical and creative thinking. Although problem solving aspects were integrated in other questions, Question 6 covered problem solving more thoroughly.

The CAPS document (pg. 44) states that the Grade 12 examinations may contain a 20% weighting of content stipulated in previous grades which has an impact on Grade 12 content. The team's view was that some of this content was tested implicitly in most of the questions in the DBE final paper.

1.2 Cognitive demand weightings

With regard to addressing of cognitive levels, the CAPS stipulates a three-way split between Lower- Middle- and Higher-order cognitive levels in a 30%:40%:30%.

	Lower- order			Middle-order		Higher-order		
TARGET	30%			40%		30%		
DBE 2014 final paper	Remember	Understand	Apply 1	Apply 2	Analyse 1	Analyse 2	Evaluate	Create
Marks	4	19	63	119	11	18	57	9
%	1%	6%	21%	40%	4%	6%	19%	3%
	29%			43%		28%		

From Table 2 above, in terms of the required target of 30%:40%:30%, the DBE 2014 final paper conforms fairly closely to the required targets. The middle-order questions are somewhat higher than stipulated in CAPS, but not excessively so.

Analysis of this paper indicated that 61% of the marks were allocated to the application level type of questions. This is due to a heavy emphasis on the preparation of financial statements in particular Balance Sheet in Question 3.2, Cash Flow Statement in Question 4.2 and Production Cost Statement in Question 6.1). Although application level is heavily weighted, 40% of this level is advanced application. Questions in this level involve more in-depth processes where learners are asked to perform advanced accounting procedures and this was evident in all six questions.

22% of the paper was extremely challenging cognitively. In this level learners were required to engage with financial information and to use their innovative and creative abilities to identify and provide solutions to various scenarios.

This paper accommodates learners who have different levels of ability. There are enough marks allocated to lower order cognitive levels for the learners to attain at least 30%. In addition there are enough marks allocated to higher order cognitive levels which would challenge the brighter learners.

1.3 Topic or content and/or skills area weightings

According to the CAPS, the target for content coverage is 50%-60% Financial Accounting; 20%-25% Managerial Accounting; 20%-25% Managing Resources.

Table 3 - Comparison of the topic or content and/or skill weightings specified with the weightings for DBE 2014 the examination paper		
FOCUS / TOPIC AREA		
FINANCIAL ACCOUNTING	151	50%
TARGET 50 – 60%		
Companies	124	
Interpret reconciliations - bank, debtors, creditors, age-analysis	16	
Value-added tax	11	
MANAGERIAL ACCOUNTING	89	30%
TARGET 20 – 25%		
Production cost statement & notes	34	
Unit costs & break-even	15	
Cash budget - sole trader/company - analyse & interpret	40	
MANAGING RESOURCES	60	20%
TARGET 20 – 25%		
Interpret & report on movement of fixed assets including disposal	12	
Perpetual & periodic inventory systems	5	
Validate & calculation inventories - FIFO, Weighted average, Specific Identification.	15	
Internal control & internal audit processes	28	

According to Table 3 above, the DBE 2014 final paper was within the target for the Financial Accounting field and Managing Resources field, albeit at the lower end of the ranges for both. Although the paper complies with the CAPS specifications regarding content coverage, Managerial Accounting is slightly over-represented at the expense of the other two fields.

The main topics omitted for the DBE 2014 final paper were ethical behaviour and professional bodies and code of conduct. Ethical behaviour could have been assessed explicitly in the various questions and not incorporated in internal control.

In the CAPS a Company Cash Budget is one of the new topics. Cash Budget is the most heavily weighted topic under Managerial Accounting in the DBE 2014 paper.

It is noted that the DBE 2014 final paper examines VAT which had not been extensively assessed in prior papers.

1.4 Coverage of examinable curriculum

Of the 24 examinable topics in the grade 12 syllabus, below is the number of topics which were examined in each paper the team analysed.

Table 4 - Comparison of the coverage of examinable curriculum for DBE 2012, 2013, 2014 exemplar and 2014 final paper.			
Paper	No. of Topics examined	Percentage examined	Essential knowledge not examined
DBE 2012	15	63%	<ul style="list-style-type: none"> -Selected ledger accounts – companies -Accounting equation – companies -Financial statements - IS – companies -Analysis and interpretation of published financial statements -Manufacturing concepts -Short-form – manufacturing Income Statement & notes -Perpetual & periodic inventory systems -Interpretation and report on movements of fixed assets. -Ethical behaviour -Cash Budget
DBE 2013	16	67%	<ul style="list-style-type: none"> -Selected ledger accounts – companies -Concepts - GAAP & IFRS -Final accounts – companies -Analysis and interpretation of published financial statements -VAT -Short-form – manufacturing Income

			<p>Statement & notes</p> <ul style="list-style-type: none"> -Interpretation and report on movements of fixed assets. -Projected Income Statement -Ethical behaviour
DBE 2014 exemplar	16	67%	<ul style="list-style-type: none"> -Concepts - GAAP & IFRS -Selected ledger accounts – companies -Accounting equation – companies -Final accounts – companies -Analysis and interpretation of published financial statements -VAT -Projected Income Statement -Short-form – manufacturing Income Statement & notes -Perpetual & periodic inventory systems
DBE 2014	13	54%	<ul style="list-style-type: none"> -Concepts of GAAP and IFRS Selected ledger accounts – companies -Accounting equation – companies -Final accounts companies -Financial statements - IS – companies -Analysis and interpretation of published financial statements -Manufacturing concepts -Short-form – manufacturing Income Statement & notes -Projected income statement -professional bodies and code of conduct -Ethical behaviour

From Table 4 above, all papers (DBE 2012, 2013, 2014 exemplar and DBE 2014 Final) reflected a good spread of questions across the topics in the curriculum. As the duration of the Accounting paper is 3 hours and 300 marks, it is impossible for the examiner to examine all topics in the curriculum in the time allocated for this. The examiners are therefore selective because the curriculum is too broad. For example if the Balance Sheet (Statement of Financial Position) is examined it is not usual for the Income Statement (Statement of Comprehensive income) to be examined.

The levels of complexity in Accounting are incorporated within topics across the grade. The range of skills progresses from understanding concepts, recording information to analysis, interpretation and evaluation of the financial information. The main topics that are always assessed integrate knowledge and skills from other topics within the grade.

The following topics are usually not examined in the papers as stand-alone questions:

Ethical behaviour, company ledger accounts, GAAP concepts, Company Final accounts, Short form-manufacturing Income Statement & notes.

Company ledger accounts are normally assessed internally at school level in either formative and/or summative assessments. It is not included in the examination paper because the assumption is that learners need knowledge and skills from ledger accounts to complete the financial statements and notes. Ethical behavior is examined usually by asking learners to assess a particular internal control issue.

To avoid double testing the Projected Income Statement is not usually examined together with a Cash Budget neither are Final Accounts examined with an Income Statement as the income statement is simply a logical format of these ledger accounts

There were no questions in any of the exam papers analysed that were non-examinable, for example close corporations.

2. Quality of examination papers

2.1 Invalid sources of question difficulty or ease.

There were no questions that were assessed as having invalid sources of difficulty or of ease in the DBE 2012, 2013 and 2014 exemplar examination papers analysed.

In the DBE 2014 final paper there were two minor invalid sources. In Question 1.3.4, the question was not specific in terms of what learners were required to answer. The word 'control' could have been replaced by the word 'loss' to guide learners (3 accuracy and 1 method mark totalling 4 marks). In Question 3 information B, the date for interim dividends paid falls outside the financial year under consideration. This would have

an impact on the retained income closing balance and amounted to 1 accuracy mark, all the other marks affected by this were method marks.

2.2 Format and structure

The format of the DBE question papers was clear and well set out for all the papers examined. The information in most of the papers was structured in a logical way that should have facilitated the learners' thinking process. The requirements were clear and to the point.

The questions were printed in such a way that learners did not have to page backwards and forwards to retrieve the information necessary in order to answer the required questions.

By restating the questions in the DBE answer book the learners were refocused in terms of what was required from the information provided in the question which in the teams opinion works well.

The DBE 2012, 2013, 2014 exemplar and 2014 final papers all had six questions. On the whole all of these papers provided the learners with all the necessary information relevant to complete the required in the question.

For the DBE papers the first two questions are usually presented in such a way that the learners are able to score marks fairly easily and also gain time as they can work fairly quickly through these questions. In each of these questions there are elements which were easy and ease the learners into the exam paper.

The fact that in some cases the most difficult questions were placed at the end of the papers could be considered appropriate but learners who might have wasted time on the previous questions would not have been able to do justice to these questions which required more in depth reading and understanding than the others.

The team believes that most learners generally battle to stick to the times allocated to complete each of the questions and if they struggle with questions early on in the paper they then do not have time to complete the more challenging or longer questions that are usually at the end of the paper. As a result of this, as a team we feel that learners might not perform to the level expected of them. Learners whose home language is not English or Afrikaans were more likely to spend more time on reading and interpreting the information provided. This too would impact on the learner's ability to finish the paper within the allocated time. A suggestion would be to provide more time to write these papers due to the issues mentioned above.

The language used was fairly simple, not discriminatory and appropriate for the large majority of learners.

However we do note that the current updated terminology has not been used. A suggestion would be to use new terminology and in brackets refer to the old name e.g. **Balance Sheet** now called **Statement of Financial Position**.

The team found that the material provided was generally appropriate. Most of the information provided was necessary for the answering of each question but in some cases there was a large amount of background information and/or scenarios that had to be read before answering the questions that followed e.g. DBE 2012 and 2014 exemplar (e.g. Question 6.2). The information provided in the DBE 2014 final paper was succinct.

One of the key principles of accounting is for learners to be able to identify and recognise what elements are being affected by a transaction and how this transaction should have been recorded in the accounting records and presented on the financial statements. By providing extensive scaffolding in an answer book, this skill is lost and learners are simply required to calculate and place the value next to the element which has already identified for them. It was noted that the DBE answer books provided less information in the frameworks and thus tested these accounting concepts and principles appropriately in the accounting records or on the financial statements. However in the DBE 2014 final paper the team were of the opinion that too much information was provided for the share capital note Question 3.1.1 and as a result this question became a pure calculation exercise and did not test the concepts and principles.

In the team's opinion the mark allocation in some places was not consistent throughout the papers examined. E.g. DBE 2012, question 4.2.1; DBE 2014 exemplar, Question 5 and 6; DBE 2014 final paper Question 1.3.4 not enough marks were allocated for calculations and Questions 3.5 and 4.6 no method marks were given for using an amount calculated elsewhere; Question 4.2 two marks were awarded for a given amount where in other cases only one mark was given.

In some cases not enough marks were allocated for complex calculations in the memorandum e.g.: There were too many accuracy marks allocated in the DBE 2014 exemplar Question 5.2 and 6.1.3, proceeds of issue of share capital and depreciation for current year and accumulated depreciation, which would have disadvantaged the learners, while Question 6.1.1 required learners to calculate the profit/loss on the sale of an asset which involved various steps and calculations and no method or consequential marks were allocated. The information provided in Question 6.2 of the DBE 2014 exemplar has inaccuracies; this could have resulted in learners getting confused or even panicking.

The following questions are good models or effective questioning to include in future examinations:

- DBE 2013 paper, Question 4 and 2014 exemplar, Question 5. These questions are type of questions that require learners to use increasingly higher cognitive levels.
- DBE 2013 paper, Question 1 and 2. These questions are well structured and the information provided is concise and to the point. The questions started off with easy questions and built to more challenging questions.

- DBE 2014 final paper, Question 5. This question required students to analyse and interpret the budgets which challenged learners at the middle and higher cognitive levels.
- DBE 2014 final paper, Question 4.2 which related to cash flows marks were allocated to the details which is part of the format which they ought to know and this would enable the weaker learners to earn marks for a section that is usually regarded as challenging.
- DBE 2014 final paper Question 4.1 the tangible asset notes. This question examined all aspects related to tangible assets in terms of the purchase, disposal and depreciation.

2.3 Rating the quality of examination papers

In terms of the quality of the exam papers the team assessed format and structure.

Table 5 - Ratings for the quality of examination papers	
Exam papers	Rating the quality of examination papers
<u>DBE 2012</u>	<u>Good</u>
<u>DBE 2013</u>	<u>Good</u>
<u>DBE 2014 Exemplar</u>	<u>Good</u>
<u>DBE 2014 final</u>	<u>Good</u>

3 Standard of the examination papers

3.1 Levels of difficulty

Differences in ratings of difficulty levels between individual evaluators were resolved before writing the report. The reason for these differences is firstly the team members do not all have the same understanding of what the typical learner is or ought to be. Secondly two of the team members are working in the schooling environment so have a better understanding of what the teaching, learning and assessment challenges are in these environments.

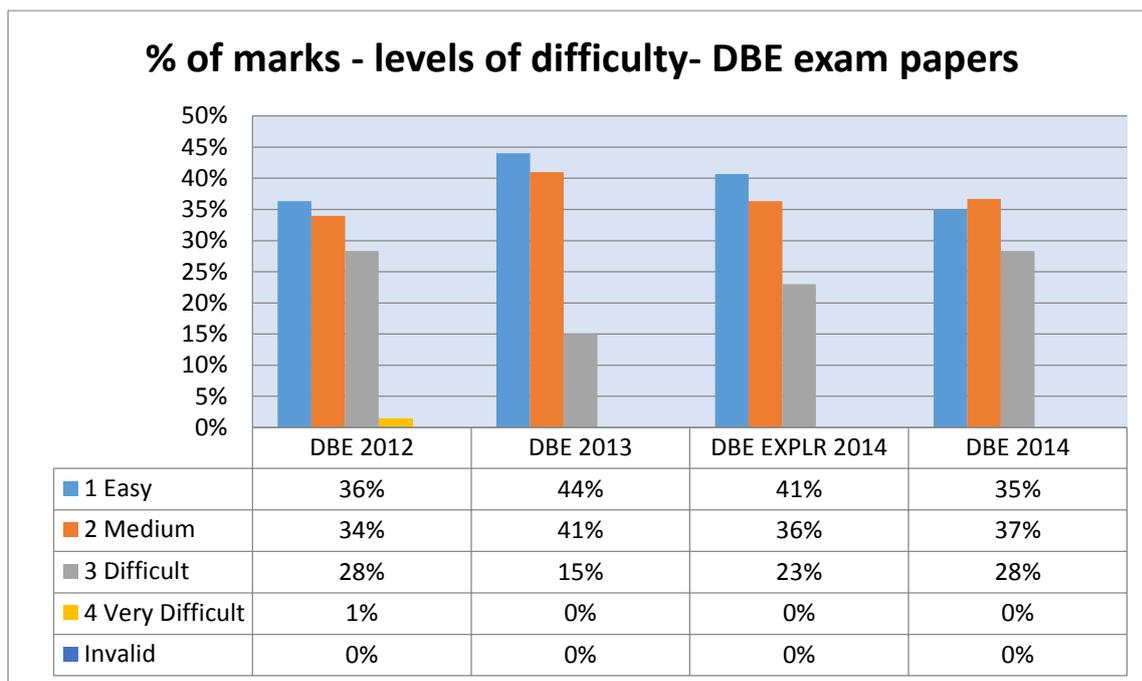
For Example in the DBE 2014 exemplar paper the differences were:

- Question 2.1 and 2.2; distribution of marks among the different levels of challenge.
- difficulty of the comment for question 1.2.3

However there was discussion around the interpretation of the Blooms taxonomy meaning of analysis and application. Some team members were of the opinion that calculating a ratio was analysis while others were of the opinion that this was applying the given information to a specific formula. The analysis then follows once this application has been performed. It was decided to allocate the marks for calculating a ratio to analysis as this is how the examiners and teachers interpret it. This confusion could arise as a result of ratios falling under the heading analysis and interpretation of financial statements in the CAPS.

It is stipulated in the Exam Guideline that all examinations in Accounting, must reflect sub-questions of differing degrees of challenge, i.e. Easy, Moderate and Difficult to ensure that question papers cater for the full range of abilities of learners.

Percentage of marks awarded to the different levels of difficulty in the examination papers



The DBE 2013 paper appears to be the least challenging with 44% easy questions and 15% difficult questions compared to the other papers. The 2013 paper was the last to be written on the NCS curriculum. The DBE 2014 exemplar paper appears to be the second easiest with 41% easy and 23% difficult.

The DBE 2012 paper was more difficult (28%) than the other years, yet there were enough easy marks for learners to earn in order to pass. The paper also reflects very difficult marks at 1% which involved extensive analysis of the data (question 3.2.4), while other papers did not include very difficult questions. The team did concede that the average learner would find Q4, 5 and 6 difficult and the weak learners would find these questions extremely challenging. The inclusion of these types of questions allows learners to use their innovative and creative abilities and distinguishes between learners of different abilities.

The DBE 2014 final paper was of a similar standard to that of 2012. The only exception was that there were no very difficult questions but the difficult questions were sufficient to extend the top end learners. This paper was an improvement in the quality and standard as compared to the DBE 2013 paper.

3.2 Example of a question at each level of difficulty

Most of the questions are not solely easy, medium or difficult but usually a combination of all three levels of difficulty. Where there are sub-questions with solely one level of difficulty the marks allocated are fairly small.

Table 6- Example of a question at each level of difficulty	
DBE 2014 final paper	Examples
<u>EASY</u>	<u>Question 4.2 (19 marks allocated out of a possible 31)</u> <u>Marks were allocated to the details and for simply slotting in amounts that were provided without any adjustments.</u>
	<u>Question 5.1 (4 marks)</u> All of these marks were easy. Learners had to extract information from an incorrect cash budget.
<u>MEDIUM</u>	<u>Question 3.2 (10 marks out of a possible 26)</u> <u>In the balance sheet method marks were allocated and some marks were allocated for slotting in amounts in the correct place without any adjustments however the learners had to identify the element (asset/liability) first before slotting them in which made it more difficult than in the example above.</u>
	<u>Question 5.3.1 (3 marks)</u> All of these marks were medium. The information required learners to calculate the total sales by working backwards from the information provided.
<u>DIFFICULT</u>	<u>Question 6.2.1 (9 marks out of a possible 12)</u> <u>Learners had to identify and solve a problem which was new to them. Weaker learners will not score any marks in this question.</u>
	<u>Question 4.7 (5 marks)</u> All of these marks were difficult as they had to evaluate an unfamiliar scenario using calculations to justify their answer.
<u>VERY DIFFICULT</u>	<u>No very difficult questions.</u>

3.3 Difficulty of stimulus/source material

In Accounting stimulus is related to scenarios and background financial information that is provided for learners to be able to analyse and evaluate to answer questions. This stimulus requires the learners to understand subject specific terminology used in specific context and which is often contained in financial statements and their accompanying notes and from which they are expected to tailor an expected response. In the case of DBE papers, additional information is part of the question paper.

Source material in all four examination papers is consistent with expected levels for Grade 12. What the team found is that questions contain no irrelevant or distracting information. In most cases learners know where in the text to look for relevant information.

The team identified stimulus that learners might consider difficult. This was however appropriate to the questions being asked. In all four papers there were instances where learners had difficulty in responding because of the following reasons:

- Difficulty to interpret and understand information given
- Working backwards from given information in order to find the missing amounts
- A lot of background reading
- Unpack a large amount of information for their response
- Select relevant and appropriate information from dense contextual information

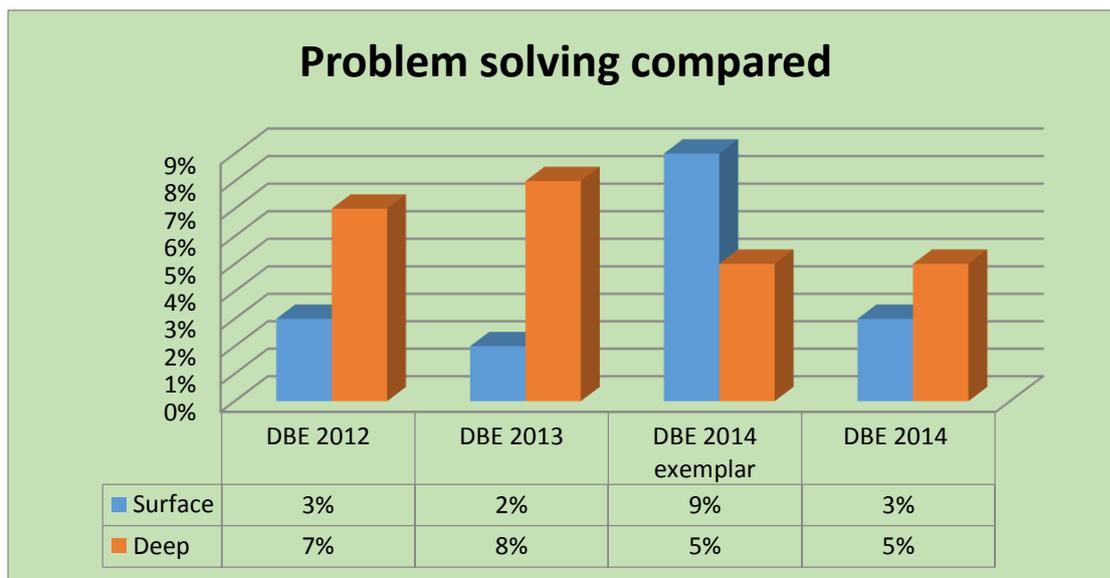
Table 7 – Examples of questions with difficult stimulus		
Exam paper	Question	Justification for difficult stimulus
<u>DBE 2012</u>	3.2.3	Difficulty to interpret information given.
	4.2.3	More steps involved in calculation.
	6.6	Difficulty to interpret information given.
<u>DBE 2013</u>	5.2	Reverse calculation & reading.
	6.2.2	Format of information & integrated in context of valuation.
<u>DBE 2014 Exemplar</u>	<u>6.2.1</u>	<u>Too much information to select from.</u>
<u>DBE 2014</u>	<u>4.3</u>	<u>Little direction in terms of what answer was expected from the learners.</u>

3.4 Other points regarding the standard of the examination

Problem solving

According to the CAPS, approximately 10% of all examinations should address problem-solving questions of a deep and surface nature using critical and creative thinking. These problem-solving questions must also cover a range of cognitive skills (lower, middle and higher-order) to cater for all learners but within the context of backgrounds the learners come from. The inclusion of these types of questions allows learners to use their innovative and creative abilities and distinguishes between learners of different abilities.

Comparison of problem solving questions for DBE 2012, 2013, 2014 exemplar and 2014 paper



Both DBE 2012 and 2013 papers included enough problem solving questions to meet the target of 10% and these were predominantly of a deep nature. The papers reflected 8% and 7% of the total weighting on deep problem-solving questions. These questions came from questions 2, 3 and 6 for DBE 2012 and question 2, 5 and 6 for DBE 2013. In these questions learners were asked to solve a real problem faced by the business. For DBE 2012 paper 4 marks (1% of the paper) of problem solving questions were analysed as very difficult as the information provided was implicit and therefore not easy to interpret.

The DBE 2014 exemplar exceeded the 10% target for problem-solving type questions. The paper reflected a low focus on deep problem-solving questions in contrast to the 2012 and 2013 DBE papers.

The DBE 2014 final paper is below the 10% target at 8%. Although 22% of the paper was extremely challenging cognitively, the paper reflected less questions on problem solving compared to other years. In order to address the issue of not meeting the target figure of 10%, more in-depth problem type questions need to be added for students to evaluate information and create solutions to solve problems.

4 Recommendations for improving the quality and standard of the examinations

- The curriculum needs to be updated on a more regular basis to reflect current practice: Terminology relating to financial statements e.g. **Balance Sheet** now called **Statement of Financial Position**.
- Ensure that the stimulus (background and information) provided is accurate and not confusing.
- The adequacy and accuracy of **marking memorandum** should be checked. Award method marks for calculation done and not just accuracy marks. Learners are unfairly penalised all the way through their answer when only accuracy marks are awarded and no consequential marks were given.
- The new content is particularly pertinent to the evolving nature of the Accounting disciplines at tertiary level. However, the team is concerned about other topics which are neglected in the exam papers.

The DBE 2014 final paper is not balanced according to the distribution of marks across the topics examined in the paper. Too much emphasis was placed on Managerial Accounting topics, while the other two fields were assessed at the bottom of the targeted range.

The DBE 2014 final paper is within the targeted cognitive levels. The paper reflected good spread at the various levels of difficulty. However no marks were allocated to very difficult questions which would have allowed for true A-grade learners to be discriminated from other learners performing at these high levels.

The format of the answer book was much improved compared to previous years in that learners had to apply their understanding of the concepts and principles and not purely calculate the amounts and place them on the answer sheet where all the identification of these principles and concepts had already been done for them.

The standard of the DBE 2014 final paper was acceptable in terms of cognitive levels, levels of difficulty and coverage of the examinable content. The team considered the DBE 2014 final paper to be a good model for future examinations in terms of their structure and layout.

5 Comparability of examination papers

5.1 Comparability of quality

The rating provided in the table below is based on the quality of the format, structure and layout of the papers as discussed in section 2.1 above.

Table 8 - Quality of the DBE 2014 final paper relative to examination papers for previous years.	
Exam paper	Overall quality of the DBE 2014 final paper compared
<u>DBE 2012</u>	<u>Equivalent</u>
<u>DBE 2013</u>	<u>Equivalent</u>
<u>DBE 2014 Exemplar</u>	<u>Better than</u>

From table 8 above, the quality of the DBE 2014 final paper can be considered to be comparable with DBE 2012 and 2013 with regard to quality, layout and structure with the exception of DBE 2014 exemplar. Although the 2014 exemplar paper addresses the examinable content appropriately, the spread of marks within each field was not appropriate as its focus was on the new content. As a result there was double testing of these topics across the questions. This will create the impression to teachers that double testing is acceptable in examination papers.

The format of the all examination papers was clear and well set out. The requirements were clear and to the point. Material and information provided was generally appropriate and necessary for the answering of each question. However, there were some cases in the 2014 exemplar where there was a large amount of background information and/or scenarios that had to be read before answering the questions. Hence the DBE 2014 paper is viewed as better than the DBE 2014 exemplar.

5.2 Comparability of standards

The following discussion is based on the information provided above and the data gathered in the spreadsheet.

Comparing cognitive demand weighting for each examination paper.

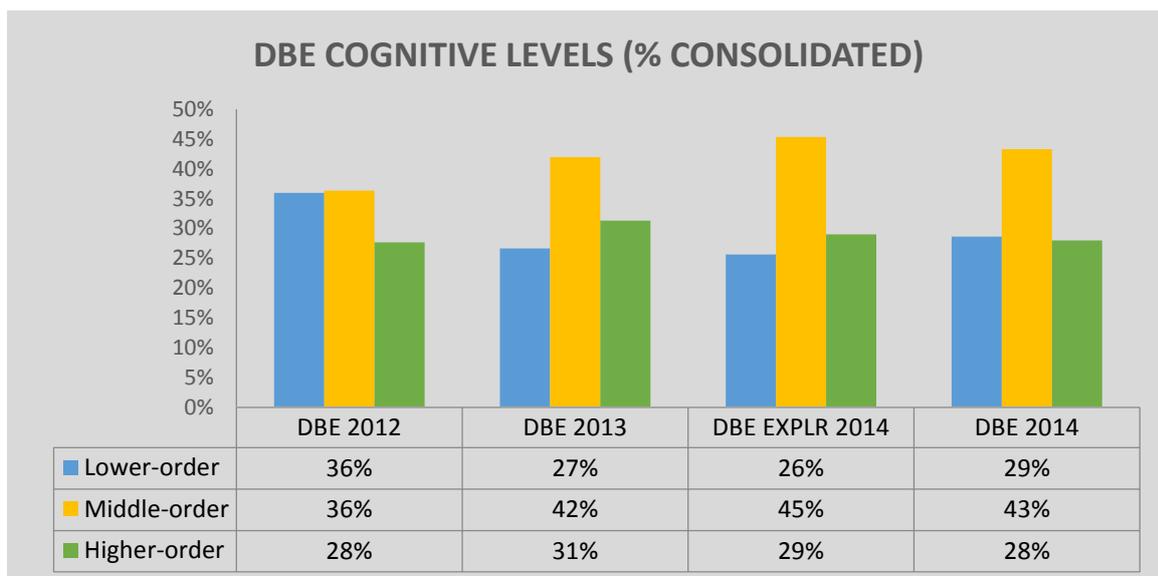


Table 9 - Percentage of marks awarded to the different levels of difficulty in the examination papers.

	1 E	2 M	3 D	4 VD
DBE 2012	36%	34%	28%	1%
DBE 2013	44%	41%	15%	0%
DBE 2014 Exemplar	41%	36%	23%	0%
DBE 2014	35%	37%	28%	0%

Based on the data presented above:

The DBE 2013 and 2014 papers were more challenging cognitively than DBE 2012 and 2014. DBE 2012 paper reflected more questions on lower-order and fewer questions on higher-order and middle-order level at 36%. However DBE 2014 paper is considered to be fairly compliant with the required targets compared to other papers.

The data reflects that although the DBE 2013 and 2014 papers reflected more questions on higher-order level at 31% and 29% respectively but the papers were less challenging at 41% and 44%. Therefore the DBE 2014 final paper is significantly more difficult than the DBE 2014 exemplar and DBE 2013 paper. This suggests that learners will experience the 2014 final paper as significantly more challenging than the 2013 and 2014 exemplar papers. Hence the team believes that the overall performance in 2014 will decline when compared to the DBE 2013 results.

Although the DBE 2012 paper has a very difficult component (1%), the overall degree of difficulty is considered to be similar to 2014 paper. This means that learners will

experience the 2014 paper as having similar challenges as compared to the 2012 paper. The team's view is that the overall performance in 2014 will be more consistent with the DBE 2012 results.

Fewer learners at the bottom end of the scale will pass the 2014 paper compared to other previous papers while less A symbols will be achieved in 2014 due to the increase in the degree of difficulty. It is believed that in 2014 the average learner will attain lower marks than in 2013 due to less easy and medium type questions in the 2014 paper.

2.2: Business Studies – Department of Basic Education

Subject: Business Studies

1. COMPLIANCE WITH CAPS

A. Compliance with format and structure

(i) Names of examination papers

This report provides an analysis of NSC examination question papers for Business Studies Grade 12 of the Department of Basic Education (herein referred to as DBE papers). DBE November 2012; DBE November 2013; DBE Exemplar 2014; and DBE November 2014.

1.1 Format and structure

The format and structure of the 2014 DBE Exemplar and November 2014 papers complies with the requirements in the Business Studies Examination Guidelines for Grade 12 - 2014 document, suggesting a 3 hour paper of 300 marks divided into three sections: **Section A** (40 marks, 30 min) is compulsory and consists of 20 short questions; **Section B** (180 marks, 90 min) candidates choose any THREE questions in this section. (60 marks x 3 questions) **Section C** (80 marks, 60 min) is a choice of TWO out of FOUR essay questions (DBE, 2014: 2). **Section A** consists of objective type questions such as multiple-choice questions, words in brackets and matching items. **Section B** has FIVE direct/indirect type questions, candidates have to answer any THREE in this section. This section has direct questions encompassing scenarios, case studies and calculations or numerical presentation. **Section C** has FOUR essay type questions, candidates have the choice to answer any TWO questions of the four questions in this section.

TABLE: 1.1 Format and Structure

NAME	FOCUS/TOPIC	NUMBER	LENGTH
DBE: NOVEMBER 2012	LO1: BUSINESS ENVIRONMENTS LO2: BUSINESS VENTURES LO3: BUSINESS ROLES LO:4 BUSINESS OPERATIONS	1	3 HOURS

DBE: NOVEMBER 2013	LO1: BUSINESS ENVIRONMENTS LO2: BUSINESS VENTURES LO3: BUSINESS ROLES LO:4 BUSINESS OPERATIONS	1	3 HOURS
DBE: EXEMPLAR 2014	TOPIC 1: BUSINESS ENVIRONMENTS TOPIC 2: BUSINESS VENTURES TOPIC 3: BUSINESS ROLES TOPIC :4 BUSINESS OPERATIONS	1	3 HOURS
DBE: NOVEMBER 2014	TOPIC 1: BUSINESS ENVIRONMENTS TOPIC 2: BUSINESS VENTURES TOPIC 3: BUSINESS ROLES TOPIC :4 BUSINESS OPERATIONS	1	3 HOURS

1.2 Cognitive demand weightings

According to the Department of Basic Education in the Curriculum and Assessment Policy statement (CAPS) document, cognitive demand encompasses: knowledge and comprehension at level 1 & 2 with percentage of task = (30%); Application and analysis at level 3 & 4 with percentage of task = (50%); and synthesis and evaluation at level 5 & 6 with percentage of task = (20%) [CAPS DoE, 2011: 45].

Table: 1.2 Comparison of cognitive demand weightings specified and percentages for the paper(s) analysed

PAPER	Cognitive level		
	L1 & L2 Knowledge and Comprehension	L3 & L4 Application and Analysis	L5 & L6 Synthesis and Evaluation
DBE:2012	35%	40%	25%
DBE:2013	39%	37%	24%
DBE: EXEMPLAR 2014	48%	26%	26%
DBE: November 2014	60%	15%	25%

According to the team's analysis the DBE November 2014 paper indicates cognitive demand levels as indicated above which are categorised as knowledge and comprehension 60%; application and analysis 15%; synthesis and evaluation 25%.

The paper deviate from the required weighting in this regard the paper cognitive demand weightings for knowledge and comprehension (i.e. L1 & L2) has increased by 30% , for application and analysis (i.e. L3 & L4) has decreased by 35%, and for synthesis and evaluation (i.e. L5 % L6) has increased by 5%.

TABLE 1.3. Comparison of topic or content and/or skill weightings specified with the weightings for the examination paper

PAPER	MAIN TOPICS			
	TOPIC 1: BUSINESS ENVIRONMENTS	TOPIC 2: BUSINESS VENTURES	TOPIC 3: BUSINESS ROLES	TOPIC 4: BUSINESS OPERATIONS
CAPS	25%	25%	25%	25%
November 2014	27%	27%	27%	19%

According to the analysis, the topic **Business Environments, Business Ventures and Business Roles** has a weighting of 27% each, 2% above the stipulated weighting of 25%. However, there is no significant deviation, from the specified weightings. In comparison the topic Business Operations is 19%, 6% lower than the stipulated weighting of 25%.

1.4 Coverage of examinable curriculum

The examination paper adequately covers all the essential examinable components of the curriculum. There are questions in connection with all the FOUR (4) Main Topics in sections A, B and C of the question paper. The Examination Guidelines (2014) informs the essential examinable components which are the four main topics i.e. Business Environments, Business Ventures, Business Roles and Business Operations. The weighting is 25% for each topic.

TABLE 1.4 Coverage of examinable curriculum

PAPER	TOPIC/LO 1 Business Environments	TOPIC/LO 2 Business Ventures	TOPIC/LO 3 Business Roles	TOPIC/LO 4 Business Operations	RATING
November 2012	25%	29%	25%	22%	100%
November 2013	29%	25%	21%	25%	100%
Exemplar 2014	27%	26%	24%	23%	100%
November 2014	27%	27%	27%	19%	100%

All examination papers were able to cover the broad spectrum of the examinable curriculum for Business Studies Grade 12 in all four main topics. All essential knowledge were covered in all these papers and examinable components were covered through different types of questions. According to the CAPS document all Four (4) Main topics should cover 25% of each topic. However, the analysis indicates that Business Operations across years is falling short of meeting the maximum coverage of 25%.

1.5 Points regarding compliance with assessment requirements

All compliance issues regarding specified assessments requirements were met in all examination papers assessed.

2. QUALITY OF EXAMINATION PAPERS

2.1 Invalid sources of question difficulty or ease

NUMBER OF QUESTIONS ASSESSED AS HAVING INVALID SOURCES OF DIFFICULTY/ OF EASE:

PAPER	DIFFICULTY	EASE
DBE: 2012	6	
DBE:2013	2	
DBE: EXEMPLAR 2014	14	
DBE: November 2014	32	

Explanation of invalid sources of difficulty according to the analysis of the team:

For examination paper **DBE: 2012**

- Question 2.1: The level of detail required in the answer is unclear. Two questions are posed in one question. The amount of guidance in terms of how much to write for each is unclear in the mark scheme/memo and this in itself contributes to the difficulty.
- Questions 3.2.3: Not stated in the examination guidelines. The question is testing concepts that are hardly mentioned in the exam guideline. Learners will possibly have no prior knowledge and this is the difficulty.
- Question 4.4.2: The question is assessing subject knowledge that learners are unlikely to have the opportunity to learn. The difficulty lies in trying to formulate an answer from limited if not any knowledge and the time spent on trying to do so.
- Question 4.5: The question posed suggests a wide range of alternate answers which is not stated in the memorandum. The learner experiences difficulty in trying to choose which answer is appropriate for the question.
- Question 4.6: The word "analyse" in the question is outside the learners understanding of "analyse" as posed.
- Question 8: The memorandum spells out a slightly different expectation to the question posed. Learners spent time formulating answers which can be marked wrong by the marker

For examination paper **DBE: 2013**

- Questions 3.5 and 4.3.2: The memorandum spells out an expectation to a slightly different question, not the actual question. Learners responses may be marked wrong if they do not provide the answers in the memorandum.

For the **DBE: 2014 Exemplar examination paper**

- Questions 2.1.3 and 2.5: These questions are testing concepts that are hardly mentioned in the exam guideline. Learners will spend unallocated time in trying to formulate an answer.
- Questions 2.1.4, 3.4.3, 5.1.2, and 6.6.4: These questions, the way they are formulated candidates might follow up from the previous question. The difficulty in these questions are if the previous section of the question was answered incorrectly the error is carried forward to the next question, thereby answering the question incorrectly.
- Question 2.6, 3.6.2, 4.2, and 6.4: The way the mark scheme or memorandum is structured there is a slight expectation as compare to what questions demands. The question is open but the memorandum is closed learners responses may be marked wrong if they do not provide the answers in the memorandum
- Question 2.3, 3.5, and 5.2: These questions have dense presentation of information, which might be confusing. Learners/candidates may be distracted by having to read and understand what the core question is. The exam guidelines do not mention "roles". Unfamiliar words in the content can also contribute to learners difficulty
- Question 4.6: According to the mark scheme/memorandum and the question the two are incongruent. Learners may have difficulty in determining how many points to write
- Question 9: In this question there is no mark scheme for the different sub-questions. Learners find difficulty in adequately responding to the question in terms of content. Time is spent by learners writing answers that may be too little or too much as there is a maximum mark, which is only indicated in the memorandum.

For the **DBE: 2014 November examination paper**

- Question 2.1.3: relies on the answer to 2.1.2 can lead to follow-on-errors.
- Question 2.1.4: Candidates are expected to select relevant and appropriate information from what they have learnt for their response.
- Question 2.4.2 relies on the answer to 2.4.1 can lead to follow-on-errors.
- Question 3.5.3: the question requires candidates to work through steps to arrive at an answer. It requires learners to use a high level of mathematical manipulation.
- Question 3.5.4: the question requires candidates to work through steps to arrive at an answer. It requires learners to use a high level of mathematical manipulation
- Question 3.5.5: the question requires candidates to work through steps to arrive at an answer. It requires learners to use a high level of mathematical manipulation

- Question 4.1.1: two operations are assessed. Candidates are expected to identify unethical business practices and suggest a business strategy.
- Question 4.1.2: two operations are assessed. Candidates are expected to identify unethical business practices and suggest a business strategy
- Question 4.1.3: two operations are assessed. Candidates are expected to identify unethical business practices and suggest a business strategy
- Question 4.3: not stated in examination guideline. As distinguishing between grievance and conflict.
- Question 4.6.1: the memorandum spells expectations that are slightly different from the question. The memorandum refers to NGT (nominal group technique). The question is open but the memorandum response is closed.
- Question 4.6.2 relies on the answer to 4.6.1. Can lead to follow on errors.
- Question 4.7.3 the question is testing obscure unknown facts not mentioned in the examination guideline.
- Question 5.2.1: the question is phrased in a complex manner.
- Question 5.3.2: The cognitive verb used in "justify" pitches the question to a higher cognitive level. The same question can pitch at a different cognitive demand using different cognitive verbs.
- Question 5.3.3: The cognitive verb in the question "proposes". On the memorandum "placement procedures are merely listed.
- Question 5.3.4 (a): The cognitive verb in the question is "advise". On the memorandum "contents of the legal requirements" are merely listed.
- Question 5.3.4 (b): The cognitive verb in the question is "advise". On the memorandum "contents of the legal requirements" are merely listed.
- Question 6.1.2: the response to this question requires explanation of complex ideas which makes the question difficult.
- Question 6.5: the memorandum spells out expectations that are slightly different from the question. The memorandum refers to advantages and disadvantages.
- Question 6.6: the memorandum spells out expectations that are slightly different from the question. The memorandum refers to advantages and disadvantages.
- Question 7.2: the memorandum spells out expectations that are slightly different from the question. The memorandum refers to advantages and disadvantages.
- Question 7.3: The question requires complex ideas.

- Question 8.2: The question assesses advanced content which tests candidates content of theoretical issues and they have to apply to a particular context.
- Question 9.2: The memorandum spells out expectations that are slightly different from the question. The memorandum refers to advantages and disadvantages.
- Question 9.3: The question assesses advanced content which tests candidates content of theoretical issues and they have to apply to a particular context.
- Question 9.4: The question requires candidates to assess inferential application of knowledge or that requires students to take ideas from one context and use it in another.
- Question 10.1: The requires candidates to unpack a large amount of information for their response. The presentation of this question is in a dense form where too many points are packed in the question.
- Question 10.2: the memorandum spells out expectation that is slightly different to the question. The memorandum focusses on the impact.
- Question 10.3: This question requires candidates to assess inferential application of knowledged or that require candidates to take ideas from one context and use it in another.

2.2 Other points regarding the quality of the examination

The language level of all the papers are of an acceptable standard and the format of the questions are also in line with the relevant documents. The contextualization of questions is also according to the LO"s and assessment standards of the SAG and Examination Guidelines 2009 and the Main Topics in the CAPS document. The appropriateness of stimulus material for the questions is up to standard. The adequacy and accuracy of the marking memorandum of each paper is fine. However, language accessibility for the average learner might be problematic, because the cognitive verbs used in the paper pitched the language of the paper at an alleviated level. For example this might cause problems to the interpretation of an average level.

Most of the DBE questions use the cognitive verbs that pitched at the highest cognitive demand (e.g. critically evaluate and/or evaluate), whereas the answers in the memorandum does not speak to the question posed as they merely reflect on listing the advantages and disadvantages, which makes the question to appeal at the lowest cognitive demand. For examples Question 7 DBE November 2014; Question 6.6 DBE November 2014; Exemplar Question 2.6; Question 3.6.2; Question 6.4, etc.

2.3 Rating the quality of examination papers

PAPER	Very Poor	Poor	Good	Very Good	Excellent
DBE: 2012			✓		
DBE:2013			✓		
DBE: EXEMPLAR 2014			✓		
DBE: November 2014			✓		

3 STANDARD OF THE EXAMINATION PAPERS

3.1 Levels of difficulty

Percentage of marks awarded to different levels of difficulty in examination papers

PAPER	EASY	MODERATE	DIFFICULT	VERY DIFFICULT	Invalid
DBE:2012	29%	27%	36%	8%	
DBE:2013	24%	30%	44%	2%	
DBE:EXEMPLAR 2014	18%	48%	17%	16%	1%
DBE: November 2014	12%	32%	46%	2%	8%

DBE: 2012 and 2013

According to the analysis, the level of difficulty in the examination paper is of a very difficult level at 36% (2012) and 44% (2013) of the weighting. This problem solving category, which encompasses advanced analytic skills, application of information in a new and unfamiliar context, synthesis and evaluation is 16% (2012), 24% (2013) more items than suggested in the Subject Assessment Guidelines.

The very difficult level (application type questions eg. correlation with practice, justification with reasoning, make predictions etc) is least weighted 8% (2012), 2% (2013) in the paper.

DBE: EXEMPLAR 2014

According to the analysis 48% of the weighting of the examination paper is heavily pitched at moderate level. This includes questions of more advanced application, interpretation and low-level analysis. The weighting of 48% has 2% less items of the suggested 50% in the Subject Assessment Guidelines. This paper can be leaning towards a moderate level of difficulty.

DBE: November 2014

According to the analysis team, the November 2014 paper is of a very difficult level at 46% of the weighting. What makes the paper to be difficult is a number of cognitive verbs at the cognitive demand are used at L1 & L2 (i.e. knowledge and comprehension) which equals to 60%; application and analysis 15%; synthesis and evaluation 25%. This makes the paper difficult for the average learners. For example Questions appeals to the highest cognitive demand: 2.2.2, 5.2.1, 5.2.2, 5.2.3, 6.5, 6.6, 7.3, 9.2, 9.4, 10.2, and 10.3 which is cognitive demand level 6. The following questions appeals to level 5 of cognitive demand: 4.1.1, 4.1.2, 4.1.3, 5.3.3, 5.3.4 (a), 5.3.4 (b), 6.1.2, and 9.3.

3.2 Examples of questions at each level of difficulty

PAPER	LEVELS OF DIFFICULTY			
	EASY	MODERATE	DIFFCULT	V.DIFFICULT
DBE: November 2014				
Question 1.1.4	✓			
Question 2.1.1	✓			
Question 3.3		✓		
Question 6.3		✓		
Question 3.5.4			✓	
Question 6.6			✓	
Question 7.				✓

Examples of questions at each level:

1.1.4 Which ONE of the following will most likely be included in a salary advice?

- A Property rates
- B Housing allowance
- C Electricity payment
- D Bank charges

2.1.1 What does the acronym *NCR* stand for?

3.3 Discuss any **FOUR** benefits provided to employees by the Unemployment Insurance Fund (UIF).

6.3 Discuss ways in which managers can deal with difficult employees who may have different personalities.

3.5.4 Determine the amount that Peter will have to pay on his loan to Standard BANK AT 18% p.a. compound after three years (Show ALL yours workings.)

6.6 Evaluate a non-profit company (NPC) as a form of ownership.

7. As a legal adviser, provide a detailed analysis of the Consumer Protection Act (CPA)

to the local business forum. You must include the following aspects in your analysis:

- Discuss any **FOUR** consumer rights as stipulated in the CPA
- Critically evaluate this Act's impact on businesses and consumers
- Recommend practical ways/procedures that businesses should implement to comply with this Act

3.3 Number of stimulus/source material analysed

Paper	EASY	MODERATELY CHALLENGING	DIFFICULT
DBE: 2012	6	1	
DBE:2013	6	1	
DBE: EXEMPLAR 2014	9	1	
DBE: November 2014	7	1	1

These number of stimulus or source material referred to above are drawn from the casestudies used in the examination paper. The language used for easy sources is simple for an average learner and the length of stimulus source is not condense. The moderately challenging scenario given is moderate for both the 80% learners and the 30% average learner, is moderate because language used is accessible, however, the understanding of the case study in relation to answering Question 4.6.1 can confusing. Confusing part in this question is "applying the technique". Question 3.5 has a difficultt stimulus because there are three set of knowledge elements or operation in this question.

3.4 Other points regarding the standard of the examination

Generally the question papers relatively included all the levels of difficulty but there is room for improvement. The standard of examination in terms of choice of questions that candidate could choose from for example the DBE 2012 and 2013, learners could only choose from Section C. However, the improvement of standard for Exemplar and DBE November 2014 candidates have choice from Section B that has a miscellaneous question that includes all main topics and Essay questions.

4 RECOMMENDATIONS FOR IMPROVING THE QUALITY AND STANDARD OF THE EXAMINATIONS

The following is recommended

- That essay questions could be breakdown into knowledge operations or concepts of focus.
- That questions which have two knowledge operations but one mark must be detailed to show the different marks for the different operations, especially in Section B.
- That the DBE Business Studies should consider Paper 1 and Paper 2, because the amount of work in the current format is having an impact on the standard of the examination
- For Paper 1 we recommend that it should have Section A and B, Section B will have Five questions and candidates could choose Three questions. A separate paper will allow a sufficient reading time, when choosing questions.
- That papers should have equal weightings of cognitive demand and level of difficulty
- That for Paper 2 there should be Four questions and candidates choose Two.
- That language should be toned down and made more accessible for the average learner, the examiners should be careful about construction of cognitive verbs used.
- That Exemplar should be a guide in terms of what the candidates should expect, this is drawn from the 2014 exemplar which was significantly different from the final November paper. The cognitive verbs used in the Final paper and the exemplar were different, however, the structure and format were similar.
- When using optional questions, there needs to be a fairly even spread of marks across optional questions in terms of the guidelines of CAPS of easy (Basic thinking skills) (30%), moderate (Moderately high thinking skills) (50%) and difficult (Higher-order thinking skills) (20%).
- Essay questions with sub-questions should have a mark guideline next to each sub-question. This guides learners in the length of their answers.
- Avoid formulating a question which poses two questions with one mark scheme eg.(Exemplar 2014 4.6)
- Questions from the exam guideline must be “directly” in the content of the exam guideline. An example of an indirect content is “Distinguish between limited liability and unlimited liability” (Exemplar 2014 3.2).

- The memorandum must state all possible accurate answers to a question. The accuracy of answers should not be left open to the knowledge and discretion of the marker.
- Testing using "Follow-up" questions need to be reconsidered in terms of difficulty for the learner.
- Questions set from the content "recap" from grade 10 and 11 could be challenging in terms of the weighting of the "recap" content (all content is examinable).

Good model for future examinations (use)

- Most questions in the DBE: November 2014 can be used in future and all FOUR main topics are covered in all sections.
- However, the cognitive verbs need to be toned down to accommodate an average learner.
- The format of the DBE: November 2014 is a good model for future use especially section B, that consist of five questions of which learners must answer three. It gives learners a good chance to pass the examination.

5 COMPARABILITY OF EXAMINATION PAPERS

5.1 Comparability of quality

PAPER	RATINGS
DBE: 2012	Good
DBE:2013	Good
DBE: EXEMPLAR 2014	Good
DBE: November 2014	Good

The previous DBE examination papers, the 2014 exemplar, including the November 2014 are rated Good in all respects. The exemplar and Final November 2014 papers, gives candidates a choice from five questions in Section B, each question in this Section Four questions are concentrated on a particular Main topic and One question is miscellaneous topics. We would therefore rate the quality as better than the previous years papers (i.e. 2012 and 2013).

5.2 Comparability of standards

The overall performance trends in Business Studies, shows the standard of the examination papers are improving constantly to accommodate an average learner and 80% learner. The nature and format of the paper shows that the overall performance would significantly improve.

However, the extensive use of high pitched cognitive verbs, in the Final November 2014 paper might impact on the overall performance of candidates. There should be

an equivalence of in terms of cognitive demand weightings as recommended in the CAPS document (i.e. 30%, 50% and 20%).

2.3: Economics – Department of Basic Education

Subject: DBE ECONOMICS

Introduction

This Post-exam analysis report presents the findings of the team of evaluators for the subject Economics.

The team leader led a discussion and review of the instrument and its application in an attempt to maintain consistency with the instruments application.

A rigorous analysis procedure that entailed a careful scrutiny of the examination question papers as well as the marking memoranda was undertaken. Each team member first conducted an independent individual analysis of each paper. The team then engaged a question by question interrogation. Each item was carefully evaluated and notes were made with regard to uncertainty, ambiguity and prejudice.

A fine-grained analysis of each item was conducted to ascertain its appropriateness, clarity, suitability, cognitive demand, level of difficulty, as well instances of invalid difficulty. The marking memorandum provided was also used to inform the analysis and classification of each question. There were instances where team members disagreed on the classification of certain questions. The team leader allowed members to argue requesting clear justification for the claims they had made about certain questions. These deliberations provided useful insights as to how different questions might be interpreted by learners. In many cases the marking memorandum provided evidence of the cognitive level that was being assessed.

1. Compliance with the CAPS and/or relevant assessment body.

1.1 Format and structure

The following table indicates the examination papers that were analysed.

Table1: Examination papers under analysis

Paper	Marks	Duration
DBE 2012	300	3hrs
DBE 2013	300	3hrs
DBE 2014 (P1)	150	1.5hrs
DEBE 2014 (P2)	150	1.5hrs

The DBE papers 1 and 2 for 2014 comply with the structure and format as suggested in the CAPS.

The format and structure are in order.

1.2 Cognitive demand and weightings

In table 2 below a comparison of the cognitive demand weightings of the 2014 papers and the specifications of the CAPs is presented.

Table 2: Comparison of cognitive demand weightings

Cognitive demand	CAPS %	DBE 2014 P1	DBE 2014 P2	Combined
L1 and L 2	30%	47%	68%	57%
L3 and L4	40 %	48%	23%	36%
L5 and L 6	30 %	5%	9%	7%

From the above table it can be seen that the percentage distribution of questions across the cognitive levels is a marked deviation from the prescribed expectations of the CAPS for both the DBE (combined) papers. While the CAPS prescribes a 30:40:30 proportional distribution of L1&2:L3&4:L5&6, the analysis reveals a rather skewed DBE combined ratio of 57:36:7. In essence then, there appears to be a heavy loading of questions in the level 1&2 cognitive category at the expense of the other two levels. Level 5&6 in particular is a cause for concern as it is under-represented by as much as 23%. The conclusion then is that the standard of the papers is below that which the CAPS prescribes.

There is a similar distribution in terms of cognitive demand loading across both examining bodies' papers.

1.3 Topic or content and/or skills area weightings

In the table below, the topic weightings are provided. The economics curriculum is divided equally into 4 broad topic areas with each topic area allocated 25% of the total.

Table 3: Comparison of the topic or content and/or skill weightings specified with the weightings for the examination paper(s)

Topic/Content	CAPS %	2014 DBE P1	2014 DBE P2	2014 DBE Combined
Macro Economics	25%	56%	0%	28%
Micro Economics	25 %	0%	50%	25%
Economic Pursuits	25 %	44%	0%	22%
Contemporary Economic Issues	25%	0%	50%	25%

There is an acceptable distribution of questions in the combined DBE papers across the four major topic areas in the economics curriculum.

1.4 Coverage of examinable curriculum

Table 4 presents data on the coverage of examinable curriculum in each paper.

Examination papers	100% coverage	90-100%	80-89%	70-79%	Under 70%
DBE November 2014 Paper 1		X			
DBE November 2014 Paper 2		X			

The DBE papers covered over 90% of the curriculum.

2. The quality of the examination papers

2.1 Invalid sources of question difficulty

Table 5: Number of questions assessed as having invalid sources of difficulty of ease.

Paper	Question	Explanation
DBE P1	<p>2.4 Compare a free floating exchange rate system with a managed floating exchange rate system. (8)</p> <p>3.1.2 Why are economic indicators important to the government? (2)</p> <p>3.3.3 Explain the message depicted in the cartoon. (2)</p> <p>4.2.2 Explain the message depicted in the cartoon. (2)</p> <p>4.2.3 Why is South Africa regarded as the gateway to Africa. (2)</p>	<ul style="list-style-type: none"> • Question was asking for a comparison but memo is explaining the two concepts separately – no comparison. • Mark allocation is inadequate; question is open to a wide variety of answers. Suggestion if the question can start by “ State one reason • Question is an open question that suggest lengthy answers this could disadvantage students with longer responses than required. • Same concern as above question (3.3.3) • Mark allocation does not match the expectations of the question.
DBE P2	2.2.1 Explain the term toll. (2)	<ul style="list-style-type: none"> • Question is not testing economic knowledge.

	<p>2.2.4 Argue in favour of the implementation of toll roads. (4)</p> <p>2.3.2 How many units will be produced at the maximum point? (1)</p> <p>3.1.2 How can tourism influence the lives of poor people near tourist destinations? (2)</p> <p>3.2.3 How can people reduce transport fuel consumption in order to sustain the environment? (2)</p> <p>3.3.2 Why is weighting of items in the basket of goods important? (2)</p> <p>3.3.3 Why would you exclude food from the CPI basket when calculating core inflation? (2)</p>	<ul style="list-style-type: none"> • Model answers in the memo are general knowledge. (Argue is a higher order question and answers are a simple explanation) • Answer depends on learner getting previous answer correct. • Mark allocation inappropriate. (same as DBE P1 3.1.2) • The question is about everyday knowledge rather than economic knowledge. • Mark allocation inappropriate and question is open to a variety of answers. • Mark allocation inappropriate and question is open to a variety of answers.
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There are several instances cited in the table where the mark allocation is inappropriate to the type of question asked. Such questions require longer explanations than the mark allocation suggests and may result in learners spending more time than is necessary on these questions.

2.2 Other points regarding the quality of the examination

In table 6 below, examples of good questions/models are presented.

DBE 2014 P1	DBE 2014 P2
Q2.4. (8 marks)	Q4.3.4. (4 marks)
	Q5. 26 marks
	2.5. 8 marks

2.3 Rating the quality of the examination papers

Table 7 presents the team's ratings of the quality of the examination papers.

Paper	Rating of examination paper
DBE 2014 P1	Satisfactory
DBE P2	Satisfactory

While the team is of the view that the quality of the examination papers are improving from year to year, there are still several areas that need to be considered as detailed above. These are high-level national examination papers that necessarily demand a high level of rigor in their preparation.

3. Standard of the examinations

3.1 Levels of Difficulty

Table 8 below presents the levels of difficulty of the examination papers under study.

PAPER	LEVELS OF DIFFICULTY			
	L1	L2	L3	L4
DBE 2014 P1	24%	54%	19%	3%
DBE 2014 P2	25%	50%	17%	8%
DBE COMBINED P1&P2	25%	52%	18%	5%
DBE 2013	31%	28%	29%	12%
DBE 2012	33%	31%	36%	0%
Exemplar 2014	23%	40%	30%	7%

The Combined DBE (P1 & P2) have a 25%, 52%, 18% and 5% spread of questions across Difficulty Levels 1, 2, 3 and 4 respectively. The team is of the view that the very difficult category is under-represented and should be between 10 and 15% of the total paper. This is important to distinguish the high achievers.

In comparison to previous years, Difficulty level 4 has dropped from 12% in 2013 to 5% in 2014. Difficulty level 3 has consistently dropped from 36% in 2012 to 29% in 2013 to 18% in 2014. Difficulty level 1 has been inflated (at 52%) in 2014 from 28% and 31% in 2013 and 2012 respectively. Difficulty level 1 has decreased from 33% and 31% (2012 and 2013) to 25% in 2014. Below average learners (30% candidates) are likely to perform worse in the 2014 examination as compared to the 2013 and 2012 examinations. The 2014 paper does not have sufficient questions to distinguish the high achievers (80% candidates).

The exemplar paper appeared to have a better distribution of questions across difficulty levels 2-4.

Optional questions

Table 9: Comparison of Marks for Levels of Difficulty in optional questions in Section B and Section C for DBE P1

DBE 2014 P1	DL 1	DL 2	DL 3	DL 4	Total
Section B					
Question 2	10	17	13	0	40
Question 3	8	24	0	8	40
Question 4	12	18	10	0	40

Section C					
Question 5			30	10	40
Question 6			30	10	40

In Section B of P1, learners can choose two out of three questions. The distribution of questions across difficulty level 1 is fairly comparable for these three optional questions, ranging from 8 to 12 marks. For difficulty level 2, questions 2 and question 4 are comparable (17 & 18 marks), while question 3 has 24 marks at this level. Questions 2 and 4 have no questions at difficulty level 4, while question 3 has no questions at difficulty level 3. There is thus unevenness in the levels of difficulty across optional questions.

In Section C, learners choose one out of two questions. Both questions have identical difficulty loading.

Table 10: Comparison of Marks for Levels of Difficulty in optional questions in Section B and Section C of paper P2

DBE 2014 P2	DL 1	DL 2	DL 3	DL 4	Total
Section C					
Question 2	7	27	6	0	40
Question 3	10	30	0	0	40
Question 4	8	24	0	8	40
Section C					
Question 5		4	26	10	40
Question 6		30	0	10	40

In Section C of P2, learners choose two out of three questions. Marks allocated to questions at difficulty level 1 are comparable for each question. For difficulty level 2, there is a degree of unevenness with Q2 at 27 marks, Q3 at 30 marks and Q4 at 24 marks. Difficulty level 3 was only tested in 2 (6 marks) and difficulty level 4 was only tested in Q4 (8 marks).

There was clearly unevenness in the difficulty levels being tested in this section.

In Section C, learners are expected to choose one out of two questions. Q5 has 26 marks at L3 and 4 at L2. Q6 has 30 marks at L2 and none at L3. Both questions have 10 marks at L4. This is also a section in which there is unevenness in the choice questions.

3.2 Typical questions at different difficulty levels

Table 11 below presents examples of questions at the four difficulty levels:

Levels of difficulty	DBE 2014 P1	DBE 2014 P2
Easy	4.3.2. Define the term GDP. 2 marks	3.2.1. What are resources that can be replaced called?

		2 marks
Moderate	4.4. Discuss the economic indicators relating to productivity. 4 marks	2.3.3. Determine whether the business is making an economic profit or an economic loss. Show all calculations. 4 marks.
Difficult	2.5. Discuss the multiplier and its effect on the national income if the marginal propensity to consume (MPC) is 0,6 and investment increases by R 10 bn 8 marks	4.5. What are the effects of the implementation of minimum wages in South Africa? 8 marks
Very Difficult	3.5. Analyse population growth and life expectancy as social indicators relating to demographics. 8 marks	5.2. In your opinion, does the competition Act of South Africa promote fair competition? 10 marks.

3.3 Difficulty of stimulus/source material

Table 12: Number of stimulus/source material analysed as easy, moderately challenging and difficult.

Name of paper	Difficulty of stimulus material				Total
	Easy	Moderately difficult	Difficult	Very difficult	
DBE 2014 P1	3	2	1	0	6
DBE 2014 P2	3	1		0	4

DBE P1 contains 6 stimulus pieces, 3 of which were deemed easy and 2 moderately difficult and one difficult. Learners would not have experienced any serious challenge in making sense of the stimulus material. Paper 2 had 4 pieces, 3 of which were deemed easy and one moderately difficult.

4. Recommendations for improving the quality and standard of the examinations

4.1 Recommendations for improving the quality of the examinations:

4.1.1 Invalid sources of difficulty were present in the papers of both examining authorities. The combined DBE papers had 11 instances of invalid difficulty. The specific explanation for each of these was tabled in section 2 above.

4.1.2 Uneven cognitive demand and levels of difficulty across choice questions is a recurring feature in both the DBE examination papers. Examiners need to pay particular attention to this aspect in future papers if they want to continue to set optional/choice questions.

4.2 Recommendations for improving the standard of the examination

4.2.1 The cognitive demand distribution of the papers

reflects a heavy loading at cognitive levels 1 & 2 (over 50%) and a weak loading at levels 5 & 6 (under 10%). The testing of high level cognitive demand is clearly a neglected aspect in all papers, and as such does not provide a sufficient scope of questions that will distinguish high achieving students.

4.2.2 The distribution across the levels of difficulty for the combined DBE papers indicates that just over half the questions in the examinations were classified as moderately difficult category, (52%). Only 5% of the DBE examination questions were categorised as very difficult for the average grade 12 learner.

While the distribution of questions across the levels of difficulty is fairly even for the first three categories of difficulty, questions in the 'very difficult' category are under-represented (4%).

The consequence of this is that the papers are unable to effectively distinguish high achieving learners. Examiners have to pay attention to this crucial aspect of the papers.

- 4.3 While the team feel that the quality and standard of the examination papers are improving marginally each year, the current papers are not good models for future examinations for the reasons cited above. The DBE examination papers could avoid the annual challenge of evenness in optional/choice questions by not offering any choices, a structural change (as is the case in the IEB paper). This will also avoid time wasting by learners as they deliberate/decide on which questions to choose and the possibility of learners attempting ALL questions hoping that the markers will choose the best answered questions.

4.4 Arguably the strongest critique of the DBE papers is that there are insufficient questions that test actual **economic knowledge and economic principles and their application.** There are in fact several questions in these papers that tested 'everyday knowledge' which non-economics students could easily have answered. Examples of these are Q1.1.4, 2.2.1, 2.2.4, 3.2, 3.3, 4.2.

5 **Comparability of examination papers** (Maximum number of words: 2 500 words)

Use the headings:

5.3 Comparability of quality

Comparing overall quality

Table 13: Comparability of overall quality of 2014 examinations relative to other exams

Paper	Much worse	Worse than	Equivalent to	Better than	Much better
DBE 2012				x	
DBE 2013			x		

The team struggled to make this judgement as there were strong and weak aspects of all the papers. The view of the team was that the DBE 2014 paper was comparable to the DBE 2013 and 2012 papers.

5.2 Comparability of standards

Comparison of Cognitive Demand distribution across all papers under review

The table below provides comparative data for all papers.

Table 14: Comparison of cognitive demand across all examinations under review

PAPERS	LEVELS OF COGNITIVE DEMAND		
	CL1&CL2	CL3 & CL4	CL5 &CL6
DBE 2012	89%	7%	4%
DBE 2013	69%	17%	14%
COMBINED 2014 P1&P2	57%	36%	7%

All papers appear to be loaded at cognitive levels 1 & 2. The DBE 2014 papers are under-loaded at cognitive levels 5 & 6. Cognitive levels 3 & 4 is 6% higher than the DBE guidelines while cognitive levels 1 & 2 have 27% more questions than expected. Note though that the percentage of questions at this level have decreased from 69% in 2013 to 57% in 2014.

Comparing levels of difficulty for each examination paper.

Table 15: Comparing levels of difficulty of all examination papers.

PAPER	LEVELS OF DIFFICULTY			
	L1	L2	L3	L4
DBE 2012	33%	31%	36%	0%
DBE 2013	31%	28%	29%	12%
DBE 2014 COMBINED P1&P2	25%	52%	18%	5%

In terms of the distribution of questions across the levels of difficulty, the data indicates the DBE 2014 Combined P1 & P2 is heavily loaded at difficulty level 2 (moderately difficult), an increase of 24%. Difficulty level 3 has dropped from 29% to 18%. Questions

at the easy level have decreased by 6%. Similarly, questions at the very difficult level have dropped by 7%.

From the data in the two tables above, a distinct finding is that the number of questions that distinguish the 80% candidates have decreased. The inference from this is that (*ceteris paribus*) there is likely to be an increase in the number of candidates at the top end (80+% candidates).

Below average learners (under 30%) candidates are likely to be worse off in 2014 than the 2013 candidates. The 30+% candidates are likely to perform better in 2014 than their 2013 counterparts.

2.4: Geography – Department of Basic Education

SUBJECT: GEOGRAPHY

1. Compliance with the CAPS

1.1 Format and structure

Table 1 below compares the format and structure of each paper with the specification pertaining to the examination. It shows that all the papers analysed complied with the requirements of the NSC in the NCS and under the CAPS in terms of the broad structure of the papers.

Tale 1: Format and structure of papers analysed			
Name and number	Focus area	Duration	Total marks
NCS requirements			
Paper 1	Theory	3 hours	300
Paper 2	Map and photo work and GIS	1.5 hours	100
NCS papers analysed			
DBE Paper 1 2012	Theory	3 hours	300
DBE Paper 2 2012	Map and photo work and GIS	1.5 hours	100
DBE Paper 1 2013	Theory	3 hours	300
DBE Paper 2 2013	Map and photo work and GIS	1.5 hours	100
CAPS requirements			
Paper 1	Theory	3 hours	225
Paper 2	Map and photo work and GIS	1.5 hours	75
CAPS papers analysed			
DBE Paper 1 Exemplar 2014	Theory	3 hours	225
DBE Paper 2 Exemplar	Map and photo work and GIS	1.5 hours	75
DBE Paper 1 October 2014	Theory	3 hours	225
DBE Paper 2 October 2014	Map and photo work and GIS	1.5 hours	75

The team felt that the format and structure of the papers was adequate, but has some additional comments in this regard in the recommendations section of this report.

1.2 Cognitive demand weightings for the 2014 October papers

Table 2 below shows the cognitive demand weightings for the October 2014 examination papers compared with the weightings specified in the CAPS for the NSC examinations. No distinction is made in the policy document in the weightings for the different papers – only the weightings for the examination as a whole are given. However, the Umalusi instrument generates cognitive demand weighting for each paper, and so these are shown in Table 2, as well as the weighting for the examination as a whole (both papers combined).

<i>Table 2. Comparison of cognitive demand weightings specified and the percentage for the paper(s) analysed</i>			
	Lower order Knowledge/ remembering	Middle order Understanding/ Applying	Higher order Analysing/Evaluating/ Creating
Specified in the CAPS	25%	50%	25%
2014 Paper 1	38,3	31,6	30
2014 Paper 2	18,6	33,3	48
The examination as a whole (375 marks)	34	32	33,6

From Table 2 it is clear that neither paper, nor the examination as a whole complies with the weightings per cognitive order specified in the CAPS. Paper 1 and the examination as a whole are both overweighted in the lowest order while Paper 2 is underweighted here. Both papers and the examination as a whole are underweighted in the middle order. Both papers and the examination as a whole are overweighted in the highest order, with the overweighting here being most noticeable in Paper 2.

1.3 Topic or content and/or skills area weightings for the 2014 papers

The CAPS does not specify weightings for skills in Paper 1 and so this aspect is not addressed in regard to this paper. There is, however, a clear specification of weighting across the four main content areas for Paper 1 and these are shown per question as specified, together with the weightings found in the 2014 examination in Table 3 below.

The specifications for Paper 2 relate to a mixture of question type and content and skills. These are shown in Table 4, together with the analysis of the weightings across these aspects in the 2014 paper.

Because the constructs used to specify the content/skills of each paper are different, it is not possible to provide an analysis of these across the two papers combined.

Table 3 shows that the weighting of marks across the four main content areas of the CAPS complies with the weighting specified for the NSC examination for Paper 1.

Table 3. Comparison of the topic or content and/or skill weightings specified with the weightings for Paper 1			
Question Number	Topic	Specified no of marks	Actual number of marks
1	Climate and weather, and geomorphology	15	15
	Climate and weather	30	30
	Geomorphology	30	30
2	Climate and weather, and geomorphology	15	15
	Climate and weather	30	30
	Geomorphology	30	30
3.	Settlement and economic geography	15	15
	Settlement	30	30
	Economic	30	30
4.	Settlement and economic geography	15	15
	Settlement	30	30
	Economic	30	30

Table 4 shows that Paper 2 complies with regard to the distribution of marks across the specified content, skills and question types.

Table 4. Comparison of the topic/skill/or weightings specified with the weightings for Paper 2		
Conent/skill/question type	Specified number of marks	Actual number of marks

Multiple choice questions	15	15
Map calculations	20	20
Analysis and interpretation of a map and photo, and application of theory	25	25
GIS	15	15

1.4 Coverage of examinable curriculum for all papers analysed

Each paper was broadly assessed with regard to coverage of the curriculum. As can be seen from Table 5, all papers covered at least 75% of the curriculum. The percentage was possibly higher in the DBE 2014 examinations than in other papers analysed because of the reduced amount of content to be examined. To some extent, in Paper 1 of both 2014 examinations, breadth has been favoured above depth.

Name and number	Curriculum Coverage rating		
	100 %	75% - 100%	Less than 75%
Paper			
DBE Paper 1 2012		x	
DBE Paper 2 2012		x	
DBE Paper 1 2013		x	
DBE Paper 2 2013		x	
DBE Paper 1 2014 exemplar		x	
DBE Paper 2 2014 exemplar		x	
DBE Paper 1 October 2014 exemplar		x	
DBE Paper 2 October 2014		x	

Content in the papers was generally compliant with the NCS and CAPS curriculum and the subject and examination guidelines for that curriculum.

However, the 2014 October paper revealed some gaps in the specificity of detail in the curriculum – such as for turbulent and laminar flow (Paper 1, Q 2.2.1) – which are merely stated as topics, with no supporting detail. As a result, some of the textbooks have provided very little information. The question set on this topic had much of the answer in the stimulus material, but learners studying from a textbook that was thin in this area would still have been disadvantaged. There is also a question on fluvial processes (2.2.1) which is not in CAPS beyond Grade 9, but is now in the exam guidelines – the team feels this is an omission in CAPS which should be rectified. As the textbooks were written before the guidelines were published, candidates whose teachers were

working mainly from a textbook might not have covered this aspect of the work, and so will be disadvantaged. There were similar concerns about this mismatch between the CAPS and the examination guidelines and the paper in the exemplar paper, where there was, for example a question on Burgess's model, which is not specified in CAPS.

1.5 Other points regarding compliance with assessment requirements

There were no other points to be made – the papers comply with the requirements.

2. Quality of examination papers

1.1 Invalid sources of question difficulty or ease

Each paper was analysed for invalid sources of difficulty/ease. Only where the question was deemed to be 'difficult' (or very difficult) was any concern about the question, stimulus material or memo recorded with regard to its being an invalid source of difficulty. Where the question was not considered to be 'difficult', concerns related to it are noted in Table 8.

A summary of the number of questions in each paper deemed to provide an invalid source of difficulty or ease is provided in Table 6, and more details are given for each paper in Table 7.

Table 6 Number of questions assessed as having invalid sources of difficulty or ease.		
	Number of questions	Total Marks
DBE 2012 P1	11	56
DBE 2012 P2	0	0
DBE 2012 combined	11	56
DBE 2013 P1	11	66
DBE 2013 P2	1	4
DBE 2013 Combined	12	70
DBE 2014 P1 exemplar	10	44
DBE P2 2014 exemplar	3	4

DBE 2014 combined exemplar	13	48
DBE October 2014 P1	10	37
DBE October P2 2014	3	10
DBE October 2014 combined	13	47

Table 6 shows that for the examination as a whole, the number of questions assessed as having invalid sources of difficulty or ease is slightly higher in October 2014 than in previous end of year examinations, but that the number of marks for such questions has decreased. The total number of questions with invalid sources of difficulty/ease and the total marks for such questions is virtually the same for the 2014 exemplar and end of year examinations.

Table 7. Details of questions assessed as having invalid sources of difficulty or ease and potential impact on candidates' marks				
Paper	Question No	Source of difficulty	Explanation	Potential impact on candidates' marks
DBE 2012				
Paper 1	1.3.5	Stimulus	Diagram is incorrect and learners cannot give a sensible answer. Nothing that has been learnt can be applied in this context.	Learners will be disadvantaged – lower marks
	1.5.3	Expected Response	Two possible answers, yet the memo only credits the easier answer thereby disadvantaging the better candidate who might work with the alternative response.	Disadvantaging the better candidate who might work with the alternative response.
	1.6.2	Expected response	Question is poorly phrased and memo accepts dimension and shapes as answer, yet these are not the same concept. The river is referred to when the question should have asked about the valley.	Learners who try to answer the question as asked will be disadvantaged; those who trot out what they know, will be awarded marks.
	2.4.2	Expected response	Poorly phrased question and does not ask what the memo requires as answer (Maize cob cartoon)	Learners who try to answer the question as asked will be disadvantaged
	2.4.3	Content & Expected Response	Question requires a very specific focus on maize which will not have been dealt with as such. Answer in memo is not answering the question – Question focuses on maize, memo accepts anything related to subsistence farming	Learners who try to deal with the question as asked will be disadvantaged; those who trot out what they know might in fact earn marks.
	2.6.3	Expected Response	Question asks for assessment of negative impact, but memo only	Learners who try to assess the impacts as asked could be disadvantaged, while learners who disregard the task word

			requires a list of negative impacts	and give a list, as in the memo, will be awarded marks.
	3.3.7	Task	Details of the question are confusing. Question is poorly phrased. Question actually is asking how the given activities in the rural-urban fringe contribute to its sustainable development.	Learners are likely to be disadvantaged
	3.5.2	Stimulus and Expected response	Pie slices are not drawn proportional to the values in them; graph does not show profit it shows contribution of costs to final price. Question is asking for biggest contribution to profit, but answer is in terms of contribution of price.	It is possible that learners will not engage all that closely with the material, and will manage to give the intended answer; those who do engage will struggle to answer and might lose marks.
	4.3.1b	Content	Level 3 – concept error. Memo requires a simple answer but in fact the answer is not simple; memo answers unrelated to the question	Learners who try answer as the question as asked might not manage, and so will lose marks.
	4.3.4	Task	Question is very wordy – and detracts from the essence of the question; it relates to inner city blight in developing cities – but memo does not require this focus.	Learners who try to address the focus of the set question might not manage, and will lose marks.
	4.6.5	Expected response	Question does not actually require learners to evaluate – only required to give ways in which industry contributes to the economy.	Learners who try to evaluate the contribution of industry to the economy will spend more time than needed and might lose marks, while those who do not actually address the question but give the answer accepted in memo will likely to manage.
Paper 2	n/a	n/a	n/a	n/a

DBE 2013				
Paper	Question No	Source of difficulty	Explanation	Potential impact on candidates' marks
Paper 1	1.4.4	Expected Response	Memo requires learner to give/state – not explain; most candidates will probably just state and get the marks	Most candidates will probably just state and get the marks
	1.4.6	Expected Response	The question asks for an explanation – memo only requires a statement of facts	Learners who attempt an explanation will not be rewarded for answering the question – and might even lose marks – while those who simply record facts will benefit
	2.4.2	Content & Expected Response	Difficult because the stimulus might be obscure to some learners – not all will pick up on the visual image of pointing fingers; the question also asks	Marks might be lost as learners struggle to interpret the imagery – but the memo might make up for this – again.

			for comment but memo accepts a statement of the main message of the cartoon; cartoons generally difficult for geography candidates.	
	2.4.5	Stimulus	The language in the cartoon is idiomatic and might be inaccessible to the average learner	Lower marks
	2.5.2	Expected response	Memo is incorrect – not a tool for prediction	Marks lost if the memo adhered to.
	2.6.5	Stimulus	Poor diagram – not clear if all 4 diagrams are linked; answer hard to decipher in diagram given – only one of the answers in the memo really applies to the diagram.	Learners might lose marks
	3.5.2	Content	Difficult content that is not taught to learners as such.	Learners will lose marks
	4.3.2	Task & Stimulus	An analogy that must be recognised and interpreted in the cartoon; Government/people labels are the wrong way round.	Learners might lose marks
	4.4.5	Task & Expected response	Question asks about rural settlement pattern, but the memo accepts any impacts of HIV on population; learners have to sift through information and find which applies to rural settlement patterns	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.
	4.6.2	Expected response	A broad question that contains no guidance as to the sort of response; learners likely to try to find a contextual impact, not just 'negatively'.	Learners might lose marks.
	4.6.5	Expected response	Memo does not require same level of difficulty as the question implies.	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.
Paper 2	4.5.2	Task & expected response	Memo has same answer in different format	Weak learners might earn marks, while stronger candidates lose them in trying to actually give more than one answer, as required.

DBE 2014 Exemplar.				
Paper	Question No	Source of difficulty	Explanation	Potential impact on candidates' marks
Paper 1	1.3.6	Expected response	No evaluation required in the memo.	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.
	1.4.3	Task & Expected Response	The comparison required is invalid and the memo does not answer the question at all - and gives far too much info for 1 mark.	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.
	1.5.3	Expected response	Memo refers to discharge, not to flow, which the question asks about. Candidates who give	Candidates who give correct answer will be penalised.

			correct answer will be penalised.	
	1.5.4	Content	Formation of features is in exam guidelines, not in CAPS	Marks likely to be lost
	2.3.4	Content & stimulus	The question is invalid - the cyclone is minor and the memo gives responses as if it were a very intense system	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.
	2.4.3	Expected Response	The memo does not provide an assessment as required by the question; 1st bullet not a correct answer.	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.
	2.4.4	Expected response	The memo gives the same reason in 2 formations and 2 reasons are required by the question.	Marks likely to be lost
	3.3.1	Content	Burgess model not in the curriculum	Marks likely to be lost
	4.4.2	Expected response	Restricted memo - more answers in text than are acknowledged in the memo – social justice issues facing the Skhosanas	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.
	4.6.4	Expected response	The memo does not require an answer to the question set	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.
Paper 2	1.3	Task & Expected response	No answer is correct.	Marks lost unless memo adjusted
	1.12	Expected response	No correct option provided for the learners	Marks likely to be lost
	4.5	Expected response	Memo doesn't answer the question asked.	Weak learners might earn marks, while stronger candidates lose them in trying to actually answer the question set.

DBE October 2014				
Paper	Question No	Source of difficulty	Explanation	Potential impact on candidates' marks
Paper 1	1.3.5	Expected response	1.3.5 Diagram not really needed. Answer does not link to the wind - a katabatic wind does not link to acid rain. Poor choice of task word - memo does not require any evaluation - it is the answer to question ' what is the impact of katabatic wind on farming and settlement; memo full of irrelevant info and unrelated facts - e.g. a katabatic wind does not cause acid rain, or is it linked to asthma or to pollution in a valley causing accidents. It is a valley inversion that is 'causes' the pollution to remain in situ – and the concomitant problems; It is difficult to find 4 facts related to impact of katabatic flow. Expected response ID - answer not the one to Q set.	Learners who try to answer the questions as asked might lose marks.

	1.5.4	Expected response	The question asks for characteristic of a river bed in a graded river - but there is no characteristic of a river bed related to a graded river. Expected response difficulty - answer is indeterminable; memo does not provide and answer to Q set; answer gives consequences of the characteristics, not characteristics - and the characteristic are debatable in any event.	
	1.5.5	Task; Expected response	The question requires learners to say what must happen to lead to graded profile - but profile not ever going to be graded because of the number of hard rock layers; Many answers given in memo are not answers - they are not processes- e.g. the upper course must assume a steeper slope; Task - Context is unrelated / unnatural to the task that candidates have to do; Expected response - incongruity between answers and Q; candidates will lose marks/ large number of marks - 8/75 – many candidates will avoid this this question.	Learners might lose marks.
	2.1.4	Expected response	Content not specified in CAPS for Gr 12 – and in fact, both fog and drizzle could occur at A. Q poorly. Memo too restricting - both options re correct and Q should not set them up as a choice. Expected response - answer indeterminable; rigid memo.	Learners who give the 'wrong' answer might lose marks – perhaps this was dealt with in memo discussion?
	2.1.5	Expected response; stimulus	Expected response - answer indeterminate; Stimulus - insufficient information - no info that enables a correct answer to be confidently given.	Learners might lose marks
	2.4.4	Expected response; stimulus	ID - there are not two answers - one answer in memo invalid. Expected response - one answer is indeterminable from given stimulus - so also stimulus ID.	Learners who look for two answers that are discrete might lose marks.
	2.5.4	Stimulus	Very poor article - hard to know what the answer is. Answer in memo is not in text, though might be inferred from knowledge of factors causing run-off - Easy to come up with one factor - harder to come up with two. Text is not very coherent - what does the 'this' refer to? and which factor relates to run-off and which to evaporation. Stimulus - unclear	Some marks likely to be lost.

			resources - poorly written text - info does not cohere.	
	3.5.6	Expected response	ID - expected answer - Q asks for evaluation - but memo answer is to a question asking: how does unreliable rainfall contribute to food insecurity?.	Learners who attempt to address question directly might lose marks.
	4.1.5	Expected response	Q should not ask for name of settlement - should be asking name of kind of settlement with site as shown by E; expected response - Q asked not one to be answered - but because the Q is poorly formulated - should be 'with reference to its site, give the name of the settlement type found at E	Learners will probably infer what is actually expected, and so will not lose
	4.3.2	Stimulus	Stimulus material inadequate - Q refers learners to there for 2 answers - but there are not two there.	Weaker learners, and stronger learners who try to find answers in diagram will lose marks.
Paper 2	3.4.2/3.4.3	Content; Stimulus	Focus on environ justice issues - which are not in CAPS - a gap. Terminology 'environ injustice' might not be well understood. Problematic number of marks = 8 marks –across the two questions - more than 10% of the paper; ID - stimulus - no info on map to help answer; content not taught at all in mining section for whole of the FET.	More able learners, and English language home will probably manage, weaker learners and those with poor English competency might struggle.
	4.3.2	Task' Stimulus	Difficult - task and stimulus - tree strip not really a buffer zone - ID - expected response - answer is indeterminable - trees given in memo not a buffer zone.	Some learners will lose marks.

The general concerns related to invalid sources of difficulty included the memo giving an answer to a question that had not been asked (usually accepting an answer at a lower level of cognitive demand than required by the question task word), or accepting so many variations that the question in fact became meaningless (this was less of an issue in 2014 October papers than previously, at least before adjustments at the marking discussion); the stimulus material being inadequate in some way or the question not being formulated sharply enough. Most of these are likely to disadvantage learners though, in some cases, learners who do not actually attempt to answer the questions set but put down information related to the question, without attempting to direct it toward an answer, might be awarded marks.

1.2 Other points regarding the quality of the examination

In addition to concerns about language, the format of the questions, and the answers given in the memo noted in Table 7 above as they impacted unintentionally on the difficulty of the question rated as 'difficult', there were similar concerns about the same issues in regard to questions not rated as 'difficult'. These, together with concerns about questions where the stimulus material was thought to be inappropriate or the questions had inappropriate assumptions or implications, are noted in Table 8 below.

<i>Table 8. Examples of quality issues that did not necessarily impact unintentionally on the difficulty of the question.</i>	
Nature of issue	Question/figure number and detail of issue
DBE 2012 Paper 1	
Format, structure and layout issues	Q1.3.5 Incorrect station model diagram Fig 1.3. Poor quality image Q2.3.2. Incorrect diagram. Latitudes South of the equator marked N Q3.5.2 Image not drawn accurately – pie-chart slices not representative of figures.
DBE 2012 Paper 2	
Format, structure and layout issues	Q3.1 diagram is labelled in an odd manner – perhaps labels should be aligned on one side of the diagram
DBE 2013 Paper 1	
Format, structure and layout issues	Q2.6.4. Figure 2.6 – poor diagram as unclear as to whether the diagrams are linked or not. Q4.3 Figure 4.3 Figure is labelled incorrectly
Language level, contextualisation of question, memo and inappropriateness of stimulus issues	Q2.4.2: Figure 2.4 the language used in the cartoon is idiomatic and hence likely to disadvantage many learners. Q3.4.4: Poor question as it is congestion rather than number of cars that lead to environmental problems Q4.3.3: Distasteful question that provides a very negative and one-sided view of illegal immigrants with no requirement that the view be critiqued – it is presented as the norm. Q4.3.4: Grammatical error
DBE Paper 2 2013	
Format, structure and layout issues	Q4.3. Faulty numbering 4.2.5 followed by 4.5 instead 4.3
Language level, contextualisation of question, memo and inappropriateness of stimulus issues	Q3.8. memo instructs this question to be ignored as it is incorrect

DBE Paper 1 2014 exemplar	
Format, structure and layout issues	Q4.5 Figure 4.5 Pictures should be labelled A and B for easier reference
Language level, contextualisation of question, memo and inappropriateness of stimulus issues	Q1.6.1: Poorly phrased/worded question. Should rather ask for the cause not the human activity. Q1.6.3: Memo has peculiar answers that do not relate to the question. Q3.6.2 :Poorly phrased question Q4.6.4 Incorrect mark allocation – 4 marks but 3 responses required
DBE Paper 2 2014 exemplar	
Format, structure and layout issues	No issues recorded
Language level, contextualisation of question, memo and inappropriateness of stimulus issues	No issues recorded
DBE Paper 1 October 2014	
Format, structure and layout issues	2.1. Too many marks for coastal lows and berg winds? 2.2 too many marks for turbulent and laminar flow? 2.2.2 Diagram should have noted that it reflects a river profile - River Flow patterns along a long profile. 3.3.3 Irrelevant bottom part of picture - better to make top photo bigger - distracting. 4.4.1 No need for stimulus material - it is not needed to answer any questions.
Language level, contextualisation of question, memo and inappropriateness of stimulus issues	1.3. Memo gives three facts related to the explanation, but does not require them to be USED to explain the katabatic flow. Question requires an explanation, but memo only required a causal fact. Too few marks if an explanation required. The question that is answer is 'give a reason why' not give an explanation. Question does not really test competence at level implied by task word. 1.3.4 Memo does not actually address the question. Three facts given, only need to give 2 in answer - but combinations of 2 do not give an explanation; also - no reference in memo to what is meant by radiation fog. Diagram not needed - in fact does not show radiation fog - shows valley fog. Question will not really test competence at level implied by task word 1.4.3 Memo asks for 2 conditions -but 2 conditions are not sharply defined in memo - memo gives three answers, one of which subsumes the other 2. Memo allows

reference to MLC, which is not shown on diagram.

1.4.4 Memo gives answer that includes fact that condensation does not take place - irrelevant to the Question - will candidates who do not mention this part of the answer be penalized - if only give first part - should get the 2 marks.

1.4.5 Memo answer 2 is not an answer - Question asks why Berg Winds lead to fires, and answer 2 says ' because veld fires can easily be sparked., Some missing answers - such as veld is dry in winter; Must give both answers to get full marks.

2.4.3 Question perhaps better phrased as: Give one reason why high rise buildings contribute to heat. Question implies that an explanation is needed – but in fact they just have to state something they have learnt - mark allocation indicates this.

2.4.5a Note concord error in lead statement in 2.4.5

2.5.3 Question should ask for two ways in which humans could be/might be impacting/ not are impacting. No information is provided about what is actually happening in this region per se.

3.2.4 Answer will be arrived at by default - but in fact today labour not really a favorable factor for mining.

3.3.4 Memo needs to note that marks must be deducted if not a paragraph.

3.4.1 Question refers to lack of planning - but article does not mention lack of planning - or even allude to it. No CAPS skill on interpreting texts – should be.

3.4.2 Memo is poorly constructed as one answer is invalid - traffic congestion, and several are in fact the same answer - if learners give these, they are not giving two different factors (Residential areas on outskirts/living further from work/takes longer to get to work/higher transport costs. In fact only answer is pattern that places poor people on edge of city. Inadequate memo - only 2 correct answers.

3.4.3 Memo again a problem - 2 answers are really same answer - not two clearly distinct answers - so learners might struggle to find 2 clear answers. Typo in memo - says more of

	<p>get not more of it. Question maybe better out of x 2.</p> <p>3.5.4 Question could have been more directly phrased; complex question - not easy for all learners to work out what is being asked; needs unpacking.</p> <p>4.1.1 Question should ask for the name of the types of settlement, not the name of the settlement. Or what kind of settlement is ...</p> <p>4.2.1 and 2 No CAPS bullet for types of agriculture per se - assumed to be part of role of small and large scale farmers - but not really.</p> <p>4.2.3f. Restrictive memo - rehabilitating buildings etc also a suitable phrase</p> <p>4.5.3 Attitudes coming through in memo? – problems not related to 'too many people' but also to poor planning and resource management - all answers relate problems to the people - too many, too poor, unwillingness to pay - state's role and other factors not credited? Simplistic answer.</p> <p>4.3.4 /5 Green lungs - term not altogether familiar; implication in memo is that green belt = green lung - not so; Concern that learners who do not know what a 'green lung is' might lose these marks - term not in CAPS, nor easily inferred from the text.</p> <p>4.5.5 Some bias in Question - states that informal traders are reluctant to apply for a permit - Question should ask why traders might be reluctant.</p> <p>4.6.4 Several answers in memo do not relate to working conditions - but there are sufficient that do – but should not be crediting the 'wrong' answers, even if in memo!.</p>
DBE Paper 2 October 2014	
Format, structure and layout issues	None noted
Language level, contextualisation of question, memo and inappropriateness of stimulus issues	<p>2.1.2a Cannot locate C on map from cross section as cross section is not to scale - but Q can still be answered.</p> <p>4.1.2. Q asks for explanation of role, memo just asks for description of role. No Bullet for general aspects of GIS - Gr 10</p> <p>4.3.3 memo should link back to the buffer zone.</p>

The team noted that the NCS papers tended to recycle very similar questions, with different detail. Some of these are good questions – but their strength will be lost as they become familiar to teachers and candidates. The 2014 October paper had some refreshingly different questions, with 2.1.3a of Paper 2 asking for more depth of understanding about gradient than the usual calculation does, and 4.3.1 of the same paper being a more challenging question than usual on buffering as it has to be drawn on a map extract not a sketch. In Paper 1, the use of stimulus material for the short answer questions in each section allowed for some interesting ways of eliciting understanding as well as recall – but sometimes perhaps led to the overweighting of marks on the topic on which the stimulus materials was based (the question on laminar and turbulent flow).

1.3 Rating the quality of examination papers

Altogether, across the two papers, the team analysed in the region of 190 items for each examination. Thus, despite the issues noted in the previous two subsections of Section 2, the team felt that all the papers are generally of good quality as the items where issues were noted represent a small percentage of the items. Table 9 reflects this view, even for October 2014 where the numbers of issues noted is larger than in previous papers

Table 9. Ratings for the quality of examination papers	
DBE 2012 P1	Good
DBE 2012 P2	Good
DBE 2013 P1	Good
DBE 2013 P2	Good
DBE 2014 P1 exemplar	Good
DBE 2014 P2 exemplar	Good
DBE 2014 October P1	Good
DBE 2014 October P2	Good

3. Standard of the examination papers

3.1 Levels of difficulty

The team rated each sub-question in all papers as being either easy, moderately difficult, difficult or very difficult using guidelines provided by Umalusi. Table 10 shows the team's agreed weighting of marks for different

levels of difficulty for all the papers analysed¹, and for each examination as a whole.

Paper	Percentage of marks in each category			
	Easy	Moderately difficult	Difficult	Very difficult
DBE 2012 Paper 1	55	35.5	9.5	0
DBE 2012 Paper 2	69	21	10	0
DBE 2013 Paper 1	56	28.5	15.5	0
DBE 2013 Paper 2	68.75	25	6.25	0
DBE 2014 Paper 1 exemplar	52	35	13	0
DBE 2014 Paper 2 exemplar	65.33	12	22.67	0
DBE 2014 October Paper 1	47,4	30,3	19,6	2,66
DBE 2014 October Paper 2	56	22,6	21.3	0

Table 10 shows that, in each year and for all examinations, both papers are most heavily weighted in the 'easy' category. This weighting is most evident in Paper 2 in each year. The weighting is least marked in 2014 than in the previous years.

In all years, the percentage of marks in the moderately difficult category is about 30% (28% - 35%) for Paper 1, and lower for Paper 2. The weightings in this category are similar across the years. (21% - 25%). except for the exemplar paper of 2014, where it is notably lower (only 12%,)

In all years, the weighting in the difficult category is lower than in the other categories. In 2012, both papers have about 10% of the marks in this category. In 2013, the percentage in Paper 1 is 15, 5% and 6, 25 % for Paper 2. There is a noticeable increase in these values in 2014. In the October examination of this year the weighting in Paper 1 is 19, 65% and 21 % in Paper 2. In Paper 2 of the exemplar, the weighting is 22, 67%, but the weighting for Paper 1 of the exemplar is only 13%). Noticeably different in October 2014 is that it is the only examination with any marks in the very difficult category - 2.66% of the

¹ There were no unresolved differences in ratings of difficulty levels among individual evaluators

marks for Paper 1, but, as reflected in Table 7, this is for a question with invalid sources of difficulty.

When the combined weightings, shown in Yable 11 are analysed, it is clear that here, too, the weightings in each year are greatest in the 'easy' and lowest on the 'difficult' category. The weighting in the easy category is again seen to decrease in the end-of – year examination over the three years, while the weighting in the difficult category increases. Only the October 2014 examination has any marks in the very difficult category (but due to invalid sources of difficlty/ease). The 2014 exemplar is vrey similar in its spread of marks to the 2013 examination (though slightly less weighted in the easy category, and slightly more in the moderatley difficult and difficult categories.

Table 11. Weighting for each level of difficulty for all examination papers combined.				
Paper	Percentage of marks			
	Easy	Moderately difficult	Difficult	Very difficult
DBE 2012 Paper 1 and Paper 2 combined	57.8	32.6	9.6	0
DBE 2013 Paper 1 and Paper 2 combined	58.06	27.82	13.71	0
DBE 2014 exemplar Paper 1 and Paper 2 combined	54.67	30.40	14.93	0
DBE October 2014 Paper 1 and paper 2 combined	49	28.8	20	2,13

The numbers of all invalid questions identified in paper(s) together with an explanation of the source of the invalid difficlty and its likely impact on candidates' marks has already been given in Table 10 in Section 2.1, and so this information is not listed again here. Similarly, comment was made on the weightings across levels of difficulty earlier in Section 3.1 and is not repeated here.

In all the examinations analysed, there were 4 optional questions in Paper 1, and none in Paper 2. Table 12 below shows the weighting of marks across levels of difficulty for each of the optional questions in Paper 1 of these examinations.

Table 12. Comparison of marks allocated to questions at each level of difficulty in the optional questions – as a percentage of marks for the question.

	Easy	Moderately difficult	Difficult	Very difficult
DBE 2012 Paper 1				
Question 1	54	36	10	0
Question 2	60	34	6	0
Question 3	58	30	12	0
Question 4	48	42	10	0
DBE 2013 Paper 1				
Question 1	54	34	12	0
Question 2	50	38	12	0
Question 3	60	34	6	0
Question 4	60	8	32	0
DBE 2014 Exemplar Paper 1				
Question 1	52	40	8	0
Question 2	36	53.33	10.66	0
Question 3	61.33	21.33	17.33	0
Question 4	58.6	25.33	16	0
DBE 2014 October Paper 1				
Question 1	52	24	13,3	10,6
Question 2	42,6	44	13,3	0
Question 3	52	32	16	0
Question 4	42,6	21,3	36	0

As shown in Table 12, In the papers with optional questions the spread of marks across the levels of difficulty is different, suggesting that candidates' results might be impacted by the choice they make about which of the questions to answer. Details of these differences are provided below.

In the **DBE 2012 paper**, question 4 is more difficult than the others, with less than half the marks for easy questions, while in all the other questions, at least 54% of the marks are for easy questions; 46% of the marks are for moderately difficult questions, compared with no more than 36% in any of the other questions; and 10% of the marks are for difficult questions – close to two of the other questions, and more than one of these. Question 2 is the easiest question, with 60% of the marks in the easy category, and only 6% in the difficult category.

In the **DBE 2013** paper, the weighting across the levels of difficulty is fairly similar in questions 1 and 2. Compared to these, both questions 3 and 4 are more heavily weighted in the easy category, suggesting that these two questions are easier than questions 1 and 2. However, in question 4, 32% of the marks are for difficult questions, making this a more challenging question than the others, while only 6% of the marks in question 3 are for difficult, items, suggesting that this is the easiest of the four questions.

In the **DBE 2104 exemplar** paper three of the questions are most heavily weighted in the easy category, with question 3 having almost two thirds of the marks here. Question 2 is an exception, with only one third of the marks in the easy category. In turn, it is more heavily weighted in the moderately difficult category – meaning that this question is overall more challenging for weaker candidates than are the others. The questions also vary in regard to the percentage of marks awarded to difficult questions – from 8% for question 1 to 17% for question 3.

In the **DBE October 2014** paper, questions 2 and 4 are more difficult than the others in that they both have a smaller percentage of marks in the easy category. However, Question 4 is more difficult than question 2 as there is only about half the the percentage of marks in the moderately difficult category, and almost 3 times as many in the difficult category. Question 1 and Question 3 both have about half the marks in the easy category, but question 1 is more difficult of the two as it has 10.6% of the marks in the very difficult category, and, with this, is noticeably more heavily weighted in the difficult/very difficult categories than is Question 3, which is probably the easiest question on the paper. It must be noted, that the very difficult question was considered by the team to be at this level because of invalid sources of difficulty (see Table 7).

This unequal weighting of marks across categories suggests that candidates making different choices might well be either penalised or advantaged by their choice of easier or more difficult questions. At the same time, however, given that they were able to choose, it could be that those choosing more difficult questions did not deem them to be so, and managed as well as they might have on the questions deemed easier by the team.

3.2 Examples of questions at each level of difficulty in the 2014 examination

Table 13 below provides examples of easy, moderately difficult and difficult questions in the papers analysed. The only question rated as very difficult was at this level of difficulty because of an invalid sources of difficulty stimulus and expected response), and so has not been recorded below.

Table 13. <i>Examples of questions at different levels of difficulty in the 2014 examination papers</i>		
Question No	Category	Question
Paper 1: Nov 2014		
1.1.1	Easy	Study Figure 1. Name the cloud type A
3.2.1	Easy	In which of the following economic sectors are raw materials extracted from nature? A. Primary B. Secondary C. Quaternary D. Tertiary
3.6.1	Easy	What is a spatial Development initiative (SDI)?

3.6.2	Moderately difficult	Discuss the importance of SDIs for economic development in South Africa
2.3.3	Moderately difficult	Refer to the weather station at Windhoek (B). In a paragraph of approximately EIGHT lines, describe and give reasons for any TWO weather conditions recorded at the weather station.
2.1.3	Moderately difficult	Refer to Figure 2.1 showing two coastal lows, A and B. Choose ONE term in brackets to make each of the following statements true. Pressure cell A will have a (lower/higher) moisture content than pressure cell B.
4.6.3	Difficult	Besides industrial activities, discuss why the instability at Lonmin's Marikana mine will impact negatively on the GDP.
4.4.4	Difficult	There is a view that quality housing and employment opportunities are pull factors to urban areas. In a paragraph of approximately EIGHT lines, critically evaluate the extent to which this is true.
Paper 2: Nov 2014		
3.1	Easy	Refer to the graph below. Does Cullinan receive seasonal rainfall, or rainfall throughout the year?
3.1.3	Moderately difficult	Taking your answer to question 3.1.1 into account, was the orthophoto map taken in summer or winter? Give a reason for your answer.
2.1.4	Difficult	Calculate the vertical exaggeration of the cross section.
4.3	Difficult	Draw in the buffer zone recommended by hydrologists on the above extract of block E5.

3.3 Difficulty of stimulus/source material

The Geography team did not evaluate the stimulus/source material separately with regard to level of difficulty of stimulus material. The difficulty of the stimulus material was considered as part of the assessment of the difficulty of the question – particularly with regard to the construct 'stimulus difficulty' and the nature of the stimulus material was also considered in analysing the cognitive demand of the papers.

If adequacy of weighting is to be discussed, then some idea of a notional ideal is needed against which to judge each paper's adequacy. Given that the pass mark is 30%, a weighting of 35% in the easy category could be considered adequate as it would give even weak candidates a chance of passing at this pass mark. About 40% in the moderately difficult category would allow for candidates worthy of a C or a B to achieve this. This would allow for 20% of the paper to be for difficult questions, achievable by candidates worthy of a distinction, and a further 5% for the high-end achievers in the distinction category.

With this in mind, none of the individual papers or examinations as a whole has an adequate spread of marks across levels of difficulty.

When Table 10 is examined, it can be seen that all papers are more heavily weighted in the easy category than the notional ideal. This overweighting is more marked in Paper 2 of each examination than in Paper 1. Paper 1 of October 2014 is closer to the ideal than any of the other papers in any year – but still has about 12% more marks in this category than the ideal.

The moderately difficult category is underweighted in both papers in each examination. The discrepancy between actual and ideal weightings is not as great as in the easy category, but is still marked. It is again most marked in each Paper 2, with the 2014 exemplar being most divergent from the ideal (12% instead of 40% of the marks in this category). Paper 1 of 2012 is closer to the ideal than the weighting in any other paper in any year (35.5% of marks instead of the 'ideal' 40%).

The weightings in the difficult category are lower than the ideal in both papers in 2012 and 2013, with large differences in all except Paper 1 of 2013 where the difference is only 4.5%. In the 2014 exemplar examination, Paper 2 is slightly overweighted in the difficult category, while Paper 1 is underweighted. Both papers in the October 2014 examination are very close to the notional 'ideal', with Paper 2 being slightly overweighted. Paper 1 of October 2014 is the only paper in any of the years to have a question rated as very difficult, though this is due to invalid sources of difficulty.

When Table 11 is analysed, it can be seen that in all years, the examination as a whole is more heavily weighted in the easy category than is the ideal. This weighting is very similar in 2012 and 2013 and the 2014 exemplar, but lower in the 2014 October examination. In all examinations, the weighting in the middle category is lower than the ideal. The weightings in 2013 and October 2014 are very similar, and lower than the weighting in 2012 and the 2014 exemplar examination. The 2012, 2013 and 2014 exemplar examinations are underweighted in the 'difficult category, with this underweighting being more pronounced in the examinations of 2012 (9.6%) than 2013 or the exemplar of 2014 (13.71% and 14.93%) respectively). The 2014 examination matches the ideal weighting in the difficult category, and has some weighting in the very difficult category, too (though the latter is ascribable to an invalid source of difficulty).

3.4 Other points regarding the standard of the examination

The team had no additional point to make regarding the standard of the examination papers analysed.

4. Recommendations for improving the quality and standard of the examinations

The team considered that the following recommendations could improve the quality of the examinations

- The weighting of 'easy' and 'moderately' difficult questions could be adjusted so that fewer of the marks are allocated to 'easy' questions, and more are allocated to 'moderately difficult' questions. This change would assist in separating out the candidates who should just pass, from those who can achieve better marks by managing more difficult questions (especially as some of the easy question are very easy).
- The weighting of the marks in the difficult category should be continued – it is a pleasing change from previous years and should allow for better discrimination of A candidates worthy of the A.
- Care needs to be taken not to set questions for 8 marks on less significant aspects of the curriculum – such as turbulent and laminar flow.
- Greater care needs to be taken to ensure that the question and memo are well aligned; the task words need to be reflected in the expected answers;
- In the memo, learners should be credited for the structure of the answer, and for actually addressing the question asked, not only for providing facts;
- There might be more questions which require a drawn rather than written answer from candidates;
- More extended writing could be required – at present, the longest answer required is an eight line paragraph – Grade 12 candidates worthy of a B or more should be able to write more extended answers than this.

Several aspects of the papers were considered worthy of note with regard to models for the future:

- The papers asked many questions in slightly different ways from previous years – and this variety should be continued to diminish the trend of teaching to the test promoted by predictable questions with only details changed from year to year.

Individual questions which provided good models are thought to be:

- Paper 1 Question 4.4.4: The memo here is a good example of a memo where the task word and the memo are well aligned – learners were credited with providing an evaluation as required.

- Paper 1 Question 4.5.6 – extended learners' thinking.
- Paper 2 Question 2.1.3a Some depth of knowledge required in regard to gradient - testing what is understood about gradient and the ratio that represents it, not just a calculation
- Paper 2 Question 4.3.1 A more challenging than usual question on this topic.

On a broader level however the team did have some concerns about the overall structure of the Paper 1 component of the examination. One of these is that the reduction in marks on Paper 1 from 100 to 75 per question has not diminished the load on candidates in answering the paper as many questions now carry 1 rather than 2 marks. It was felt that fewer questions for more marks each might alleviate this problem, and encourage greater depth of curriculum coverage, even if, perhaps, at loss of breadth. In similar vein, given the decreased amount of content in the CAPS compared with the NCS, the team wondered if Paper 1 should comprise 3 compulsory questions, rather than offering candidates a choice of 4 from which three must be answered. This would reduce the reading load, and allow for more in depth responses. One of these questions could be a more integrated question across human and physical geography. In order to encourage longer answers, each question could perhaps carry 100 marks.

5. Comparability of examination papers

5.1 Comparability of quality

The Umalusi instrument requires the quality of the papers to be analysed largely in terms of the numbers of questions with an invalid source of difficulty/ease, and also in terms of such factors as language level, format of questions, contextualization of questions and inaccuracy of marking memo. Table 14 below shows the team's assessment of the relative quality of the papers for the 2014 examination compared with those for the two years preceding it.

Table 14 Quality of the 2014 examination papers relative to examination papers for previous years.	
Paper	Rating of the corresponding 2014 Paper
2012 Paper 1	Equivalent/slightly lower
2013 Paper 1	Equivalent/slightly lower
2014 Paper 1 exemplar	Equivalent/slightly lower
2012 Paper 2	Equivalent
2013 Paper 2	Equivalent
2014 Paper 2 exemplar	Equivalent

The quality of the papers was seen to be similar and different in several ways. Weighing up of these similarities and differences led to the on-balance judgement reflected in Table 14.

Firstly, the rating for the quality of each paper overall was deemed by the team to be good (Table 9)

All the papers were clearly laid out, with diagrams and other stimulus material well numbered and clearly cross referenced to the text. The language level was generally appropriate. All the papers complied with the specifications for format and structure given in the CAPS for the examination.

With regard to numbers of questions with invalid sources of difficulty/ease, Table 6 shows that the 2014 Paper 1 had fewer such questions than Paper 1 in previous years, and Paper 2 slightly more. When the two papers are combined, the 2014 examination had more questions with invalid sources of difficulty/ease than the examination of the preceding years – but these contributed fewer marks in 2014 than in the other years. The 2014 examinations are very similar in regard to both numbers of questions with invalid sources of difficulty/ease, and marks allocated to such questions.

Table 7 shows that the team noted more 'other' 'technical' concerns with Paper 1 of 2014 than for that paper in the previous years, or the 2014 exemplar. It is this higher number of 'other' concerns that led the team to rate the quality of the 2014 paper 1 as slightly lower than the quality of Paper 1 of previous examinations. It must be noted, however, that most of the concerns pertained to the memo, and not to the paper itself. The number of other issues was very similar for Paper 2 in all other examinations analysed, and so the 2014 paper 2 is rated as equivalent to this paper in 2012 and 2013 and the exemplar paper.

5.2 Comparability of standards

In considering the overall performance trends of learners writing Geography in 2014, the team is of the opinion that candidates are likely to do less well in the 2014 end-of-year examination than in 2012 or 2013, or than in the 2014 exemplar. This judgement is based largely, but not only, on the analysis of difficulty, shown in Table 11 in Section 3.1. This shows the 2014 October examination has a smaller percentage of marks in the easy category, and more in the difficult category than the other examinations analysed. This pattern indicates that the 2014 October examination is of a higher standard than that of the preceding years or the exemplar, and that the paper will be more difficult for both weaker candidates and those aiming for an A. In addition, several questions are asked in different ways from previous examinations, which will mean that those candidates who have been taught to the test will have to think more independently in the examination. Compared to 2012 and 2013, the potential advantage of papers with fewer marks has been offset by the increased number of 1 mark questions, meaning that candidates will not benefit from a potentially less demanding paper in terms of the number of questions to be read and responded to. At the same time, however, the CAPS curriculum has noticeably less content

than the NCS had in Grade 12, and this might have a positive impact on learners' ability to answer the paper well. The team is of the opinion that this will not, however, have a major effect.

2.5: History – Department of Basic Education

SUBJECT: HISTORY

Compliance with the CAPS and/or relevant assessment body.

1.1 Format and structure

Table 1: What was in NCS and what is in CAPS

NCS examination structure	NCS	CAPS	CAPS examination structure
Paper 1: 150 marks			
Choose 2 questions in each paper. 2 x 75 marks = 150			Choose three questions in each paper. Choose ONE source-based and ONE essay question, and ONE other. 3 x 50 marks = 150
Q1 Impact of the Cold War (45 marks source based and 30 marks extended writing)	75	50	Q 1 The Cold War (origins, Cold War in Europe and Cuban crisis) source-based questions
Q2 How was <i>uhuru</i> realised in Africa in the 1960s and 1970s? (45 marks source based and 30 marks extended writing)	75	50	Q2 Independent Africa (Africa in the Cold War, case study: Angola) source-based questions
Q3 What forms of civil protest merged from the 1960s to 1990? (45 marks source based and 30 marks extended writing)	75	50	Q3 Civil society protests 1950s to 1970s (Civil rights and Black power movements) source-based questions.
Q4 Black consciousness in SA in the 1970s, apartheid SA in the 1980s (45 marks source based and 30 marks extended writing)	75	50	Q4 Cold War (Case study of either China or Vietnam in alternate years) essay
		50	Q 5 Independent Africa (Comparative case studies of Congo and Tanzania) essay
		50	Q 6 Civil society protests 1950s to 1970s (Civil rights and Black power movements) essay
Paper 2: 150 marks			
Q1 Impact of the collapse of the USSR in 1989 on the USA and on SA (45 marks source based and 30 marks extended writing)	75	50	Q1 Civil resistance in SA 1970s to 1980s (Black consciousness) source-based questions
Q2 Impact of the collapse of the USSR in 1989 on Africa (45 marks source based and 30 marks extended writing)	75	50	Q2 Coming of democracy in SA (Truth and Reconciliation Commission) source-based questions
Q3 How did SA emerge as a democracy from the crises of the 1990s? (45 marks source based and 30 marks extended writing)	75	50	Q3 End of the cold war and new world order (A new world order) source-based questions
Q4 Dealing with the past and facing the future: TRC (45 marks source based and 30 marks extended writing)	75	50	Q4 Civil resistance in SA 1970s to 1980s (the crisis of apartheid in the 1980s) essay

		50	Q5 Coming of democracy in SA (Negotiated settlement and the Government of National Unity) essay
		50	Q6 End of the cold war and new world order (The events of 1989) essay

The format and structure requirements of all papers, including the 2014 exemplar and final papers, have been strictly adhered to. Theoretically the weighting of each topic is identical, but in practice which of the six content sections are covered very much depends on which questions the individual candidate chooses to answer. Whatever happens the candidate would have to be familiar, at least in part, with four of the six topics in order to be able to answer the two papers.

1.2 Cognitive Demand Weighting

The 2014 Examination Guidelines for History provide the following for the assessing of source-based questions (p. 6)

Cognitive level and weighting	Historical skills
Level 1 (30%)	Extract evidence from sources Selection and organisation of relevant information from sources Define historical concepts/ terms
Level 2 (40%)	Interpretation of evidence from sources Explain information gathered from sources Analyse evidence from sources
Level 3 (30%)	Interpret and evaluate evidence from sources Engage with sources to determine usefulness, reliability, bias and limitations Compare and contrast interpretations and perspectives presented in sources and draw independent conclusions.

Table 2 2014 – Exemplar Paper 1 and Final Paper 1

	Level 1	Level 2	Level 3	
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	Ex	Fin	Ex	Fin	Ex	Fin	
Marks	42	44	48	54	60	52	150
Team's %	28	29	32	36	40	35	100
CAPS Specified %	30		40		30		100

Table 3 2014 – Exemplar Paper 2 and Final Paper 2

	Level 1		Level 2		Level 3		
	Ex	Fin	Ex	Fin	Ex	Fin	
Marks	45	46	65	56	40	48	150
Team's %	30	31	43	37	27	32	100
CAPS Specified %	30		40		30		100

Table 4: 2014 – Average cognitive demand for both Exemplar papers and Final Papers

	Level 1		Level 2		Level 3		
	Ex	Fin	Ex	Fin	Ex	Fin	
Marks Paper 1	42	44	48	54	60	52	150
Marks Paper 2	45	46	65	56	40	48	150
Marks Total	87	90	113	110	100	100	300
Team's %	29	30	38	37	33.3	33.3	100
CAPS Specified %	30		40		30		100

2014 Exemplar Papers

The team found that the cognitive demand weighting for Paper 1 showed a reversal of the percentages of Level 2 and Level 3 questions, with 10% more Level 3 questions and eight percent fewer Level 2 questions than specified in the 2014 History Examinations guideline document. This difference was somewhat offset in Paper 2 where there was a slight preponderance of Level 2 questions. Overall, however, the examination appeared to be compliant when the marks were combined with the allocations for the various levels close to the specifications of the 2104 Examinations guideline document.

2014 Final Papers

The reversal of weighting of levels two and three noted for Exemplar Paper 1 did not occur in Final Paper 1. However, the weighting for these two categories diverged from CAPS requirements in that 36% (as opposed to 40%) were at Level 2 and 35% (as opposed to 30%) were at Level 3. These weighting differences were offset by Paper 2 where the questions at Level 2 comprised 37% and those at Level 3 32%. Taking both papers into account the papers came very close to the CAPS requirements with 30% at Level 1, 37% at Level 2 and 33.3% at Level 3. These differences are sufficiently small to have little or no impact in terms of performance on those writing the paper.

General Discussion regarding Cognitive Demand categories

However, there are the following unresolved problems with this analysis:

- The analysis was done using only the source-based questions, since CAPS gives only weighting of levels for source-based questions.
- All the essays in the 2014 papers are discursive. This means that by their very nature they fall in an upper level category – which in the case of the DBE has not been specified for essays as the levels provided only apply to source-based questions – as they require the high level skills of synthesising information and sustaining an argument in order for a candidate to achieve a high score.
- Combining essays into the analysis would markedly skew the percentage of questions at the higher levels. This may account for the much higher ratio of Level 1 questions in the source-based questions between NCS and CAPS(10% to 30%) in that this increase of level 1 source-based questions may offset the impact of the introduction of compulsory discursive essays.
- From past experience of the Nated examinations, however, candidates tend to fare better on the essays than they do on the source-based questions – where lower levels of literacy cause them to battle to read and understand the sources – as, to a certain extent at least, they can predict what the essay will be and prepare accordingly. Furthermore, the marking rubric allows for a reasonable allocation of marks for those who fall a long way short of the requirements of a discursive essay. For instance it is possible to score in the low 60% category with an essay showing very little argumentative skills. A student who 'addresses the topic inadequately or not at all with inadequate and irrelevant content' with a largely descriptive effort can achieve 30- 34%.
- Further complicating the process of deciding on cognitive demand weightings are the various options given to candidates. In any one paper a candidate may decide to answer either one essay out of three and two source-based questions out of three or two essays out of three and one source-based question out of three. In theory the latter should

be the more demanding option, but this did not turn out to be the case with the Nated papers written between 2003 and 2007, which used an identical format.

As regards the effect of choosing different question options on the cognitive demand levels experienced by candidates, this is greatly complicated by the number of options – 16 per paper – available to candidates. However, leaving aside the abovementioned complication regarding essays vs source-based questions, the team felt that while there were small differences in the cognitive demand levels among source-based questions in the two papers, these were unlikely to have any statistically meaningful impact on the overall cognitive demand of the papers among candidates who chose different source-based question options.

1.3 Topic or skill area weighting

All topics are comprehensively covered in the exam paper. As far as skill areas are concerned, there are two main skill areas covered in the paper: essay writing (which includes demonstrating knowledge and understanding of the topic, planning and structuring of the essay, using evidence to support an argument and writing coherently and logically) and interacting with sources (which includes extracting and interpreting information from the source, comparing sources, evaluating the reliability and usefulness of sources, and synthesising information from sources) (CAPS History 2011, p 40 and 42). The proportions these make up would be dependent on the various options exercised by candidates. For instance for essay writing and for the source-based skills, it could be as low as 33¹/₃% or as high as 66²/₃%.

1.4 Rating for coverage of the examinable curriculum

Table 5 – Content covered by the DBE NCS and CAPS papers

NCS /CAPS Topics	DBE NCS 2012/2013		DBE CAPS 2014 Papers	
	P1	P2	P1	P2
	1. What was the impact of the Cold War in forming the world as it was in the 1960s?	O		S

	How did the Cold War shape international relations after World War II?		
2.	How was uhuru realised in Africa in the 1960s and 1970s? How did the Cold War influence independent Africa?	○	S E
3.	What forms of civil society protests emerged from the 1960s up to the 1990s? What was the nature of the civil rights movements after World War II? USA	○ ○	S E
4.	What was the impact of the collapse of the USSR in 1989? What was the nature of the civil rights movements in South Africa after the 1960s?	○ ○	S E
5.	How did SA emerge as a democracy from the crises of the 1990s? How did South Africa emerge as a democracy from the crises of the 1990s and come to terms with the apartheid past?	○ ○	S E
6.	What do we understand by globalisation? What was the significance of the events of 1989 and how has the world changed (globalization)?		S E

The bold type indicates the topic as it appears in the CAPS curriculum.

The codes in the above table need explanation. The "O" in the NCS papers means "optional". The double "O" means that two optional questions come from this section. A blank cell means that this section was not examined. The "SE", code means that both source-based and essay questions were asked on this section. The curriculum lays down which topics within these larger sections will have source-based questions asked on them and which essays.

From this table it is clear that for the NCS papers the DBE set questions on five of the six topics in the curriculum, which amounts to an 83.33% coverage of the curriculum. Only topic 6 on globalisation was left out. Theoretically this section could have been covered in school-based assessment, but this was not a requirement and it seems unlikely that this section was covered at all in the

majority of schools. In contrast, the 2014 CAPS exemplar and final papers provide coverage of all six topics in the curriculum.

A feature of the DBE papers is the setting of more than one question on a single theme. In the case of the NCS papers this applied to themes 3, 4 and 5, while in the case of the CAPS examinations each section has a source-based question and an essay set on it.

The sections of the themes upon which the various types of question will be set have been quite rigidly defined. For instance in the case of Independent Africa, candidates will only ever have a source based question on the topic **Africa in the Cold War** while they will only ever have an essay on the topic **Successes and challenges faced by Congo and Tanzania**. The decision to allocate different skill areas to different topics within a theme greatly increases the papers' predictability and has implications for the setting of papers in the long-term where it is likely that both essay topics and available sources will be mined out, leading to repetition and the possible use of unsuitable sources.

1.5 Other points relating to compliance

All aspects relating to compliance are contained in the points already discussed. On the whole the team supports the CAPS format, particularly the return of essay questions as a separate component of the papers. As mentioned above there were concerns expressed about the lack of flexibility (See 1.4 above).

6. Quality of examination papers

2.1 Table 6: Invalid sources of question difficulty or ease

	Paper 1	Paper 2	Totals
2012	1 (1)	0	1
2013	2	1	3
2014 Exemplars	0	0	0
2014 Finals	0	1	1

2012 Paper 1

Question 1.4 – The question reads as follows:

Using ALL the sources and your own knowledge, write a paragraph of about EIGHT lines (about 80 words), explaining the impact that the Cuban Missile Crisis had on Khrushchev's political career. (8)

The sources do not provide information on Khrushchev's political career and consequently do not actually relate to the question.

The 1 in brackets refers to a question which is poorly phrased in that it asks about the "accuracy" of a photograph. The team is of the opinion that it is not appropriate to ask about the accuracy of a photograph. It does not, however, rise to the level of an invalid question as candidates would be able to answer it.

2013 Paper 1

Question 1.1.2 – The question reads as follows:

Using the information in the photograph and your own knowledge, explain how the reputation (status) of the USSR was affected. (Visual source) (2)

This is a peculiar question. Using the word "reputation (status)" in regard to the USSR was considered by the team to obfuscate the meaning and intention of the question.

Question 4.1.4 – The question reads as follows:

Explain whether you agree with Steve Biko's attitude towards police interrogation and death. Use the information in the source and your own knowledge to support your answer.

This was not really a historical question. It called for nothing more than speculation on the part of the candidates and was therefore considered to be both lacking in precision and not suitable for a history paper.

2013 Paper 2

Question 2.3.1 – The question reads as follows:

According to the written source, how did Angola attempt to reconstruct itself after years of civil war?

The source does not actually mention how Angola attempted to reconstruct itself - it only mentions the huge infrastructural problems. This is an illustration of tying questions to a flawed key question.

2014 Exemplar Papers 1 and 2

The team felt that there were no invalid questions in the 2014 Exemplar papers.

2014 Final Papers 1 and 2

The team felt that Question 3.4.4 in Paper 2 was invalid. The question reads as follows:

Why was it not possible for developing countries to import processed goods?

The question seems to stem from a misunderstanding of the topic on the part of the examiners, in that the only type of goods that developing countries are able to import are processed goods. The team felt that the question only made

sense if the word “export” was substituted for “import”. The answer given in the memorandum was that the developing countries were prohibited from importing the “tools of production”, however, this is very different from “processed goods”. As the question is only worth two marks the impact would not be very great.

2.2 Other points regarding the quality of the examinations

The papers will be handled together with references given to specific elements in the various papers.

Language Level – The team felt that on the whole the language level in all eight papers reviewed was appropriate. However, particularly in the NCS papers, there were some terms used which tended to obfuscate rather than illuminate the question being asked. One of the team members felt that with regard particularly to the NCS papers there was a tendency for questions in source-based sections to be imprecise or too open-ended so that virtually any answer was deemed appropriate. (An example of this type of question will be discussed later in the document.) Occasionally the desire to tie questions to the overarching key question created problems, particularly when the key question was obscure or downright misleading such as in the case of 2013 Paper 2 – Question 2: What impact did the fall of communism have on Angola in reimagining itself after the 1990s? Possibly because of the increase in the number of Level 1 question in the 2014 exemplars the questions seemed more precise with less tendency for there to be multiple answers. This was also the case with the final papers, although the team finds questions about the “usefulness” of sources problematic for precisely the reasons given above.

Two issues that the team have had in past reviews is the use of the word “accurate” in asking questions about cartoons and photographs. A word like this is meaningless when used in connection with a cartoon, as a cartoon by its very nature is not “accurate” in its representation of an event or point of view. Another troublesome word that has occurred over the years is “justified”. Asking whether someone’s actions are “justified” is not a historical way of looking at these actions. Neither term occurs in either the 2014 exemplar papers or the final papers.

Sources

On the whole there has been an improvement in the contextualisation and choice of source material. However, there are still some problematic issues:

- Contextualisation – Although it has improved considerably there are still rather too many examples of thinly contextualised sources in both the 2014 exemplar and final papers. This is particularly the case with sources from the Internet. Indicating the web address is not helpful for candidates trying to unlock the source. An example of this is 2012 Paper 2 Question 3B. Where possible examiners should indicate the country from which a source comes – therefore, for instance, a contextualisation that says that a cartoon came from *The Hartford Times* should contain

the additional information that this is a newspaper in Hartford Connecticut, USA. (2013 Paper 1, Source 1C).

- Nature of sources
 - There are still far too many textually dense sources, many of which are secondary or even tertiary sources. Increased effort needs to be made to find accessible primary sources. A feature of questions on this type of source was the tendency to treat them as little more than reading study passages of uncontested reliability and no discernible bias.
In Final P2, there were 13 sources, and of these five were secondary sources and five did not provide adequate contextualisation as to the author, audience, date and purpose of the source.
Final P1 was better in that only one of the twelve source was poorly referenced and only two were secondary sources.
 - Cartoon sources present a particular difficulty as the level of visual literacy of many candidates is still low. Consequently, the interpretation of cartoons should be well scaffolded both in the contextualisation and the questions set. Frequently the candidate is simply called on to explain the message of the cartoon without any Level 1 questions to help him or her decode it. In some instances separate questions have been asked on the cartoon and the caption when the team feels that such a separation is problematic. The team felt that the examiners missed an opportunity to get the candidates to interact meaningfully with a cartoon source in the 2014 Final Paper 1. The questions set on the cartoon strip on Angola (Source 2B) treat it merely as a source of information, whereas a short explanation of the domino theory as it affected American involvement in South East Asia, would have made it possible for candidates to be asked questions on the point being made by the cartoonist.
 - Photographs are also problematic, although the number of questions asking the candidates to explain the photographer's intention seems to have diminished over the years.
- Presentation of sources – A welcome change in the 2014 papers is the presentation – with one exception in Paper 2 of the finals – of each source as a separate entity. The practice of combining sources under a single number, often distinguishing them as a visual source and a written source is, in the opinion of the team, unnecessary and problematic.

Marking Memoranda

In most instances these are adequate. In only a very few instances are there cases where the team felt the answers do not properly fit the questions. The only example for the 2014 final papers would be Question 3.4.4 in Paper 2 cited above. As already indicated the answer is also invalid.

Good Questions

An example of a question which the team rated as good was 1.5 of 2014 History Paper 1. This reads:

Refer to Source 1B and 1D. Explain how the information in Source 1D gives a different perspective to Source 1B regarding the assistance that Berlin received in 1948.

This makes use of two quality sources to allow candidates to make a meaningful comparison between two diametrically different perspectives on the Berlin Airlift. It is a valid historical exercise which leads to a clear answer.

Question 2.5 on Angola is similar.

The team also liked Question 1.4.2 in Paper 1. This read:

Explain why a historian might consider the information in this source biased.

The team found this greatly preferable to the more common way of phrasing Level 3 questions by asking about the “usefulness” of a source. We would encourage the examiners to consider asking questions about bias and reliability rather than the very vague category of “usefulness”, which then leads to “anything goes” type answers.

2.3 Overall quality of the examination papers

No very useful purpose would be served by drawing up a table for this as the improvement in quality since 2012 has been maintained and none of the papers is very bad or even bad, although equally none is excellent. Using a five-point scale with 5 as excellent and 1 as very poor, the DBE papers would all score in the 3 to 4 range, in most case 3.5 would probably be a good indicator of quality. A greater proportion of good, accessible sources and mostly clear questioning probably gives the edge to the 2014 exemplar Paper 1 and final Paper 1, although some of the team members remarked on the easiness of the CAPS papers, compared with the NCS papers. This is due to the shift in the weighting of Level 1 questions from 10% in NCS to 30% in the CAPS.

7. Standard of the examination papers

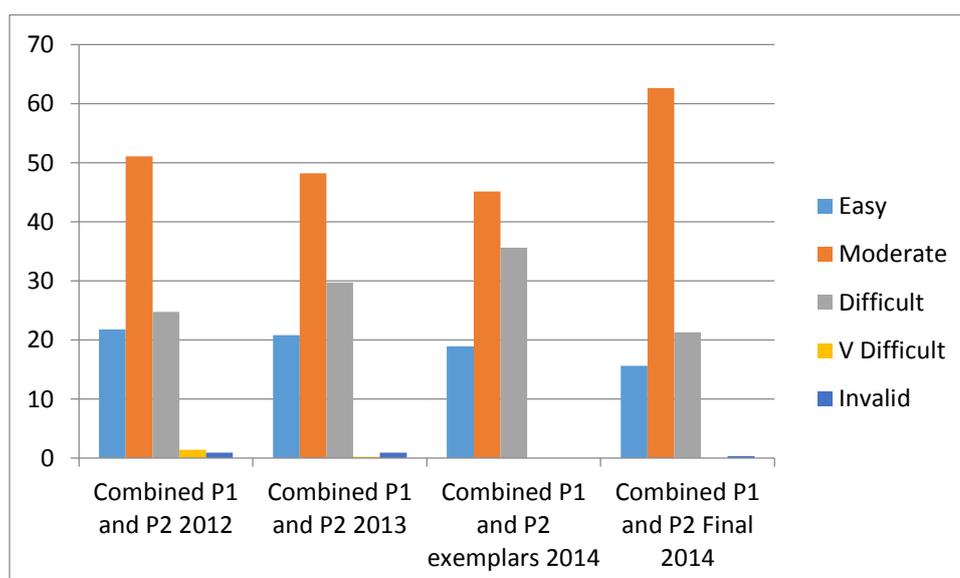
3.1 Levels of Difficulty

Table 7: Percentage of marks awarded to the different levels of difficulty in the examination paper(s) separately and combined.

	Easy	Moderate	Difficult	V Difficult	Invalid
2012 P1	27.62	32.9	37.6	0	1.9
2012 P2	15.95	69.28	11.9	2.85	
Combined	21.78	51.09	24.75	1.42	0.95
2013 P1	24.52	46.9	27.14	0.47	0.95
2013 P2	17.14	49.52	32.38		0.95
Combined	20.83	48.21	29.76	0.24	0.95
2014 Ex P1	17.3	49.3	33.3	0	0
2014 Ex P2	20.6	41	38	0	0
Combined	18.95	45.15	35.65	0	0
2014 Fin P1	15,3	60	24,6	0	0
2014 Fin P2	16	65.3	18	0	0.7
Combined	15.65	62.65	21.3		0.35

A global discussion of this table is to be found after the discussion on invalid questions and optional questions.

Graph 1: Comparison of 2012, 2013 and 2014 papers regarding percentage of marks per level of difficulty



Invalid Questions

Table 6 contains all those questions that the team felt were invalid. It is to be found under Section 2.2.

Optional Questions

Because of the wide choice involved in the history papers, all questions could be regarded as optional. The 2012 and 2013 NCS papers even contain an option within a question in that candidates are offered the choice between

doing a narrative or discursive piece of extended writing (essay). However, the impact of this option would be negligible as almost all candidates chose the simpler option and those few who did not would have been well up to answering an argumentative essay and would presumably have chosen this option because they were good at it.

The 2014 final papers were analysed by question. What is apparent from this analysis is that in the team's estimation there are source-based questions within each paper which contain more or fewer difficult questions and there was also an essay in each paper which was rated by the team as being difficult, while the other two essays in each paper were rated as moderate. Because of the numerous permutations possible, it is difficult to determine with any confidence what effect exercising different options would have on a candidate's final result. However, from past experience it seems likely that certain questions will be answered by very few candidates, Independent Africa for instance, and by removing these from the calculations, it is possible to give some idea of the effects of different choices (Table 9). This will only be done with the 2014 final papers.

Table 8: Difficulty levels in marks and percentages by question

	1 Easy		2 Moderate		3 Difficult		4 V difficult
	P 1	P 2	P 1	P 2	P 1	P 2	
Question 1	18	18	24	28	8	4	0
% at this level	36	36	48	56	16	8	0
Question 2	16	16	34	34	0	0	0
% at this level	32	32	68	68	0	0	0
Question 3	12	14	22	34	16	0	0
% at this level	24	28	44	68	32	0	0
Question 4	0	0	50	50	0	0	0
Question 5	0	0	0	0	50	50	0
Question 6	0	0	50	50	0	0	0
Whole paper	46	48	180	196	74	54	0
% Papers sep.	15.3	16	60	65.3	24.7	18	0

Table 9 – Effects of different options in the 2014 Final Paper 1

	Easy	Moderate	Difficult	V Difficult
Questions 1,3,4	30	96	24	0
	20%	64%	16%	
Questions 1,3,6	30	96	24	0

	20%	64%	16%	
Questions 1,4,6	18	124	8	0
	12%	82.6%	5.3%	0
Questions 3,4,6	12	122	16	0
	8%	81.3%	10.6%	

Table 10 – Effects of different options in the 2014 Final Paper 2

	Easy	Moderate	Difficult	V Difficult
Questions 1,2,4	34	112	4	0
	22.6%	74.6%	2.6%	
Questions 1,2,5	34	62	54	0
	22.6%	41.3%	36%	
Questions 1,2,6	34	112	4	0
	22.6%	74.6%	2.6%	0
Questions 1,4,5 or 1,5,6	18	78	54	0
	12%	52%	36%	
Questions 2,4,5 or 2,5,6	16	84	50	0
	10.6%	56%	33.3%	
Questions 1,4,6	18	128	4	0
	12%	85.3%	2.6%	
Questions 2,4,6	16	134	0	0
	10.6%	89.3%	0	0

Tables 9 and 10 suggest that there are indeed easier or more difficult options. Particularly in the case of Paper 2 where the team was of the opinion that the Question 5 essay was quite demanding and belonged in the "difficult" category. A similar difficult essay occurs in Question 5 in Paper 1, but this is a section which up to now, at least, has not proved popular with candidates.

Allocation of marks at the different levels

As can be seen from the combined ratings in the table, the levels for 2012 and 2013 were similar and suggest that there was a good spread between bread and butter marks for the weaker candidate and difficult questions for the more able.

The source-based questions in the 2014 exemplar and final papers were rated by the team as being largely moderate in the difficulty levels with only about five percent of marks rated as difficult and no very difficult questions. This would suggest a decline in standards in the new CAPS examination, consistent with the decision to award 30% of the marks for Level 1 questions as opposed to the 10% of NCS papers.

The decision to set only discursive essays in the CAPS papers, however, adds a new factor into the calculation of difficulty levels and it is important to weigh up the significance of these essay questions carefully before coming to any conclusions. The team decided to rate the difficulty level of the essays in the CAPS papers and came to the conclusion that in each exemplar paper, two out of the three essays in each paper could be rated as difficult, while the other

one was rated as moderate. In the case of the final papers, the team concluded that one out of three essays in each paper was difficult with the other two being moderate in each case. This significantly increased the difficulty rating for the 2014 papers, bringing them into line with the NCS papers.

The team found it difficult to decide on the impact of these discursive essays and debate centred on the following points:

- Essays provide the able candidate with a chance to demonstrate his or her superior abilities of synthesis and close argument. These skills are central to History as a discipline. Equally they provide the average student with an opportunity to get a solid result and the less able to scrape a pass. In this regard they provide space in the paper for a wide range of abilities to be demonstrated.
- The impact of the essay questions will largely be determined by how they are marked as the marking rubric gives some latitude for interpretation which is largely absent in short answer questions.
- As the topics upon which essays can be set have been strictly laid down and these are in many cases quite small sub-sections within a larger topic, the likelihood of predictability over time is quite marked and is likely to provide opportunities for candidates to have learnt model essays for the examination. It is not quite clear how the examiners intend to obviate this problem which was certainly beginning to creep into the Nated papers in the final years of their being written.

3.2 Examples of questions at the different levels of difficulty

Easy	P1 1.2.2	Describe the impact that the Berlin Blockade had on ordinary Berliners.	Straight extraction.
Moderate	P2 2.3	Comment on how the information in Source 2A and Source 2B (Testimony 2) support each other regarding the work of the TRC.	Comparison
Moderate	Essay P2 4	Explain to what extent the internal resistance movements in South Africa were successful in challenging PW Botha's apartheid regime in the 1980s.	
Difficult	P1 1.3.2	Explain, in the context of the events that occurred in 1948, why this photograph was widely published by the Western media (newspapers).	Requires high level engagement with the source.
Difficult	Essay P1 5	Discuss to what extent both the Congo and Tanzania were successful in bringing about economic development and political stability after attaining independence from colonial rule.	It was felt that the element of comparison raised the level of this essay.

There were no very difficult questions in either the exemplar of final papers.

3.3 Rating of difficulty for stimulus/source material

As none of the stimulus/source material could be considered easy and the majority moderate, a table of this sort would be of limited usefulness. However, the team did analyse the 2014 final papers and a table presenting our findings appears after this discussion as Table 11.

Some of the source material in the papers analysed was identified by the team as difficult on the following grounds:

- Dense texts full of difficult words and concepts are inaccessible to most candidates, despite the efforts of examiners to mediate this by defining the difficult words and concepts. An example of this is Source 1A from 2014 Exemplar Paper 2. It reads as follows:

Black Consciousness (BC) became a doctrine of self-emancipation and a strategy for escape from the political doldrums (state of stagnation) into which South Africa had been cast in the 1960s. BC was also the breeding ground for a new generation of leaders and the training ground for imparting organisational skills. BC succeeded in popularising self-reliance as a viable (practicable) liberation strategy. Its initiatives in launching a student movement and adult political organisations, leadership training programmes, and in enunciating (uttering) a philosophy which accorded with the dignity of the downtrodden (burdened) and oppressed, served to demonstrate that self-reliance was attainable. The tasks BC set were to uplift sagging spirits; raise battered self-esteem; affirm identity and assert human dignity; fight off apathy and stagnation; turn racial stereotypes on their heads; exorcise (to get rid of) the arsenal (collection) of complexes that haunted and kept down individuals and communities; instil self-confidence and self-reliance and reinvigorate (revive) the masses in their struggle for emancipation (freedom).

[From: *The Road to Democracy in South Africa Vol. 2* by MV Mzamane et al.]

An additional problem with this kind of source, is that in most instances it is treated not as a historical document, but as a glorified reading study exercise.

- Most cartoons tend to be problematic because of their use of visual symbolism to make a point. This visual symbolism is not always understood by the candidates and they are not helped in any way by either the contextualisation or the questions. An example of a cartoon is Source 2B in 2014 Paper 2 (see overleaf). This cartoon relies on the haunted house analogy in order to get its message across. Consequently a learner would be helped by being asked about the purpose of the visual symbol of the house in the question. In fact in this case the examiners have done this, but as the second question not the first. The first question asks for the message of the cartoon. The inversion of these two questions would have helped remove any problematic features of understanding this cartoon.



Table 11 – Rating of difficulty level of sources for 2014 final papers. (Note we have used a rating scale with 1 being easy, 2 moderate, 3 difficult and 4 very difficult. In some cases we have used a score such as 2,5 to suggest a source that is tending towards being difficult.)

Source Number	Rating	Comment where appropriate	
Paper 1	1A	2	
	1B	2	
	1C		This is a photograph and the team felt that it was consequently difficult to rate, as it is the questions that would provide the source of difficulty, and not the photograph itself.
	1D	2.5	The language makes this source more difficult
	2A	2.5	Language difficulty. Although this is a secondary source, the author was closely involved as a UN consultant.
	2B	3	This cartoon is quite taxing. However, the questions never really exploit it as anything more than a source of information.
	2C	2	
	2D	2	
	3A		Once again the team felt that it was problematic to rate a photograph for difficulty. The contextualisation for this source is good.

	3B	2	The team felt that the use of capital letters, while it tried to convey the fact that these were telegrams, made the source difficult to read.
	3C	2	
	3D	3	This telegram was textually dense and consequently demanding. Once again the use of capitals was problematic and the layout was unnecessarily cramped, exacerbating the difficulty of reading the source.
Paper 2	1A	3	Difficult language exacerbated by the philosophical nature of the source.
	1B	2	A tedious tertiary source with poor contextualisation. As expected it serves as little more than a comprehension exercise.
	1C	2	Another tertiary source, serving as little more than a reading study exercise.
	1D		An often-repeated photograph. The team did not feel that it could be rated.
	2A	2.5	A dense read which is extremely poorly contextualised.
	2B	2	An example of putting two separate sources as one source. They do, however, share the link of both being TRC testimonies.
	2C	1	A very straightforward table.
	2D	2.5	Difficult language and extremely poorly contextualised. It is apparently connected to a puppet play on the TRC, but is clearly not part of the play, being perhaps the author's notes. None of this is explained in the contextualisation.
	3A	2	
	3B	2.5	As expected this extract from a speech by Thabo Mbeki is not an easy read.
	3C	3	This dense rather confusing piece is also poorly contextualised. We are told it is written by A Shah, but who Shah is, when it was written, why it was written are not explained.
	3D	2	This cartoon is easy to decode for anyone who has studied this section.

The table shows clearly that the team felt that the sources used in Paper 1 were of moderate difficulty and better contextualised than with those used in Paper 2, which had more dense tertiary sources.

8. Recommendations for improving the quality and standard of the examinations

As the format of the 2014 CAPS papers have changed substantially over that of the 2012 and 2013 papers, there would be little point commenting on the NCS papers in terms of quality and standards.

The team felt that the source-based questions in the 2014 exam papers were easier than in previous years as would be expected where 30% of the questions as opposed to 10% are expected to be at Level 1. However, it should be noted that in the NCS papers candidates had the option of doing only narrative essays, while in the CAPS paper all the essays are discursive and therefore involve a high degree of skill for the candidate to achieve in the upper mark categories, although, equally achieving 30% appears to be reasonably easy as the essays of candidates in the 30 to 34% category are described in the rubric as: “Question inadequately addressed, sparse content and little or no attempt to structure essay.”

Because of the structure of the papers, the minimum contribution of essays to the total mark is going to be $33\frac{1}{3}\%$ while it is quite possible that this could be as high as $66\frac{2}{3}\%$. Importantly, discursive essays provide a good means of differentiation, allowing the very able to demonstrate their ability to a degree which is not usually possible with source-based questions.

Overall the 2014 exemplars provide a good, and in this case tested, model for future papers. The Nated papers set between 2003 and 2007 used an identical format and were regarded as sound assessment instruments by the original Umalusi team, two of whose members are still on the present team, when the original analysis was done back in 2009.

Here are some more specific comments on the 2014 exemplar papers:

- It was pleasing to see that in most cases sources were separated and not lumped together rather artificially as was the case with the NCS papers.
- In most cases it seemed easier to decide exactly what was required in answering the questions than was the case with the NCS papers.
- Candidates were not expected to comment on the “accuracy” of cartoons nor to say whether someone was “justified” for what they had done. In other words no ahistorical terminology was detected in the paper.
- Paper 1 had some interesting sources in it which were in themselves or quoted primary sources.
- Paper 2 has several textually dense sources that were poorly contextualised regarding purpose and author (Exemplar 1A,B and C; 2A and D and 3A and see source analysis of 2014 final papers). When sources are taken from the Internet, it is important for the purposes of school history to give more than just the web address, particularly as these give no guide as to the particular bias of the organisation maintaining the website. In fact where it is appropriate contextualisation should go much further than the normal referencing of author, time and place. In some instances it will be necessary to identify both the purpose of the document and the bias of its author.
- Exemplar Paper 2 contains a cartoon on globalisation which refers to an individual called Kerry and even asks a question about him. As no information is provided about this individual in

the contextualisation and most South Africans would be unaware of who he is, this is likely to cause confusion to candidates.

The team would like to see the following aspects of the CAPS papers attended to:

- We are concerned about the lack of flexibility in the papers and foresee it leading to high levels of predictability and the mining out of resources in future years.
- While the introduction of discursive essays explains the decision to increase the mark allocation at Level 1 from 10% to 30%, the team was generally worried by such a high proportion of straight extraction questions and recommends that the mark allocation at Level 1 should be lowered to 20% and the 10% thus freed up attached to Level 2.
- Partially as a result of the increase in extraction question, the tendency for sources to be treated as reading study exercises is likely to increase. We have not quantified this factor, but in a number of cases any reasonably competent reader who has not studied History at school would be able to answer the questions set on some of the sources. Whatever the decision as regards Level 1 questions, we would strongly urge examiners to avoid using a source entirely or largely as an English comprehension exercise.
- The team was critical of vague questions with the multiplicity of answers this creates. A recurring example of this in the 2014 final papers were questions which asked about the "usefulness" of sources. As so many factors go into the determination of "usefulness", such as relevance, reliability, bias etc, it leads inevitably to rather nebulous answers. We would recommend asking more questions about bias and reliability or perhaps the limitations of the usefulness of a particular source. These more rigidly defined concepts provide a much narrower range of possible answers.
- Problems with source material is still apparent, although there has been improvement over the years (See discussion under 2.2). The team would recommend:
 - Where possible primary sources should be used. There are still too many secondary and even tertiary sources in the papers, particularly in Paper 2. These serve as little more than reading study passages and seldom have authentic historical questions asked about them.
 - If at all possible, sources should be free of jargon and/or difficult words. They should engage the young candidate by conveying the feelings and experiences of individuals during a particular historical time. Dense philosophical or ideological sources should be avoided as much as possible.
 - Thorough contextualisation of the source is very important. This is even the case where this information does not add to the candidates' ability to answer the questions. It is good historical practice and should be reflected in the papers. A particular problem exists with Internet sources. The contextualisation should go beyond the minimum requirements of a web address and the date the site was accessed.

- If it enables the examiner to set richer questions, examiners are encouraged to include explanatory paragraphs with the source. An explanation of the domino theory as it affected South East Asia would have enabled the examiners to set better questions on the cartoon in Paper 1 (Source 2B).

9. Comparability of examination papers

5.1 Comparability of quality

A table containing the number of invalid questions in each paper has already been provided under the section concerning quality.

The considerable change of format makes it very difficult to compare the exemplar papers with the NCS papers of 2012 and 2013. The fact that there were no invalid questions in the 2014 exemplar papers and only one in the final papers suggests that there are no serious quality issues.

5.2 Comparability of standards

Because of the yet undetermined impact of a minimum of 33.3% of the papers being made up of discursive essays, it is very difficult to say with any certainty whether the performance of learners will change upwards or downwards or remain the same.

The team is of the opinion that performance trends are likely to remain more or less stable. An imponderable will be how effectively teachers have managed to teach discursive essay skills to learners since the gradual changeover to the CAPS curriculum began in 2012. Owing to the fact that no learner was compelled to answer a discursive essay question for the NCS examinations, it is probable with South Africa's heavily exam led curriculum that these skills were allowed to lapse for a number of years. If the candidates have not been well prepared in this regard, a decline in performance is possible despite the 20% increase in Level 1 source-based questions.

2.6: Life Sciences – Department of Basic Education

SUBJECT: LIFE SCIENCES

1. Compliance with the CAPS.

1.1 Format and structure

Official document	Name	Paper	Sections	Total marks (h)
Examination Guidelines 2011	DBE 2012	1	ALL EXAM PAPERS FOLLOW THE SAME FORMAT A: Short answer, objective questions such as MCQ, terminology, columns and statements (50 marks) B: Two questions divided into 3-4 subsections (2 x 30 mark) C: Data response question (20 marks); Essay (20 marks)	150 (2½)
		2		150 (2½)
	DBE 2013	1		150 (2½)
		2		150 (2½)
1. Curriculum and Assessment Policy Statement 2. Circular S5 of 2013 3. Examination Guidelines 2014	DBE Exemplar 2014	1	ALL EXAM PAPERS FOLLOW THE SAME FORMAT A: Short answer, objective questions such as MCQ, terminology, columns and statements (50 marks) B: Two questions divided into 3-4 subsections (2 x 40 marks) C: Mini-essay (20 marks)	150 (2½)
		2		150 (2½)
	DBE Final 2014	1		150 (2½)
		2		150 (2½)

Compliance of 2014 examinations with specified format and structure

The 2014 Exemplar and Final papers comply with the prescribed format and length of examination papers, as given in the documents listed in Table 1.1.

Several points need to be considered in evaluating results for the first CAPS examinations:

- A DBE document called “Examination Guidelines 2014” was issued in February 2014, with the intention of providing greater clarity on the depth required, particularly in certain topics which appeared to be underspecified in the CAPS. The Examination Guidelines reorganised certain topics, and added more detail than was provided in the CAPS. Since textbooks were written according to the CAPS only, candidates who relied heavily on a textbook may have been disadvantaged.
- The topics examined in 2014 Papers 1 and 2 were reversed as compared with 2012-2013. As from 2014, one topic from Grade 11 (human impact on the

environment) is examined in Grade 12 Paper 1. Both examination papers examine topics taught at different times during the year, whereas previously Paper 1 examined topics taught in terms 1 and 2, and Paper 2 examined topics taught in terms 3 and 4. Table 3.1 shows the allocation of topics to examination papers. Meiosis is the only topic that is examined in both papers.

- The changes to examination structure were incorrectly communicated to all candidates in the admission letters, which was sent out in October. Admission letters gave the 2013 structure of examination papers. A subsequent correction letter (Examination instruction No. 15 of 2014), dated 17 November 2014, was received by most schools two days before Paper 1 was written. This change and subsequent error is expected to disadvantage candidates where teachers did not adhere to the Examination Guidelines, and private candidates, particularly those who study entirely independently.
- The CAPS document includes an allocation of four weeks of teaching time in Term 4, which does not exist in reality. The effect of this error in the pacesetter is that certain teachers may not complete the full curriculum before the examinations.

These factors and historical events must be taken into consideration when marks are considered.

Comments

As pointed out in the Report of the Ministerial Task Team on the Standard of the Senior Certificate examination papers (2014), South African examinations are very long (5 hours of examination time) in comparison with some other examining bodies (Umalusi 2006; Umalusi 2009). The format of Life Sciences Paper 1 and Paper 2 is repeated exactly in both papers. It is notable that most other examining bodies examine two years or more of study, whereas in South Africa, exit-level examinations examine one shortened year of study.

A recommendation is that the current examination structure should be changed to one one-hour short-answer examination paper, and one two-hour long-answer examination paper, including one essay question. The team did not reach consensus on this point.

1.2 Cognitive demand weightings

Table 1.2 Comparison of cognitive demand weightings specified and the weighting for examination papers combined for 2014 (% of total marks)

Exam	Paper	Types of cognitive demand			
		Know (A)	Understand (B)	Apply (C)	Analyse, Evaluate, Create (D)
Specified		40	25	20	15
Exemplar	P1	52,7	19,3	18,7	9,3
	P2	26,7	20,3	22,8	30,2
	Total	39,7	19,8	20,8	19,8
Final	P1	40,8	28,0	14,2	17,0
	P2	31,2	24,3	28,5	16,0
	Total	36,0	26,2	21,3	16,5

The methods of analysis required for this study were that team members met and were introduced to the criteria for assigning cognitive demand and level of difficulty to examination questions. During the orientation workshop, three examination papers were analysed by discussing each question against the given criteria, and assigning a type of cognitive demand and a level of difficulty.

Team members were then required to analyse the remaining examination papers independently before the second and third workshops. The results of their analyses were submitted to the team leader, who attempted to collate the independent analyses, and to identify questions where full consensus was not achieved for discussion at the second and third meetings.

It was soon apparent that a) collating the results of four spreadsheets was very time-consuming, and b) very few questions resulted in full agreement between raters. This raises concerns about inter-rater reliability using the present method of analysis.

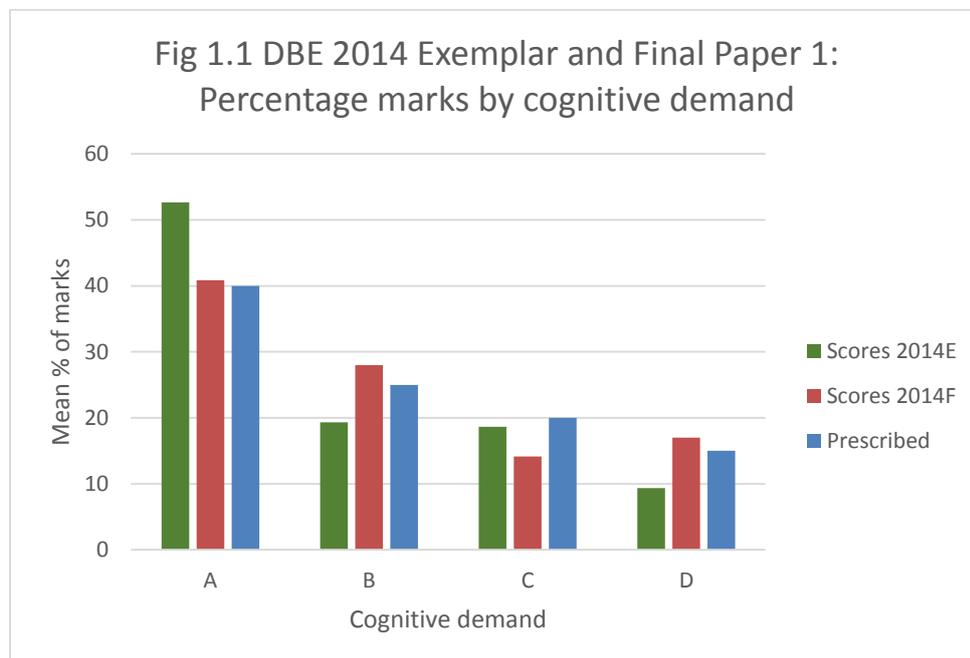
The Fleiss Kappa is a statistical measure of inter-rater reliability where more than two raters are involved. The Fleiss Kappa results in a value between 0 (no agreement) to 1 (full agreement). Fleiss suggested that values greater than about 0.75 represent excellent agreement, and values below 0.4 should be interpreted as poor agreement beyond chance. Values between 0.4 and 0.75 represent fair to good agreement beyond chance.

We calculated the Fleiss Kappa values for 2014 Final examination papers before the raters met and discussed the papers. This provides a measure of how robust the instrument of analysis is, allowing it to be understood and applied independently by raters. Papers 1 and 2 gave Kappa values of 0.4, which only just reaches the requirement for "fair" agreement among raters.

Besides the Kappa coefficient, the percent agreement is a simple measure of agreement among raters. It is an average pairwise percent agreement, in which the agreements of all possible pairs are calculated and averaged per item. An agreement among four raters gives a percentage agreement of 100%, but an agreement among three raters means that 3 of the 6 possible pairwise comparisons agreed, giving a percentage agreement of 50%. If two of the four raters agree, the percentage agreement drops to 16.7%. Although we could find no references to the use of the percentage agreement in literature on inter-rater reliability for examination analyses, in other fields agreement of 70% and above is considered acceptable, although 80% is preferable.

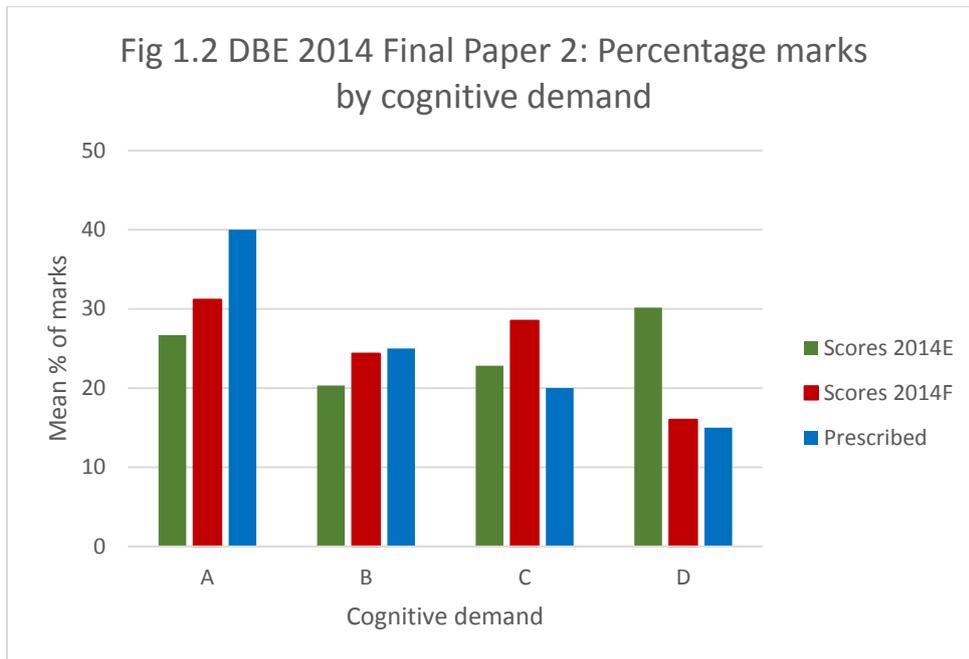
In the Final Paper 1 of 2014, the percentage agreement was 63%, and in Paper 2, it was 58%. These values are below the acceptable values.

At the joint meetings, questions worth the largest numbers of marks were discussed first, to attempt to reach closer consensus. We continued until there was reasonable agreement among raters in the total scores for each type of cognitive demand. Mean scores across the four raters were then calculated for each type of cognitive demand, and this is taken to represent the consensus position.

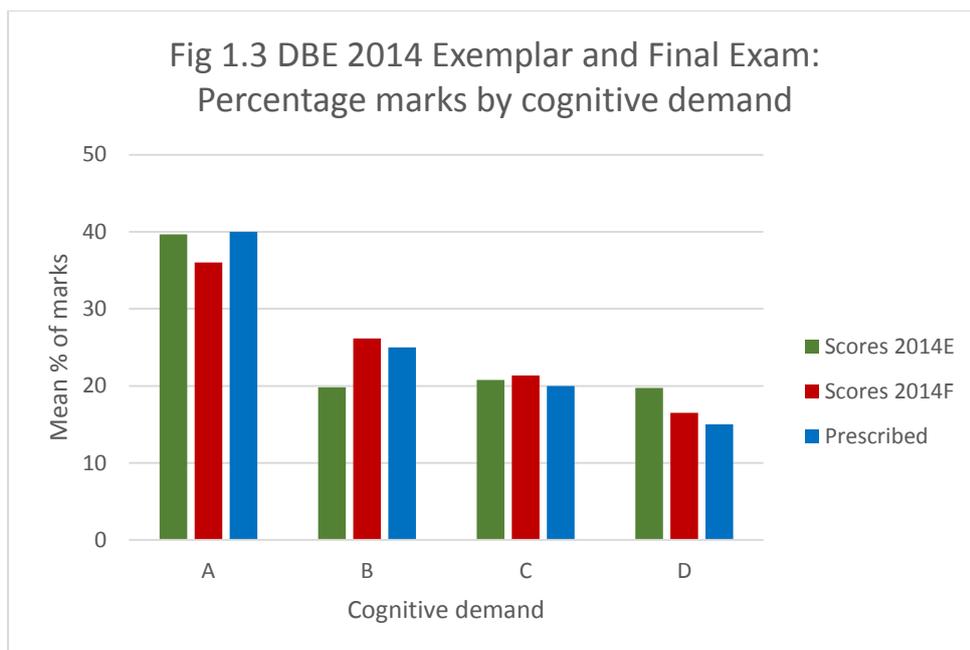


Exemplar Paper 1 was overweighted in “knowing” questions, and underweighted in “understand” and higher order cognitive demand. Final Paper 1 is considerably closer to the prescribed weightings, although slightly overweighted in “Understand (B)” and higher order skills (D) and underweighted in “apply (C)”, but this is not perceived to

be a problem. However, the exemplar paper was not correctly balanced with regard to cognitive demand.



Exemplar Paper 2 was heavily overweighted in higher order cognitive demand, and underweighted in all other cognitive levels. It did not comply with the prescribed weightings. Final Paper 2 is underweighted in “knowing (A)” and overweighted in “apply (C)” relative to the prescribed weighting.



Combining Papers 1 and 2, the Exemplar papers were underweighted in “understand” and overweighted in higher order demand. Final papers were closely aligned with the prescribed weightings, although the weighting on “knowing” (A) in the Final examination is slightly below that prescribed.

The Exemplar papers individually were a poor representation of the type of questions to be asked in the Final papers. Paper 1 presents as requiring a great deal of recall, while Paper 2 required a great deal of higher order thinking. The Final papers present a more balanced and acceptable concurrence with the prescribed values.

In the Report of the Ministerial Task Team (2014), mention is made of international bodies criticising Life Sciences examination papers particularly as having a high proportion of low order questions. It should be noted that CAPS has increased the weighting on “knowing” to 40% from 30% previously, and reduced the weighting on “understanding” from 30% to 25%, and higher order cognitive skills from 20% to 15%. Thus, the cognitive demand of 2014 examination papers is lower than was the case in 2012 and 2013.

The weighting of lower order cognitive demand questions is too high in the CAPS, and weighting of higher order cognitive demand too low.

1.3 Topic area weightings

Table 1.3 Comparison of the topic weightings (% of marks) specified and the weighting for examination papers for 2014.				
Year	Paper	Prescribed Topics	Prescribed weighting	Actual weighting
2014	2014 Exemplar Paper 1	Meiosis	7	3,5
		Vertebrate Reproduction	4	4,2
		Human reproduction	21	24,3
		Nervous system	27	24,7
		Endocrine system	10	8,3
		Homeostasis	7	8,3
		Plant Hormones	7	3,7
		Human Impact	17	15,5
		Nature of Science	Not weighted	7,5
	2014 Exemplar Paper 2	DNA	19	14,7
	Meiosis	7	11,0	
	Genes and Inheritance	30	26,7	
	Evolution	44	38,7	
	Nature of Science	Not weighted	9,0	
2014	2014 Final Paper 1	Meiosis	7	2,2
		Vertebrate Reproduction	4	3,2
		Human reproduction	21	24,2
		Nervous system	27	28,8
		Endocrine system	10	7,8
		Homeostasis	7	7,5
		Plant Hormones	7	3,5
		Human Impact	17	14,0
		Nature of Science	Not weighted	8,3
	2014 Final Paper 2	DNA	19	16,3
	Meiosis	7	4,2	
	Genes and Inheritance	30	28,5	
	Evolution	44	38,7	
	Nature of Science	Not weighted	12,3	

Comments

Life Sciences papers cover the whole examinable curriculum as prescribed in the relevant documents. The recommended specification of weighting of particular topics is more detailed in 2014 than in 2012 and 2013. The prescribed weighting is not strictly adhered to in 2014 Exemplar or Final papers as the weightings are only a guideline in the CAPS document. The weightings appearing in the 2014 examinations are acceptable.

No official provision is made for questions that test the nature of science, i.e., they test procedures such as drawing a graph, identifying variables in an investigation, stating a hypothesis. These are generally set in a context that relates to one of the content topics, but the actual questions are not content-specific. For example "Identify the dependent and independent variables" in an investigation is an assessment of knowledge of scientific investigation rather than an assessment of specific content knowledge. Such questions are more correctly assigned to the "Nature of Science", as we have done here.

The actual weighting of topics is close to the weighting specified, given that the questions the analysts have assigned to Nature of Science would be incorporated in the content topics by the examiners. We welcome the fact that examiners have exercised their right to deviate from the guidelines given in the CAPS document.

1.4 Coverage of examinable curriculum

Year	Paper	Coverage
2012	1	All
	2	All
2013	1	All
	2	All
2014 Exemplar	1	All
	2	All
2014 Final	1	All
	2	All

The examinable curriculum is fully covered in every examination paper, and there are few questions that are specifically outside the curriculum, e.g. the advantages of bipedalism are examined in 2014 Final Paper 2, Q 3.3.3, but not specifically stated in either the CAPS or the Examination Guidelines. There are, however, discrepancies between the CAPS and the Examination Guidelines.

Invalid questions affect a proportion of marks in the total examination, particularly in 2014 examinations. Team members commented that some examination questions appeared in a similar format to the final examinations in common assessment tasks in some provinces. This merits further investigation, because certain provinces may have an unfair advantage over others.

2. Quality of examination papers

1.4 Invalid sources of question difficulty or ease

Year	Paper	Q No.	Marks	Reasons for invalidity
2012	1	1.1.3	2	Scientifically incorrect diagram
		2.2.4b	1	Unclear wording
	Total	3		
	2	1.1.7	2	Two potentially correct answers
		1.1.10	2	No correct answer
Total		4		

2013	1	3.1.5	3	Memo doesn't match the question
		3.2.3	2	Misleading wording
	Total		5	
	2	1.1.8	2	Unclear what is meant by "average estimate"; alternatives are unlikely scenarios
Total		2		
2014 Exemplar	1	1.3.5	2	Wrong answer is given in the memo
		1.5.2	1	Memo is too narrow
		1.5.3	1	Incorrect diagram
	Total		4	
	2	1.1.1	2	Content not in EG or CAPS
		1.1.5	2	Question is scientifically incorrect.
		2.2.2	1	Scientifically incorrect
		2.4.1	1	Content not in EG or CAPS
		2.4.3	2	Content not in EG or CAPS
		3.1.2	3	Memo does not state correct hypothesis
		3.1.3	6	Graph in memo is incorrect
	3.1.5	2	Insufficient info given in question	
Total		19		
2014 Final	1	2.2.5b	3	Misleading question
		2.3.1a	1	Long, complicated description; two experiments in one
		2.3.1b	1	
		2.3.2	2	
		2.3.3	2	Clinostat is unfamiliar to most students.
		2.3.4	3	
		2.3.5	3	
	3.2.2	4	Memo doesn't match question	
	Total		19	
	2	1.1.7	2	Question was confusing (below and above combinations)
		2.3.3	1	Invalid question and incorrect answer
		2.3.4	5	Incorrect answer
		2.4.1	3	Memo is incorrect
3.3.3		4	Not in examination guidelines	
Total		15		

Comments

All invalid sources of difficulty are likely to disadvantage the learner. The total number of marks for Exemplar P2, and both Final papers for 2014 rated invalid difficulty is a cause for concern. The general effect of over 10% of the total marks being rated as having invalid difficulty is to disadvantage students. Team members commented on the inflexible application of the Memorandum, which disadvantages students who provide unanticipated but correct answers to questions.

2.2 Other points regarding the quality of the examination

1. Questions that refer to the answer to a previous question, e.g.2013 P 1, Q 3.2.2

From the results, calculate X and Y. Also state the trait provided a ratio closest to the expected phenotypic ratio mentioned in QUESTION 3.2.1. Show ALL working. (3 marks)

Q 3.2.3 Give a possible reason why the ratio selected in QUESTION 3.2.2 was closest to the theoretical ratio. (2 marks).

This practice is common in Life Sciences examinations and should be discouraged.

2. Many references to “the above” and “the below” or “the following”, e.g.

2014 Exemplar P1, Q 1.1.4

The following are effects of the secretion of different hormones:

1. An increase in the blood glucose level
2. An increase in the heart rate
3. An increase in the amount of digestive enzymes
4. An increase in blood flow to the skeletal muscles

Which ONE of *the following* combinations of *the above* effects is due to adrenalin?

- A 1, 3 and 4
- B 2, 3 and 4
- C 1, 2 and 4
- D 1, 2, 3 and 4

(Italics used to emphasize the use of “the following” and “the above”)

This practice should be discouraged in Life Sciences examinations. Figures and Tables should be numbered and given titles, to avoid the necessity of referring to “the diagram above” or “the Table below”.

3. Overly complicated and indirect questions

Many questions are asked in an indirect way, making the question a test of reading skill rather than a test of knowledge, e.g.

2014 Exemplar Paper 2, Q 2.1

[A diagram is provided with labels X, S, Z and Y, Process V and Process W, and numbers 1, 2 and 3. The diagram is easily recognisable as protein synthesis]

2.1.1 Identify the following:

- a) Molecule X
- b) Organelle Y

2.1.2 Identify the nitrogenous base labelled

- a) 1
- b) 3

2.1.3 Describe the role of DNA during transcription

2.1.4 Describe the part of protein synthesis shown as process W which occurs at organelle Y.

Question 2.1.1 requires learners to recognise the labelled structures. Question 2.1.2 requires learners to apply their knowledge of complementary base pairing to work out the nitrogenous bases 1 and 3. Question 2.1.3 does not require reference to the diagram, although it may serve to remind learners of the sequence of events in transcription. It is a **good** example of a direct assessment of learners' knowledge of a process. Question 2.1.4 asks about the process of translation in an indirect way. If a learner does not recognise Process W as translation, s/he will lose 4 marks. It could be re-worded as follows:

Describe the process of translation, referring to structures labelled in Figure XX

Examiners should ask questions in accordance with what they want to find out about learners' knowledge and skills. Concealing the question in the manner illustrated by Q 2.1.4 should be discouraged.

4. Very long questions

The essay question in 2014 Exemplar P2 contains 55 words in one sentence, and is essentially two independent questions combined into one.

Exemplar P2, Q 4

“Describe how a single species can form a new species, and explain how the differences in the skulls and other parts of the skeleton of primitive ape-like beings and modern humans support the idea that the general trend in human evolution has been towards bipedalism and a change in diet from raw food to cooked food.”

Exemplar P1, Q 4 is an example of a concise, direct essay topic:

“Name the hormones produced by the testes and ovaries and describe the role of each hormone in human reproduction.”

Final Paper 2, Q4 is also a good example of an essay topic:

“Describe how meiosis and different types of mutations contribute to genetic variation, and the role of this variation in natural selection.”

Essay topics should be concise and direct, to avoid being a test of reading proficiency rather than ability to synthesize an essay.

5. Source of data, diagrams and text

There has been a great improvement in the provision of sources for data, figures and tables, and the plausibility of datasets and graphs provided. However, there are still some unlikely datasets and figures included in the examination papers.

For example, 2013 P2, Q 3.1 has a graph showing survivorship curves for two countries. The curve for country A is a highly unlikely scenario. Paper 1 from 2012, Q 4.2 contains a detailed phylogenetic tree for the evolution of elephants. The source should be given to support the plausibility of this phylogenetic tree. It is incorrect scientific practice to identify the hypothetical ancestors on any phylogenetic tree. It is also incorrect scientific practice to join extinct species into a chain of evolution, as in Q2.3 of 2014 Final Paper 2.

Data, diagrams and text should be plausible and a source should be given.

6. Authenticity of experiments

It is common practice in Life Sciences examination papers to include questions relating to experiments that may be real or fabricated. There are two particular examples in the Final papers of 2014:

Paper 1, Q 2.3 refers to an investigation involving two different variables (effect of gravity and presence or absence of the root tip) on the growth of seedlings. It is based on a misconception: that root tips produce auxin, which they do not. The instrument used (clinostat) would be unfamiliar to 90% of South African students.

The raters judged this whole question to be a source of invalid difficulty because of the number of errors it contained.

Paper 2, Q2.4 refers to an investigation involving fruit flies in a flask with a piece of sticky paper. This would be completely unfamiliar to most students, and the design of the investigation leaves much to be desired. Raters were divided on whether to designate the whole question as Invalid difficulty (1 rater) or not (3 raters).

A slightly more plausible experiment was Paper 1, Q3, which involved determining which type of fertiliser would increase the yield of a wheat crop.

1.5 Rating the quality of examination papers

Table 2.3: Ratings for the quality of examination papers

2012	Paper 1	Good
	Paper 2	Good
2013	Paper 1	Good
	Paper 2	Good
2014 Exemplar	Paper 1	Fair
	Paper 2	Poor
2014 Final	Paper 1	Fair
	Paper 2	Fair

3. Standard of the examination papers

3.1 Levels of difficulty

Table 3.1 Percentage of marks awarded to the different levels of difficulty in the papers analysed separately and combined						
Year	Paper	Levels of difficulty				
		1	2	3	4	ID
2012	P1	27,8	35,8	31,7	2,7	2,0
	P2	34,3	40,0	22,2	1,5	2,0
	Total	31,1	37,9	26,9	2,1	2,0
2013	P1	29,0	39,0	22,2	6,5	3,3
	P2	43,8	46,7	7,0	2,0	0,5
	Total	36,4	42,8	14,6	4,3	1,9
2014 Exemplar	P1	42,8	26,5	26,7	1,3	2,7
	P2	20,5	26,8	24,3	15,3	13,0
	Total	31,7	26,7	25,5	8,3	7,8
2014 Final	P1	33,8	28,0	25,2	0,3	12,7
	P2	26,5	29,3	34,2	1,5	8,5
	Total	30,2	28,7	29,6	0,9	10,6

Very few questions resulted in full agreement between raters. Inter-rater reliability was calculated using the Fleiss Kappa method, using the data for 2014 Final examination papers before the raters met and discussed the papers.

In the Final Paper 1, the Fleiss Kappa value for level of difficulty was 0,25, and percentage agreement 51,1%. In the Final Paper 2, Fleiss Kappa value was 0,19 and percentage agreement 45%. Inter-rater reliability was poor in both papers when raters worked entirely independently.

At the joint meetings, questions worth the largest numbers of marks were discussed first, to attempt to reach closer consensus. We then discussed the questions scored as invalid difficulty by different raters. We continued until there was reasonable consensus among raters in the total scores for each level of difficulty. Mean scores for the four raters were then calculated for each level of difficulty, and this is taken to represent the consensus position.

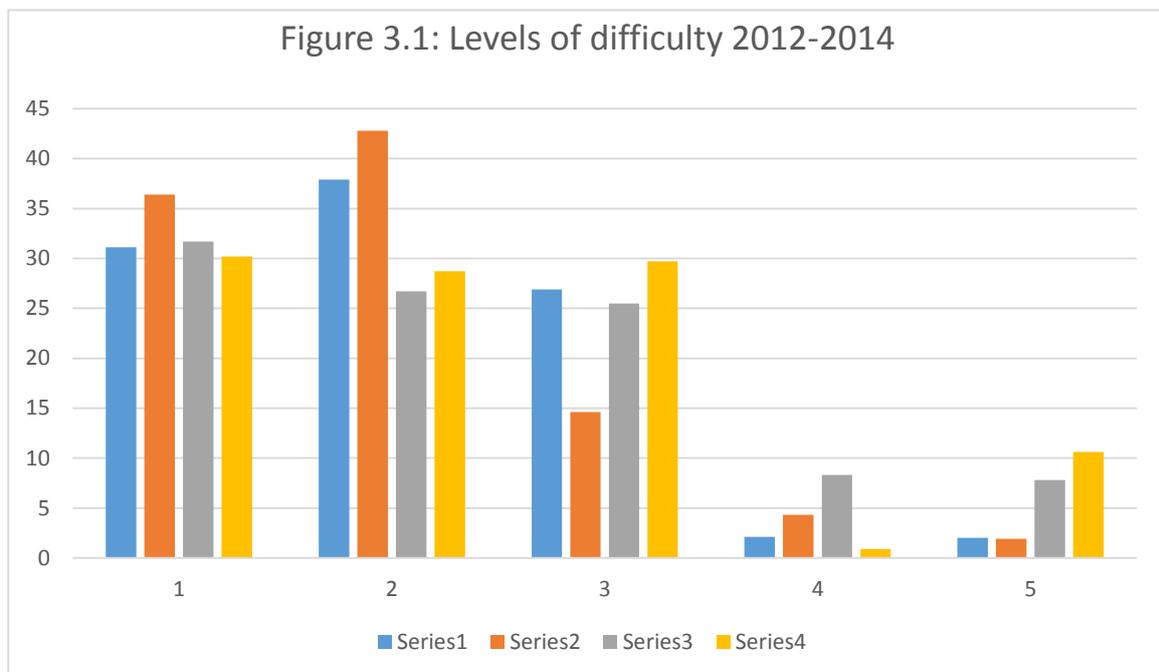
Analysts reported that they found it difficult to identify questions that were invalid sources of difficulty. A small percentage of marks were judged to have invalid difficulty in 2012, 2013 and 2014 Exemplar Paper 1. Exemplar Paper 2, and Final Papers 1 and 2 of 2014 had more than 10% of the marks assigned to invalid difficulty.

Very few questions resulted in 100% agreement across all raters. The method of analysis did not allow sufficient time to revisit every question on every paper. A list of unresolved differences is therefore not provided.

There were no optional questions in Life Sciences papers.

Comments

Figure 3.1 illustrates that the level of difficulty in total for the 2012 and particularly 2013 examination papers was lower than that of 2014. Fewer questions were assigned to invalid difficulty in 2012 and 2013 than in 2014.



Over the whole period 2012 – 2014, analysts found very few questions that were allocated to difficulty level 4. Table 3.1 shows that Paper 1 was consistently rated as more difficult than Paper 2, a situation that was reversed in 2014 Exemplar and Final papers with the reversal of topics examined in the papers. The 2013 examination was considerably easier than 2012 examinations.

In the 2014 Final examination papers (Table 3.1), Paper 1 had an unacceptably high proportion of marks at Level 1, and almost no marks rated as Level 4. Paper 2 had fewer marks allocated to Level 1, with a high level of marks allocated to Level 3, and very few marks in Level 4. In total, the two papers compensate for each other's deficiencies, resulting in an **acceptably even spread of marks across Levels 1, 2 and**

3, and very few marks for Level 4, and an **unacceptably high proportion of marks allocated to ID**. However, **there are sufficient marks at Level 1 to enable weaker learners to pass, but too few to differentiate at the upper end**.

3.2 Examples of questions at each level of difficulty

Level 1

Paper 1 Q2.1.1 Identify parts A, B and F respectively (on diagrams of male and female reproductive systems).

Paper 2 Q2.3.1 according to the phylogenetic tree, which organism, *Paranthropus boisei* or *Homo habilis*, appeared first on Earth?

Level 2

Paper 1 Q2.1.6 Explain why it is necessary for part D to be 'outside' the body in males.

Paper 2 Q2.4.4 Other than the opening for airflow, explain TWO other precautions that should be taken in this investigation.

Level 3

Paper 1 Q3.1.5 Explain how the excessive use of fertilisers can affect biodiversity if it is washed into the river.

Paper 2 Q4 Describe how meiosis and different types of mutations contribute to genetic variation and the role of this variation in natural selection.

There was no consensus on questions at Level 4 Difficulty in either paper.

3.3 Difficulty of stimulus/source material

Most source material was at an appropriate level of difficulty, considering that most candidates do not have English as their home language. The descriptions of investigations are not sufficiently detailed in some papers, e.g. 2013 Paper 1, Q 3.2; 2013 Paper 1, Q 4.1; 2013 Paper 2, Q 2.3; Exemplar Paper 2, Q 3.1. This factor contributes to difficulty in the examination papers.

All Tables, graphs and diagrams should be numbered and given titles. This is correct scientific practice and would enable examiners to avoid use "the above, the below, the following, etc."

4. Recommendations for improving the quality and standard of the examinations

The team agrees that the quality of most questions in the 2014 Final papers are acceptable, but there are too many questions that have invalid difficulty. Technical quality of the papers is very good. We recommend that the two papers should assess different skills and processes through using different formats. We recommend that there should be fewer questions worth 1 and 2 marks, which currently constitute a significant proportion of the papers.

The team expresses concern about the lack of depth in content questions, reflected in the small proportion of marks at Level 4. There are few questions requiring in-depth interrogation of information that enables the top performers to be discriminated from the average. We have noted an increase in Level 3 difficulty in 2014 Final papers relative to 2012 and 2013. 2014 Final papers show a decrease in Level 2 and 4 difficulty, and level 1 has decreased slightly relative to 2012. The proportion of marks allocated to ID has increased in 2014 Exemplar and Final papers.

Translation problems in the Afrikaans version of the examination papers and memoranda were raised by two team members. The inflexibility of the memorandum means that alternative correct terms may be marked incorrect if the candidate's answer is not exactly as stated in the memorandum.

5. Comparability of examination papers

5.1 Comparability of quality

The technical quality of the examination papers was considered to be very good for all years. Diagrams are clearly drawn, no spelling or grammatical errors are noted, the layout is good, and questions test the full curriculum.

5.2 Comparability of standards

	2014 Exemplar Paper 1	2014 Exemplar Paper 2	2013 Paper 1	2013 Paper 2	2012 Paper 1	2012 Paper 2
2014 Paper 1	Better than		Better than		Worse than	
2014 Paper 2		Much better than		Better than		Worse than

The judgements given in Table 5.1 are based on an overall impression of each examination paper, considered together with the analyses of cognitive

demand and levels of difficulty. In particular, we took note of the proportion of questions that were designated invalid. The Final papers of 2014 were considerably better than the exemplar papers and the 2013 papers, which were too easy. However, the examination papers of 2012 were better (fewer invalid questions) than any others analysed.

Performance of learners in 2014 will decline compared with 2013, because there is a lower proportion of difficulty level 1 and 2 questions and a higher proportion of Level 3 questions. There is sufficient scope for low-performing learners to pass, but insufficient scope for discriminating high performers. The reversal in the topics as well as the changes in weightings of cognitive demand in 2014 compared to 2013 must be taken into consideration. Confusion in the correspondence distributed before the exams will also impact negatively on performance. Essays are now no longer scaffolded as was previously the case, thereby contributing to the level of difficulty of the essays

The Exemplar papers were not adequately moderated and provided limited guidance to students on the level of questions to expect in the final papers. Exemplar Paper 1 was better than Paper 2 in this regard.

2.7: Mathematics – Department of Basic Education

SUBJECT: MATHEMATICS

1. Compliance with the CAPS

1.1 Format and structure

The following examination papers were analysed. The key content differences between the 2012-2013 papers and the 2014 papers have been highlighted. It is important to note these differences as the inclusion of probability in paper 1 of 2014 and Euclidean geometry in paper 2 of 2014 might have an impact on the results of the examination. Both these topics are generally considered to be demanding and there has been concern that some teachers might not feel confident teaching these topics.

Basics format and structure of papers analysed				
Year	Papers	Topics	Time	Marks
2012 - 2013	Paper 1	Algebra, Sequences, Financial mathematics, Functions, Calculus, Linear programming	3 hrs	150
	Paper 2	Statistics, Analytical geometry, Trigonometry, Transformation geometry	3 hrs	150
2014	Exemplar P1 and Nov Paper 1	Algebra, Sequences, Financial mathematics, Functions, Calculus, Probability	3 hrs	150
	Exemplar P2 and Nov Paper 2	Statistics, Analytical geometry, Trigonometry, Euclidean geometry	3 hrs	150

The 2014 papers complied with the basic format and structure stipulated in the CAPS.

1.2 Topic weightings of the 2014 papers

The table below shows the weighting of topics as stipulated in the CAPS and the weighting found in the 2014 examination papers.

	CAPS stipulation	2014 Paper 1		CAP stipulation	2014 Paper 2
Algebra	8%	7%	Coordinate geometry	13%	13%
Sequences	8%	10%	Trigonometry	13%	13%
Financial mathematics	5%	4%	Statistics	7%	7%
Functions	12%	9%	Euclidean geometry	17%	17%

Calculus	12%	14%	Bookwork ²	Max 4%	3%
Probability	5%	5%			
Bookwork ¹	Max 2%	0%			

The figures indicated in the table show that the 2014 papers comply with the stipulations in CAPS. Where there are slight differences (e.g. more marks in calculus and less in functions than CAPS stipulates) these occur in topics where there is considerable overlap (i.e. work with functions is part of calculus) and thus some marks within questions in these sections could equally well belong to the other category.

A point worth noting from the table is that the new topics in 2014 (probability and Euclidean geometry) account for 22% of the combined total of paper 1 and paper 2. This significant change in content from the 2012 and 2013 papers to the 2014 papers makes comparison of the levels of difficulty of the 2014 papers with those of previous years challenging.

1.3 Cognitive demand weighting in 2014 papers

CAPS stipulates a spread of cognitive demand according to a taxonomy which has 4 levels: knowledge, routine procedures, complex procedures and problem solving. The weighting stipulated in CAPS is shown in the table below along with a summary of the team's analysis of the 2014 papers in relation to cognitive demand.

	Knowledge	Routine Procedures	Complex Procedures	Problem Solving
CAPS	20%	35%	30%	15%
2014 Paper 1	11%	55%	29%	5%
2014 Paper 2	25%	52%	21%	2%
2014 Papers 1 & 2 combined	18%	54%	25%	4%

The table suggests that the 2014 papers did not comply with the weighting of cognitive demand as stipulated in CAPS. The team's analysis suggested that the papers were too heavily weighted towards routine procedures and did not contain sufficient weighting for problem solving. However the team felt that the problem might be a result of inadequacies in the taxonomy itself rather than a result of problems with the examination per se.

The CAPS document of 2011 and the Examination Guidelines released in 2014 provide descriptions of the levels of cognitive demand. However, the

² As bookwork will relate to particular topics the marks for bookwork will also be included in the marks for the topics where it appears.

descriptors of the levels are contradictory in places. (e.g. “estimation and appropriate rounding of numbers” is classified as “knowledge” in the Examination Guidelines, but as “routine procedures” in CAPS). In addition to the problems of contradictory descriptions in the two documents, the description of each of the levels in both these documents is not entirely clear. For example, it is not clear how “complex procedures” differ from “problem solving” as the descriptors for both allude to higher order reasoning, solving problems and having no obvious route to the solution. The team queried whether it would be possible, in a time-limited examination to include 15% worth of true problem solving questions (i.e. questions where there is no clear starting point or clues as to the approach to take). It is also not clear whether a well-known procedure that contains many steps or tricky algebraic manipulation should be classified as a routine or complex procedure. This makes the taxonomy very difficult to work with, and, means that differences between the team’s analysis of the papers and the stipulated weighting in CAPS might be a result of different interpretations of the categories.

1.4 Coverage of examinable curriculum

All the examination papers analysed covered the examinable curriculum. Clearly no examination paper can examine every detail of the curriculum. So for example, the DBE 2014 paper 2 does not examine the graph of the tan function in trigonometry. However the graphs of the sin and cos functions are examined here and the tan function is used in other trigonometry questions. Thus although no single examination paper examines every detail of the curriculum, all the examination papers provide full coverage of the examinable curriculum at a broader level (e.g. trigonometric graphs are examined even if it is not possible to examine EVERY trigonometric graph mentioned in the curriculum).

2. Quality of examination papers

2.1 Invalid sources of question difficulty or ease

No questions in the 2012 – 2014 were judged as having invalid sources of difficulty or ease.

However in 2012 Paper 1 question 7.1.2 implies that we can assume that the price of a machine rises at the rate of inflation. This is unlikely to be so and care should be taken to ensure that financial mathematics questions do not contain such financial misconceptions that could confuse.

The 2014 exemplar papers were clearly not as well checked as the actual examination papers have been and thus contain errors or lack clarity in parts. For example, in paper 1, question 6.2 the statement “if $g(x) > 0$ ” is confusing and the memo ignores this statement. It also means it is not certain whether the idea that $g(x) > 0$ should be considered when answering question 6.3. There is an error in the memo for question 6.4. In paper 2 question 2 it is confusing that

“3 weeks of holiday” is given but not used. However in question 2.3 when learners are asked to discuss who watched television more than 80% of the time, it is not clear what the total time alluded to is.

2.2 Other points regarding the quality of the examination

The diagrams and graphs in the examination papers were clear and appropriate.

The memos were generally of a good standard and provide mark allocations for various alternative methods of solutions to questions. The memos for the 2014 exemplar paper 1 contained an error in question 6.4.

The third alternative solution for question 4.4 in the 2014 paper 1 is incorrect.

The team felt the language used in the examination papers was generally clear and at an appropriate level. However we acknowledge that questions, particularly in the financial mathematics section and in applications of calculus and in probability and statistics, do require a good proficiency in English and an ability to interpret mathematical ideas in context.

2.3 Rating the quality of the examination papers

The team rate the quality (in terms of layout and format) of the DBE papers from 2012 – 2014 as good. The quality of the 2014 DBE exemplar papers was not as good and included some errors in both the paper and memo.

3. Standard of the examination papers

3.1 Levels of difficulty

The team judged the level of difficulty of questions based on the assumption that learners writing the examination would have been taught the full curriculum in an adequate manner. The team considered whether a question would be easy, moderate, difficult or very difficult for the average learner to answer. In order to help ourselves make clear and consistent judgments we further refined this as follows: Easy questions would be those questions that the the learner who just passes should be able to do. Moderate questions would be more challenging than this but still be accessible to the student aiming for a “solid pass” and should indicate a mastery of the routine procedures in mathematics. Difficult questions are challenging questions that would be aimed at those wanting to demonstrate a good grasp of mathematics. Very difficult are aimed at the top students. With these judgments in mind the teams proposed ideal split of weights were as follows:

Team's proposed ideal weighting	Easy	Moderate	Difficult	Very difficult
	30%	30%-35%	20%-25%	15%

DBE Paper 1	Easy	Moderate	Difficult	Very difficult

2012	23%	41%	31%	5%
2013	31%	32%	35%	3%
2014 exemplar	28%	28%	36%	8%
2014	29%	34%	32%	5%

DBE Paper 2	Easy	Moderate	Difficult	Very difficult
2012	23%	38%	29%	11%
2013	33%	27%	31%	10%
2014 exemplar	20%	50%	23%	7%
2014	37%	41%	20%	2%

DBE Paper 1&2	Easy	Moderate	Difficult	Very difficult
2012	23%	39%	30%	8%
2013	32%	29%	33%	6%
2014 exemplar	24%	39%	30%	7%
2014	33%	38%	26%	4%

Comparing the spread of marks in relation to level of difficult in the combined paper 1 and 2, we see that the 2012, 2013 and 2014 exemplar papers do provide the 60/65%-40/35% split between the easy-moderate and difficult-very difficult questions that the team considered desirable. However in all the papers there were too few very difficult questions and in 2012 and the exemplar paper of 2014 there were too few easy questions.

There was marked variability in the weightings of level of difficulty between paper1 and paper 2 in the 2014 exemplar papers. In addition the 2014 examination papers differed from the rest in that the weighting of levels of difficulty as judged by the team suggested the paper, with 71% of the marks at the easy-moderate level) was too easy. However it is very important to note that the team judged the level of difficulty of questions based on the assumption that learners writing the examination would have been taught the full curriculum in an adequate manner. However, the team notes that in 2014 Euclidean geometry and probability are being introduced into the examinations for the first time³. Anecdotal evidence suggests that many teachers will not have had much experience in teaching these topics and that many learners will not have received adequate preparation in these topics. These new topics account for about 22% of the total marks for Mathematics.

Because the Euclidean geometry in particular has been an area of concern, we extracted the information about the levels of difficulty of the questions on the 2014 paper relating to Euclidean geometry and show them in the table below:

³ Although these topics were examined prior to 2014 in paper 3, a very small percentage (less than 5%) of learners wrote paper 3.

2014 Euclidean geometry	Easy	Moderate	Difficult	Very difficult
% of Euclidean geometry questions	48%	32%	14%	6%
% of marks on paper 2	16%	11%	5%	2%
% of total marks on paper 1&2	8%	5%	2%	1%

The majority of questions in the Euclidean geometry section involved either identifying the reason why given facts were true, filling in the gaps in a seen proof or direct application of known facts. This meant that 80% of the Euclidean geometry questions were judged to be easy or moderate by the team. This, however, presupposes that Euclidean geometry has been taught adequately at all schools and that learners have had sufficient exposure to geometry in order to provide them with the confidence and ability to "see" geometrically. Although this should be the case in good schools, it is likely that in schools where teachers do not have experience in teaching geometry this is unlikely to have happened. Although it is very difficult to guess how the geometry questions will be experienced by learners who have not had adequate preparation in geometry, the team considered the following scenario as a possibility:

13% of the marks on paper 1&2 combined consisted of easy or moderate Euclidean geometry questions. If half of these were actually experienced by learners who have not had adequate preparation in geometry as difficult or very difficult the spread of levels of difficulty for paper 1&2 combined could look like this:

2014 corrected for poor geometry teaching	Easy	Moderate	Difficult	Very difficult
DBE paper 2	29%	35%	28%	8%
DBE paper 1&2	29%	35%	30%	7%

In this scenario we see the 2014 papers follow a similar pattern to those of previous years. Here the weighting of levels of difficulty is broadly appropriate except for the fact that there are too few very difficult questions.

3.2 Examples of questions at different level of difficulty from the 2014 papers.

Examples of easy questions

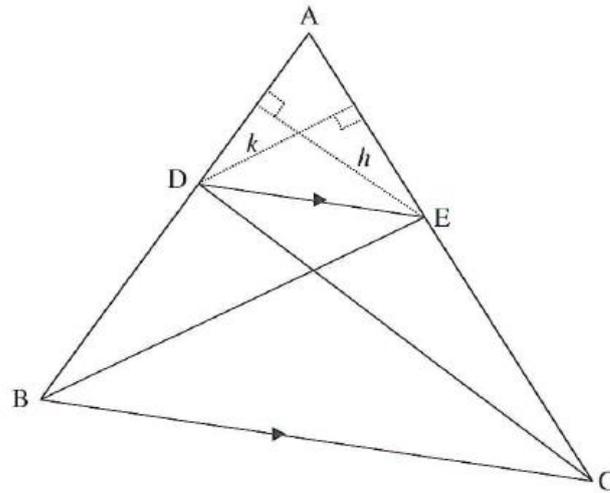
Solve for x :

$$1.1.1 \quad (x-2)(4+x)=0$$

$$1.1.2 \quad 3x^2 - 2x = 14 \text{ (correct to TWO decimal places)}$$

Both question 1.1.1 and 1.1.2 would be very familiar questions and are both straight forward procedures to perform. Question 1.1.2 requires the learners to substitute values into a known formula (which is on the formula sheet provided with the paper).

- 9.1 In the diagram, points D and E lie on sides AB and AC of $\triangle ABC$ respectively such that $DE \parallel BC$. DC and BE are joined.



9.1.1 Explain why the areas of $\triangle DEB$ and $\triangle DEC$ are equal. (1)

9.1.2 Given below is the partially completed proof of the theorem that states that if in any $\triangle ABC$ the line $DE \parallel BC$ then $\frac{AD}{DB} = \frac{AE}{EC}$.

Using the above diagram, complete the proof of the theorem on DIAGRAM SHEET 4.

Construction: Construct the altitudes (heights) h and k in $\triangle ADE$.

$\frac{\text{area } \triangle ADE}{\text{area } \triangle DEB} = \frac{\frac{1}{2}(AD)(h)}{\frac{1}{2}(BD)(h)} = \dots\dots$
$\frac{\text{area } \triangle ADE}{\text{area } \triangle DEC} = \dots\dots\dots = \frac{AE}{EC}$
But area $\triangle DEB = \dots\dots\dots$ (reason: $\dots\dots\dots$)
$\therefore \frac{\text{area } \triangle ADE}{\text{area } \triangle DEB} = \dots\dots\dots$
$\therefore \frac{AD}{DB} = \frac{AE}{EC}$

(5)

Question 9.1.1 and 9.1.2 test learners knowledge of known facts and recall of elements of the proof of a theorem that is designated as bookwork (i.e. as a proof that has been given to learners in class and learners are told to study it).

Examples of moderate questions

Questions in this category tended to involve procedures that would be familiar to learners that are fairly straightforward to perform.

Given: $f(x) = (x+2)(x^2 - 6x + 9)$
 $= x^3 - 4x^2 - 3x + 18$

9.1 Calculate the coordinates of the turning points of the graph of f . (6)

9.2 Sketch the graph of f , clearly indicating the intercepts with the axes and the turning points. (4)

7.2 Show that $\sin x + 1 = \cos 2x$ can be rewritten as $(2 \sin x + 1) \sin x = 0$.

7.3 Hence, or otherwise, determine the general solution of $\sin x + 1 = \cos 2x$.

Examples of difficult questions

7.2 Samuel took out a home loan for R500 000 at an interest rate of 12% per annum, compounded monthly. He plans to repay this loan over 20 years and his first payment is made one month after the loan is granted.

7.2.1 Calculate the value of Samuel's monthly instalment. (4)

7.2.2 Melissa took out a loan for the same amount and at the same interest rate as Samuel. Melissa decided to pay R6 000 at the end of every month. Calculate how many months it took for Melissa to settle the loan. (4)

Questions involving annuities were generally considered difficult questions by the team because, although they should be fairly familiar to learners each requires interpretation of the context and generally involves quite messy calculations.

6.3 If $\sin 76^\circ = x$ and $\cos 76^\circ = y$, show that $x^2 - y^2 = \sin 62^\circ$.

This trigonometry questions would not be routine for learners and they would need to think about how to approach it. However the team did note that this question should stipulate that a calculator should not be used for this question.

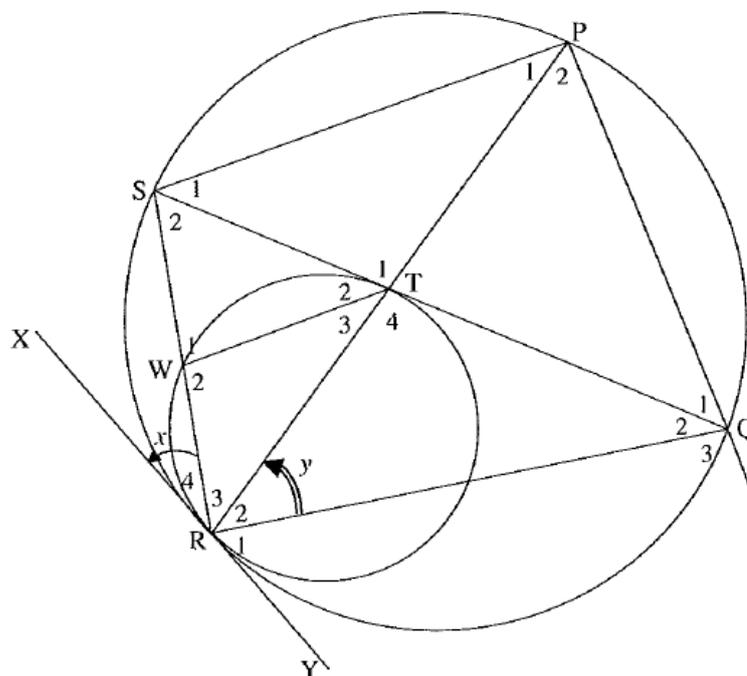
Examples of very difficult questions

3.3 Determine the value of: $\left(1 + \frac{1}{2}\right)\left(1 + \frac{1}{3}\right)\left(1 + \frac{1}{4}\right)\left(1 + \frac{1}{5}\right) \dots$ up to 98 factors.

This question requires insight to see how one could approach this in order to calculate the product. There is no well rehearsed procedure that can be used to tackle it.

The two circles in the diagram have a common tangent XRY at R . W is any point on the small circle. The straight line RWS meets the large circle at S . The chord STQ is a tangent to the small circle, where T is the point of contact. Chord RTP is drawn.

Let $\hat{R}_4 = x$ and $\hat{R}_2 = y$



10.6 Hence, prove that $\frac{WR}{RQ} = \frac{RS^2}{RP^2}$.

Although some of the previous questions (i.e. 10.1 – 10.5) would have provided some scaffolding for 10.6, learners need to work with a complex diagram and make considerable connections to produce the proof required.

4. Recommendations for improving the quality and standard of the examinations

The team felt that the format and structure of the 2014 papers was of a good standard and provides a good model for future papers.

The one aspect of particular concern was the level of difficulty of paper 2. Although the team understands that the reintroduction of Euclidean geometry and the heavy weighting of this section meant that the examiners needed to be cautious not to make the paper too difficult, future papers need to ensure a gradual increase in the demand of the Euclidean geometry section. In particular the team would like to see less questions that simply require learners to fill in the reasons or fill in the gaps in a proof in future papers. In addition to this the heavy weighting of Euclidean geometry has resulted in less weighting for trigonometry and this has meant that there were fewer rich and challenging trigonometry questions in 2014 than there had been in previous years. The data handling and statistics questions are largely routine calculations and it would be desirable to see the inclusion of questions that test statistical insight.

In addition to these main concerns the team pointed out the following smaller issues for consideration of the examiners:

- a) In a question like 2014 paper 2 6.3, learners need to be instructed not to use a calculator.
- b) In question 5.1 the fact that learners are asked to “prove that $a = 3$ ” makes the question easier than simply asking learner to find a . Although giving learners the value of a makes the marking of questions dependent on the answer to 5.1 easier, it does have the trade-off of reducing the demand.

5. Comparability of examination papers

5.1 Comparison of overall quality (format, structure, layout, language) of the examination papers of 2014 to previous years

Quality	Paper 1	Paper 2
2012	Similar to 2014	Similar to 2014
2013	Similar to 2014	Similar to 2014
2014 exemplar	Contained some errors	Contained some errors

In general the quality (in terms of format, structure, clarity, language) of the DBE papers of 2012, 2013 and 2014 have been consistently good. The exemplar paper contained some errors.

5.2. Anticipated performance of learners in 2014 in comparison to previous years

The team's analysis of paper 1 of 2012, 2013 and 2014 suggests that the performance of learners on paper 1 of 2014 should be very similar to that of 2013. We anticipate it would be quite similar to that of 2012 as well, although the 2012 paper had slightly fewer easy marks i.e marks for the “just passing” learners. In 2012, 2013 and 2014 we felt that, although the weighting of levels of difficulty was generally adequate, we did not feel that there was sufficient to distinguish the very top candidates.

The team's analysis of paper 2 suggests that, learners who have been taught geometry well should perform better on this paper than they did on the 2012 and 2013 papers. In particular the 2012 and 2013 had 11% and 10% weighting respectively of very difficult questions which has reduced to only 2% in 2014. Thus we feel that there is less to really challenge the top candidates in 2014. Similarly the percentage of difficult questions has dropped from 29% and 31% in 2012 and 2013 to 23% in 2014.

However, as noted in section 3.1 above, the team was cogniscent of the fact that many learners might not have been taught geometry adequately. It is hard to predict the exact effect this will have on performance, but the possible scenario outlined by the team in section 3.1 suggests that these learners should perform similarly on 2014 paper 2 to how they would have on 2012 and 2013 paper 2.

The performance on paper 1&2 combined is obviously influenced by the issues discussed in relation to paper 2 above.

Thus if learners have been taught geometry adequately they should perform better in mathematics in 2014 than they did in 2012 and 2013. There is a simliar

percentage of easy questions in 2014 to what there was in 2013, so we would not necessarily expect more passes at the 30%, but we would expect better performing students to do better in 2014 than they did in 2012 and 2013. However for learners who have not had adequate preparation in geometry, we would expect the performance in mathematics in 2014 to be similar to that of 2012 and 2013.

2.8: Mathematical Literacy – Department of Basic Education

SUBJECT: MATHEMATICAL LITERACY

1. Compliance with the CAPS.

1.1 Format and structure

Exam paper	Cognitive focus	Duration (hrs)	Mark allocation
2014 DBE Ex P1	Mainly at the two lower cognitive levels	3	150
2014 DBE Ex P2	Mainly at the two higher cognitive levels	3	150
2014 DBE P1	Mainly at the two lower cognitive levels	3	150
2014 DBE P2	Mainly at the two higher cognitive levels	3	150

The 2014 DBE Exemplar and 2014 Final Mathematical Literacy Papers complied in every respect with the format and structure of the examination as described in the Assessment Guidelines.

According to CAPS,

- Paper 1 covers questions mainly at the two lower levels of cognitive demand. It consists of 5 questions. Four questions deal with each of the following Application Topics: Finance (AT1), Measurement (AT2), Maps, plans and other representations of the physical world (AT3) and Data Handling (AT4). The fifth question integrates content from across all of these topics. Probability (AT5) is included in one or more of the other questions.
- Paper 2 consists of 4 or 5 questions mainly at the two higher levels of cognitive demand and a smaller proportion at the second level. These questions are all integrated across all the five Application Topics.
- Basic Skills are integrated throughout all questions of both papers, and therefore not weighted with respect to cognitive demand. Each paper counts for 150 marks, is allocated 3 hours and both are equally weighted.

This examination format is a shift away from the NCS in which about 20% of Paper 1 consisted of de-contextualised basic numerical questions whereas in CAPS every question is set in an authentic context.

1.2 Cognitive demand weightings

Table 2a - Comparison of the cognitive demand weightings specified and the percentage weightings for the 2014 DBE papers.				
Paper	Percentage of marks allocated to questions at each of the different types of cognitive demand			
	Knowing	Routine Procedures	Multi-step Procedures	Reasoning and Reflection
2014 Ex DBE P1	36	62	2	0
2014 Ex DBE P2	2	30	37	30
2014 DBE Ex Overall	19	46	20	15
2014 DBE P1	24	72	4	0
2014 DBE P2	0	33	37	31
2014 DBE Overall	12	52	20	15
CAPS for P1	60 (±5)	35 (±5)	5 (min)	0
CAPS for P2	0	25 (±5)	35 (±5)	40 (±5)
CAPS Overall	30 (±5)	30 (±5)	20 (±5)	20 (±5)

From Table 2a above, the following comments can be made about the 2014 DBE Exemplar and Final Mathematical Literacy Papers:

2014 DBE Ex and 2014 DBE Final

- The percentage marks allocated to Knowing is **significantly lower** than the CAPS requirements.
- The percentage marks allocated to Routine Procedure is **significantly higher** than stipulated in CAPS.
- There is a very good overall compliance at the Multistep procedure levels as stipulated in CAPS.
- The percentage marks allocated to Reasoning and Reflection in Paper 2 is **generally at the minimum** required by CAPS.

The team believes that there is a significant area of overlap between cognitive levels 1 and 2. It can be seen from the table that in every year the sum of the two levels equals the sum of the specified number of marks. This is because there is a lack of clarity about the type of question in these two levels in the CAPS. Since the CAPS gives only limited examples of types of questions at every level, the evaluation team often has difficulty in agreeing on the interpretation of the cognitive level of a question because the difference is a matter of interpretation, nuance, emphasis or degree. It is our opinion that **these two cognitive levels are actually at the same level of cognitive demand** and should be conflated into one level with two strands or types of question.

[It should be noted that the Mathematical Literacy team has created a large data base of types of questions based on years of exam evaluation which they use to classify questions. The examples are absolutely compliant with CAPS. This year the team has differentiated the types of questions with respect to cognitive level **and difficulty where possible.**]

Regarding the questions at the highest level of cognitive demand, the team felt that there are **too few really challenging questions at this level**. Since the CAPS regards 'making a judgement' (after solving a complex problem at level 3), 'giving an opinion' or 'verifying an assertion' as level 4 thinking the marks are often at the easiest level because the answer is obvious or trivial. The marks awarded for cognitive level 4 questions at different difficulty levels in the Exemplar and the Final 2014 papers are shown in the following table:

Difficulty level	2014 Exemplar	2014 Final
Easy	12	13
Moderate	23	22
Difficult	6	2
Very difficult	2	0

1.3 Topic weightings

Table 3: Comparison of the percentage topic weightings specified with the percentage weightings for the 2014 DBE papers.							
	2014 DBE Exemplar			2014 DBE Final			CAPS
Topics Application	P 1 (%)	P 2 (%)	Combined Overall (%)	P 1 (%)	P 2 (%)	Combined Overall (%)	Specified Combined Overall (%)
Finance	36	30	33	29	31	30	35 (±5)
Measurement	18	24	21	17	19	18	20 (±5)
Maps, Plans,	16	13	15	18	15	16	15 (±5)
Data Handling	27	27	27	31	32	31	25 (±5)
Probability	4	6	5	5	4	4	5 (min.)

[The total of the percentages above may not be 100 because of rounding.]

The CAPS does not specify weighting per paper of the Application Topics.

For the 2014 DBE Exemplar Paper: Table 3 shows that there is very good overall compliance with the weighting of Application Topics as stipulated in the CAPS. The examination appears a little light on Maps, Plans, etc but this can be ascribed to the integrated nature of the questions in Paper 2. The actual data shows this by coding two Application Topics for some of the questions, while not splitting the marks.

For the 2014 DBE Final Paper: Table 3 shows that there is fairly good overall compliance with the weighting of Application Topics as stipulated in the CAPS. However the number of marks awarded to Finance is the minimum allocated and for Probability the number of marks is below the minimum allocation. The examination appears to award too many marks to Data Handling although as the questions in Paper 2 are integrated across all the topics some topic distinctions may be blurred.

1.4 The rating for coverage of the examinable curriculum.

Table 4: Coverage of examinable curriculum in 2012 DBE, 2013 DBE, 2014 DBE Ex and DBE 2014 papers.			
	Paper 1	Paper 2	Combined overall
2012 DBE	Most of the curriculum	Most of the curriculum	Almost all
2013 DBE	Most of the curriculum	Most of the curriculum	Almost all
2014 DBE Ex	Most of the curriculum	Most of the curriculum	Almost all
2014 DBE	Most of the curriculum	Most of the curriculum	Almost all

The design of the Mathematical Literacy examination requires that the whole curriculum be covered by the two papers which are equally weighted. Therefore it is unrealistic to expect that each paper will cover the whole curriculum. The sub-topics that were omitted constitute very little of the total number in the whole curriculum.

Table 5: Topics that were omitted in all examinations	
2012 DBE	Inflation Models (packaging)
2013 DBE	Banking loans and investments Inflation Prediction
2014 DBE Ex	Income and expenditure Inflation Time calculations Scale
2014 DBE	Banking, loans and investments
All papers: Topics which are impossible to examine in a written examination.	Measurement of mass and volume Developing questionnaires Collecting and classifying data Building models

1.5 Other points regarding compliance with specified assessment requirements

The CAPS states '**it is essential that assessment items and examinations draw on realistic and authentic contexts.** Learners should be asked to interpret newspaper articles, real bank statements, real plans and other authentic resources, rather than contrived problems containing only a semblance of reality' (CAPS, page 108.) All three examinations contained contrived questions which were clearly designed to test the mathematics, instead of authentic real life problems which require mathematics to solve. See the questions listed below, which were **the worst of the contrived questions**. Many which are not listed were only weakly authentic.

2012 DBE: P1: Q2.1; P2: Q2.3;

2013 DBE: P1: Q1.2-3; Q4.1; Q5.1; P2: Q 1.2-3; Q2.1; Q3.3.1; Q5.2.2;

2014 DBE Ex: P2: Q1.1.2;

2014 DBE: P1: Q3.1

The 2014 Final Paper was the best examination so far with regard to using authentic, real-life, relevant contexts.

2. Quality of examination papers

2.1 Invalid sources of question difficulty or ease

Table 6: Number of questions assessed as having invalid sources of difficulty of ease.		
Paper	Number of questions	Number of marks
2012 DBE P1	1	2
2012 DBE P2	3	15
2013 DBE P1	3	11
2013 DBE P2	0	0
2014 DBE Ex P1	0	0
2014 DBE Ex P2	2	12
2014 DBE P1	1	2
2014 DBE P2	2	5

The following comments provide details of the invalid sources of difficulty that were found:

- 2012 DBE P1 Q5.1.3 - 'exterior side length of house' might refer to any of the exterior lengths of the house (A candidate could have used any of the sides of the house)
- 2012 DBE P2 Q1.2 - Accommodation tariff is given as 'R1 050 per day' but in actual life accommodation is charged 'per night' (A major impact on marks for candidates as the whole question is directly affected by this cost. There are many marking options available. This would have impacted the **higher end achievers** more who would have thought about the inconsistency instead of just working out a formulaic answer.)
- 2012 DBE P2 Q1.2.2a - 'Equation that could be used to calculate total cost of meals eaten at the guesthouse' implies that students should determine an equation considering that not all meals are to be eaten at the guesthouse. (Memorandum considers basic formula for cost, regardless of where the meals were eaten. This would have impacted the **higher end achievers** more who would have thought about the inconsistency instead of just working out a formulaic answer.)
- 2012 DBE P2 Q 2.3.1 - 'Give TWO practical reasons why sand was placed in the braai drum'. (Contrived question) Very easy to obtain these marks and lowers the difficulty level of the paper.
- 2013 DBE P1 Q2.1.4 -Diagram does not show what the question implies. The semi-circular section closes in and therefore the pattern cannot continue 1, 3, 5... The next value will not be 7 as this won't fit. (If student used diagram, the solution will be incorrect.)
- 2013 DBE P1 Q4.1.6 - Give the ratio in simplified form rounded off to nearest whole number. (Even in simplest form, rounding was not possible. Question could have asked 'give ratio'.)
- 2013 DBE P14.2.1-4 - Four questions asked candidates to identify provinces on a map of SA by consulting a key. (The key was partly obscured by the printing process and therefore the questions made no sense reading off the map. The marks would have been impossible to attain.)
- 2014 DBE Ex. Q2.1.2 – Incorrect formula given. Should state 'Surface area of the *curved section* of a cylinder' (Top candidates would have been misled and confused.)

- 2014 DBE Ex P2 Q2.2.2 - Misprint on question paper. There is no R453 on the map. (All learners would have been unable to achieve these 4 marks.)
- 2014 DBE Ex P2 Q4.3.1 - The language is ambiguous. "If she surveys 12 more customers" can mean "another 12 separate customers" or "12 more than the 18 she has already surveyed, making 30". (Some learners would have been unable to achieve these 4 marks.)
- 2014 DBE P1 Q1.2.7a – The wording of the question should have been 'Frank's Supermarket rounded **down** the total amount to the nearest 5 cents, instead of rounded **off** to nearest 5 cents. Learners who rounded off, and in this case up, would have not attained the marks. It is not a fair assumption that all learners know that supermarkets round down regardless of the cent value.
- 2014 DBE P2 Q2.1.2 – The question is invalid because it asks for two factors, **besides petrol consumption**, that influence the distance travelled by a car on a full tank of petrol and then gives as possible answers only factors which affect petrol consumption. The question should rather have read 'State two factors which affect petrol consumption of a car and therefore the distance travelled on a full tank of petrol.' Marks were unattainable if the question was carefully understood.
- 2014 DBE P2 Q3.2.4 – The wording of this question is very poor. The answer in the mark memo does not agree with what is asked. For the answer given the question should have read 'By how much more money will the defence budget have increased if rounding up to R48 billion is used?'

In 2014 DBE EX. P2 8 marks were impossible to attain and 4 were at risk of not being attained. This constitutes 2.7% of the marks for the exam. This is unacceptable. Time spent on these questions may have negatively affected the attention given to further questions.

In 2014 DBE P1 and P2 7 marks were at risk of not being attained. This constitutes 2.3% of the marks for the exam. Time spent on these questions may have negatively affected the attention given to further questions. This is, however, a significant improvement on all previous years.

2.2 Other points regarding the quality of the examination

2.2.1 Language level:

Because Mathematical Literacy uses a lot of text examiners need to be sensitive to the use of unusual English idioms, phrases or words.

2012 DBE

Very few difficulties were apparent. There are some which have been referred to in 2.1 above. For the most part the language was appropriate and concise.

2013 DBE

Very few difficulties were apparent. There was one instance of unfamiliar terminology for mode (Afrikaans 'modus'). However, for the most part the language was appropriate and concise.

2014 DBE Ex

In both Paper 1 and Paper 2 the language level was appropriate and accessible. The instructions and the questions were clear there was no unnecessary wordiness.

2014 DBE Ex P1 language issues:

Q 1.3.1 The word 'initiation' fee is not in familiar use in the curriculum. However, the question did not depend on the understanding of the word.

Q2.2.1 The word 'arc' might also have presented difficulty as it was used to mean 'semi-circle circumference'. Again, the question could be answered without understanding the meaning of 'arc' as the formula was given to calculate the length of the arc.

Q4.1.2 used fairly complicated sentence construction 'write down the name(s) of the room(s) of which the door(s) is/are facing east'. A more direct way to ask this question could have been found.

Q4.1.4 Use of 'the scale length of the southern wall' is unfamiliar usage.

Q5.2.2g Asked candidates to express 'the likelihood' of an event, when the mark memo clearly expected a calculated probability. The answer 'highly unlikely' would have been a correct answer, but the mark memo did not make provision for that.

2014 DBE Ex P2 language issues:

Q4.3.1 was ambiguous and has already been listed in the invalid difficulty Table 4 above.

2014 DBE P1 language issues:

Q1.2.7 uses 'rounded off' when it should have used 'rounded down'.

Q2.1.1 Including the word 'total' twice in this question made it confusing. Should have omitted it both times.

Q3.1.2 Use of the terminology 'scaled length' is not used in textbooks, nor in CAPS nor in common use. Rather refer to the length as 'the length shown on the plan/map'.

2014 DBE P2 language issues:

Q4.3 uses 'replica' which is an unfamiliar term for most learners. Perhaps it could have been explained or followed by 'a copy' the first time it was used.

One of our team noted that Q3.2.4 would have presented a high degree of difficulty in the Afrikaans version of the paper as the terminology for billion and trillion in Afrikaans does not have the same numerical value as in English.

2.2.2 Format of questions

a. Technical difficulties.

2012 DBE

- No technical difficulties were found.

2013 DBE

- Printing of a map with a key which has been super-imposed can vary between provinces. In the case of KZN province the key was partly obscured and 7 marks of the question were of invalid difficulty. (P1: Q4.2)

2014 DBE Ex

- The inclusion of photographs for merely illustrative purposes is unnecessary and inappropriate. (P1: Q1.2 and P2: Q 3.1.)
- When a question requires a candidate to measure a length on the exam paper, the length varies with printing in different provinces, which makes the question more difficult or invalid for those candidates. (The case of KZN province) (P1: Q5.2.1)
- The inclusion of actual maps from which candidates are to answer questions can be problematic if the printing is not clear or is faint. (The case of KZN province) (P2: Q2.2.1)

2014 DBE

- On page 2 of both P1 and P2 under the heading, INSTRUCTIONS AND INFORMATION, point 7 would read better if it stated 'Round off all final answers to 2 decimal places unless the context suggests otherwise.'
- P1 Q 1.2.8 (b), the % sign in the formula should not be there.
- P1 Q4.1.5 Learners are not asked to simply the ratio but the mark memo accepts only a simplified answer.
- P1 Q4.1.7 The Answer sheet B shows vertical bars in which the learner needs to draw a short horizontal line. For some this could have suggested a stacked bar graph which would have been confusing. It would have been better to ask the learners to draw the entire bar themselves, without giving them the empty vertical bar. It would have tested the skill more clearly.

- P2 Annexure A, there are TWO different versions of this Annexure, one has commas on the vertical axis and the other one has no commas.
- P2 Q 1.3, the question contradicts the philosophy of the subject as specified in CAPS, where the Mathematical content should be used to explain the context. Here it is the opposite; learners are required to interpret the graph, which is Mathematical skill.
- P2 Q4.4 had a lot of information, both diagrammatic and textual which used almost 90% of the page.

b. Misleading/Problem questions

The following comments provide details of misleading or problem questions that were found:

2012 DBE

- P1 Q2.2.1 - Percentage symbol (%) should be omitted in order to determine actual percentage. % means "divide by 100" therefore the formula should not have included division by 100.(Learner would not be impacted as both answers are considered)
- P2 Q2.1.2 - '41,5 minutes' should have been 40,5 minutes

2013 DBE

- P1 Q1.2.3 - Two diagrams were unnecessary as it could distract candidates. Two circular sections in CDs can be a problem if a student does not understand the two inner circles of the CD. Diagram has both circles white.
- P1Q5.1 - Diagram is unnecessary and can be a distractor

2014 DBE Ex.

- P1 Q5.1.3 – 'Describe how Kevin's taxable income was calculated' did not require a calculation. Mark memo awarded marks for a verbal explanation.
- P2 Q1.1.3b – 'Explain how fixed expenses were calculated' and awards marks only for showing the calculation of the fixed expenses. Should have asked 'Show the working to obtain the fixed expenses'.

Examiner needs to clearly state whether a calculation is required or a verbal explanation is required.

2014 DBE

- P1 Q2.1.2 – The question does not state that Tina uses the wire fence, gate **and the poles** of her existing fence. Some learners would have assumed that they therefore needed to buy poles for that part of the fence. Some learners would have assumed that the poles could not be re-used because they were cemented into the ground and they would have to buy poles. In both cases they would have got the answer wrong and lost the marks.
- P1 Q2.1.3 is a trivial contrived question which should not be part of Mathematical Literacy assessment!

- P1 Q3.1 is also a contrived question. The team had never heard of or seen a scale diagram of a shirt. Scale drawings are typically of buildings, structures or areas of land.
- P2 Q1.3.1 It is not clear from the CAPS whether this type of skill, namely creating and equation from a sloping line, is assumed in the Basic Skills or assumed to have been taught in Grade 9. If it is not in the CAPS then this question is of **invalid difficulty**. If it is subsumed in the Basic Skills or in Grade 9 then it is a Very Difficult question. For the purposes of this report it has been left as Very Difficult.
- P2 Q4.2 The diagram does not indicate whether the distance is given by the length of the arrow or the position of the city name.

c. Format

2012 DBE

Both papers are good models for future use with respect to format. The layout was clear and not crowded. The text demanded a high reading competence because of the amount of text. There was also a lot of comparison of text with tables in order to answer the question (See Paper 2, Q4.2 and Q5.2). The format of Paper 1 Q6 distinguished creatively between information and questions by putting information in boxes and questions as free text.

The evaluation team noted that the examiner used many questions involving reading off either a table or a graph (Four in P1 and three in P2).

P2: The evaluation team noted that there were many questions with a high mark allocation. In paper 2, 41 marks out of 150 were for questions of 7 or more marks. This may be a disincentive for lower achievers to even attempt, especially at the beginning of the paper.

No typographical or mathematical errors were found in either paper.

2013 DBE

Both P1 and P2 contained some highly contrived questions (P1: Q1.2, Q 2.1.4, Q and P2: Q1.2 and 1.3, and Q 4.1.1 and 4.1.2) which were clearly designed to test the mathematics involved (mostly spatial topics). P2: Q5 also used a graph which had been manipulated and which was not authentic.

P1 contained 11 questions in which a candidate had merely to substitute given values into a given formula to obtain the marks. In the view of the team, this is too many and too easy.

2014 DBE Ex Paper 1:

The questions were well scaffolded to enable candidates to progress from familiar to less familiar concepts and skills. However, there was a sense in this paper of some questions contrived in order to use the mathematics. See Q1.2 and Q5.2.1, both of which are unlikely to ever happen in real life in the way presented in the question.

2014 DBE Ex Paper 2: Similarly, there was also a sense in this paper of questions contrived in order to use the mathematics. See Q1.1.2a and b (no-one ever organises the arrangement tables plus chairs to fit into the area of a school hall in the mathematical way presented) and Q 4.3 (contrived use of probability) as examples.

Regarding the actual questions the following problems were noted.

2014 DBE Ex Paper 1:

Q3.2 – The pie chart was an unfamiliar representation and not authentic. The sector labels should have been '0-14 years' rather than '0-14,'.

Q4.1.5 – The hint was unnecessary and increased the ease of the question.

2014 DBE: Both papers are good models for future use with respect to format. The layout was clear and not crowded. The text demanded a high reading competence because of the amount of text.

2014 DBE Paper 1: The paper was well-designed. Almost all the source material was authentic, interesting and appropriate. There was a variety of questions testing different skills at different levels. There were good diagrams and images, none of which were unnecessary.

Q1 – It would have been easier to answer the questions if the fill slip had been on the same page as the seven questions which referred to the slip.

2014 DBE Paper 2: This paper was also well designed and contained interesting and authentic source material. There were some unusual questions which is a good thing.

Apart from some language issues referred to above there were no format problems with this paper.

2.2.3 Contextualization of questions

In Mathematical Literacy, where 'context is everything' the contextualization of questions cannot be divorced from the stimulus material.

2012 DBE

Most questions were based on authentic situations and used real data. There was a spread of contexts, some of which would have been prejudicial to a learner in a rural or an urban setting, like 'a braai drum', fuel capacity of aircraft, flight schedule, and import of crude oil.

2013 DBE

While some questions were not based on authentic situations, there were a few which used real data (StatsSA for example) and were relevant to the context of the typical candidate.

2014 DBE Ex

Very few authentic items were used for the questions in both papers, very little of the stimulus material was an authentic document.

P1: In Q1.1 a photo of real bank statement could have been used. Q3.2 could have been based on similar data from a real source. Q4.1 could have been a real house plan. Q5.1.5 could have used an actual SARS tax table.

The authentic recipe with the photo, which comes from a known magazine in Q2.1, the actual photos showing the dimensions of the vegetable tunnels in Q2.2 and the table of real data in Q3.1 were good examples of authentic stimulus material.

P2: There was only one vaguely authentic document, namely a diagram of the SALT in Q 2.1.3. For the other questions the information was manufactured and contrived in order to ask questions. In Q1.1.2a and b an utterly unrealistic way of deciding how to arrange tables in a school hall was given. This is an example of trying to find a way to contrive a situation in order to use certain mathematics, instead of stating a problem which required mathematics to solve. In Q 3.1 another unrealistic table was contrived with car ages instead of years of manufacture (as is the normal way). Information about prices of cars and their year of manufacture is available in most newspapers at least once a week.

2014 DBE

Very few contrived contexts were used for the questions in both papers, very little of the stimulus material comprised inauthentic documents.

P1: Examples of authentic contexts:

Q1 - A real till slip was used to test various financial skills.

Q2 –A real table of data about water storage tanks was used – relevant topic in SA today.

Q4 – A table from the Government Gazette listing e-Tools was used – very topical and relevant.

Q4 – Funding and Capital Expenditure for a major South African metropolitan area was used, which is appropriate for Grade 12 learners about to enter adult life.

P2: Examples of authentic contexts:

Q1 used a set of data about violent incidents in a SA school from a real website. Very interesting for teenagers some of whom are in that environment.

Q2.2 used material from the WHO relating to childhood development – made for an interesting question, too.

Q4 would have been a context which was unfamiliar to most learners, namely booking seats in an opera house. Even booking seats is unfamiliar to many learners. The layout of an opera house and the idea of levels and zones would have been very remote from their experience.

2.2.4 Inappropriateness of stimulus material:

The source materials are very important in this subject. However, in all the papers, the stimuli tend to be made complicated by being contrived, rather than being authentically challenging. In many of the papers oversimplified constructions, or tables or graphs makes the examination too easy and not at the appropriate Grade 12 exit-level. This has been referred to above in discussion of the use of contrived questions with manipulated graphs or simplistic diagrams all of which do not represent authentic problems in real life.

2014 DBE Final Papers: The two papers are greatly improved with respect to stimulus material. It is the team's opinion that this is the first paper that approximates genuine Grade 12 exit level source material. For example, in Paper 1 (Q4.1) a real e-Toll tariffs table (from the Government Gazette No.36912) is used as the basis of the questioning. In Paper 2 the final question (Q4.4) gives a set of images of a display cabinet and diagrams of five stages of assembly. Learners are required to write the assembly instructions for the person putting the parts together to make the cabinet. This is a very good assessment of vital communication skills using an authentic real-life problem.

Also in Paper 2 (Q2) learners are given a very unfamiliar graph (from the WHO) to make sense of and in Q4.2 a completely unfamiliar diagram (from a website) is used to assess spatial understanding and direction.

2.2.5 The inadequacy and inaccuracy of marking memorandum

Disclaimer: These comments are based on the version of the marking memo given to the team by Umalusi at the start of the evaluation in every year. A later version of the marking memo would have undoubtedly corrected the errors.

2012

P 1 Q2.3.3: Why does the memo offer 3 hours as a possible answer? Answer can be only 2 hours

2013

The marking memo was deemed adequate and error free.

2014 DBE Ex The mark memo was unsatisfactory and contained too many errors.

P1:

- Q2.1.6, the answer should be 0,31lb., correct to TWO decimal places as specified under "Instructions", not 0,308lb.
- Q4.1.5, the multiplication in the 1st step should be 8,6cm x 110 not 8,6cm x 110cm, and the final answer should be 9,46m not 9,46cm.
- Q5.1.3 does not give the actual calculated answer, only the way marks are awarded. Ambiguity in the instructions to the candidate.
- Q5.1.4b: The actual intersection of the two graphs is at 2.5 years. The correct answer cannot therefore be both after 2 years AND after 3 years. Three marks are awarded for an incorrect answer.

P2:

- Q2.1.3b, 32,8ft. should have been used in calculations not 32ft.
- Q2.2.2, the R453 turn-off is not shown on the map.
- Q3.1.1, the second value in the numerator with respect to calculation of the mean should be 68 not 65, giving a mean of 111 741,67. Hence the final answer should be R112 000,00.

2014 DBE The mark memo was unsatisfactory and contained too many errors.

P1:

- Q1.2.7(a) Because the wording of the question is inadequate the memo should allow two answers, namely R318,55 and **R318,60**.
- Q2.2.2 The final answer does not round off appropriately in terms of the context (as per the front page instructions). The volume of a water tank would never be 11 405,64 litres. Memo should be **11 406 litres**.

- Q4.1.5 does not ask for a simplified ratio but the mark scheme awards a mark for simplification.
- Q5.1.2 The straight line sloping graph is incorrect in the mark memo. Because the charge of the taxi is R12 per km **or part thereof** after the first three km, the graph should be in steps of horizontal lines after 3km on the horizontal axis. Each short horizontal line should have an open circle at the left hand end. This is problematic as open-ended lines are not part of the CAPS curriculum. This error affects 5 marks.

P2:

- Q1.3.1 The mark memo does not show how the gradient of the line was obtained nor award a mark for the method of obtaining it.
- Q1.3.2(b) The method given to obtain the answer in the mark memo is a very unfamiliar one and only that method is awarded marks. The answer can also be obtained by proportional reasoning or by pure logic. The correct ratio should be awarded the full 5 marks no matter how it was obtained.
- Q2.1.2, All the answers given refer to factors that affect petrol consumption but the question specifically says to give TWO reasons, besides petrol consumption, that determine how far a car can go on a full tank of petrol.
- Q2.1.3 There is an error in the second last line of working. The amount should be **R35 872,20** not R35 871,20.

2.2.6 Good questions as models for future use:

2012 DBE

The team regarded the following as good questions:

P1:

- Q1.3 – assessed four different types of calculations in a familiar context,

P2:

- Q 1.2 – assessed accurate interpretation of a table and text and use of own formulation of the way to solve the problem. However, the use of the word 'per day' in the table, referring to the accommodation charges was unfortunate, because it complicated the calculation by introducing ambiguity. 'Per night' would have been better. The inclusion of 'THREE meals daily' in this question was also distracting. It raised the ambiguity of whether or not three meals per day should be in the calculation for all the days. If these two language distractions had not been there, this would have been a very good question.

2013 DBE

The team could not find any question which could be regarded as a good question in this exam.

2014 DBE Ex

P2:

- Q1 – assessed a wide range of concepts and skills.
- Q2 made use of well-known formulae but required unusual and unfamiliar ways of using them, as did the use of the photograph of the SALT and the diagram. The answers to these questions were not obvious and required higher order thinking. This was a good Paper 2 question. Unfortunately a typing error in Q 2.2.2 (R453 instead of R354), marred an otherwise excellent question.
- Q3.2 was also a good Paper 2 question. The box-and-whisker plots were clear and the questions of interpretation were penetrating and required higher order thinking that was not obvious or familiar.

All the above questions should be used as models for future examinations.

2014 DBE

P1:

- Q3.2.6 requires thinking 'outside of the box'. Therefore a good question.
- Q4.1.1, Q 4.1.3, Q 4.1.4 and Q4.1.6 all require interpretation of a complex table, involving four variables horizontally and 17 rows of data. The question asks the learner to solve realistic problems by calculation. A good challenging question.
- Q5.2.2 tests understanding of probability well.

P2:

- Q1.1.1-3 are good questions because the context is highly relevant and the questions require thinking.
- Q1.3.1 is a good challenging question. Learners will have to use graph interpretation skills to calculate the gradient of the sloping line.
- Q4.2 tests direction, estimation and reasoning and is therefore a good question.
- Q4.3.1 is a good question because it is realistic and challenging. All the necessary information is accurately and expertly provided in the diagrams. The diagrams and the text make high demands.
- Q4.4 is a good question because it is unusual. It tests spatial understanding and the skill of putting practical instructions into words.

2.3 Rating the quality of examination papers

2012 DBE	Paper 1	Good
	Paper 2	Good
2013 DBE	Paper 1	Good
	Paper 2	Good
2014 DBE Ex.	Paper 1	Fair
	Paper 2	Fair
2014 DBE	Paper 1	Good
	Paper 2	Good

Apart from the high number of mark memo errors or ambiguities, the 2014 papers are of good quality because the questions largely use authentic contexts, real problems and require some deeper level thinking.

3. Standard of the examination papers

3.1 Levels of difficulty

Table 8: Percentage of marks awarded to the different levels of difficulty in the examination papers, for Paper 1 and Paper 2, separately and combined.					
	Easy	Moderate	Difficult	Very Difficult	Invalid
Paper 1					
2012 DBE P1	44.90	50.10	5.20	0.00	0.00
2013 DBE P1	40.90	49.50	3.30	0.00	6.30
2014 DBE Ex P1	53.33	42.00	0.00	4.67	0.00
2014 DBE P1	47.33	30.67	15.33	5.33	1.33
Paper 2					
2012 DBE P2	18.00	42.10	32.30	6.10	1.50
2013 DBE P2	15.70	47.60	33.30	3.30	0.00
2014 DBE Ex P2	10.67	49.33	26.00	4.00	10.00
2014 DBE P2	28.67	52.00	3.33	12.67	3.33
OVERALL					
2012 DBE	31.45	46.10	18.75	3.05	0.75
2013 DBE	28.30	48.55	18.30	1.65	3.15
2014 DBE Ex	32.00	45.67	13.00	4.33	5.00
2014 DBE	38.00	41.33	9.33	9.00	2.33

a. Questions with unresolved differences (of difficulty)

2014 DBE P1

Q5.1.1 Two team members thought this should be at difficulty level 4 while the three others thought it should be at difficulty level 3. The question involved creating a

formula involving a horizontal line and then a direct proportion and the equation which resulted was $C = 50 + 12(n - 3)$.

2014 DBE P2

Q1.3.2(b) Two team members thought this should be at difficulty level 3 while the three others thought it should be at difficulty level 2. The question involved calculating a ratio which involved many steps and reasoning to obtain the answer.

In both case mentioned above the lower difficulty level was used in the analysis. This has impacted on the distribution of difficulty levels described in Table 3.1 above.

b. Invalid questions

Table 9: Invalid questions found in all papers 2012, 2013, 2014 EX and 2014		
2012 DBE P2	Q1.2.1	Accommodation tariff is given as 'R1 050 per day' but in actual life accommodation is charged 'per night'. A major impact on marks for candidates as the whole question is directly affected by this cost. There are many marking options available. Confusion would have lost time and marks.
	Q1.2.3	There are 2 options for the cost of the accommodation (See Q1.2.1) and therefore two different correct possible ways of doing this. All candidates would have lost time due to uncertainty and lost marks if they interpreted the facts correctly.
2013 DBE P1	Q2.2.3	Use of 'modus' (Afrikaans) would have confused some candidates and they would have lost easy marks.
	Q4.1.6	Give the ratio in simplified form rounded off to nearest whole number. Even in simplest form, rounding was not possible. This would have confused some candidates and they would have lost easy marks. Question could have simply asked 'give ratio'.
	Q4.2.1-4	Four questions asked candidates to identify provinces on a map of SA by consulting a key. The key was partly obscured by the printing process and therefore the questions made no sense reading off the map. These marks were impossible to obtain.
2014 DBE Ex. P2	Q2.1.2	Incorrect formula given. Should state 'Surface area of the <i>curved section</i> of a cylinder'. Top candidates would have been misled and confused.
	Q2.2.2	Misprint on question paper. There is no R453 on the map. All learners would have been unable to achieve these 4 marks.
	Q4.3.1	The language is ambiguous. "If she surveys 12 more customers" can mean "another 12 separate customers" or "12 more than the 18 she has already surveyed, making 30". Some learners would have been unable to achieve these 4 marks.
2014 DBE P1	See section 2.1 above	

c. Allocation of marks at each level of difficulty

2012 DBE

The overall result showed that the exam was fairly balanced with respect to levels of difficulty. Paper 1 is clearly easy and would allow for the average learner to achieve a pass. Overall 22 % of its questions were of a difficult or very difficult degree. This would allow for fairly good differentiation of the A grade candidates.

2013 DBE

The overall result showed that the exam was easy. Paper 1 was clearly too easy (41% of the marks were awarded for easy questions) and would allow for less than average learners to achieve a pass. Overall 20 % of its questions were of a difficult or very difficult degree. This would not allow for good differentiation of the A grade candidates.

2014 DBE Ex.

In P1 53% of the marks were for easy questions and 42% were for moderately difficult questions. Paper 1 was too easy.

In Paper 2 there should have been no easy questions. There were also not enough difficult and very difficult questions. These questions should have been able to discriminate at the top end of high achievers. The existence of invalid difficulty questions is problematic as those questions would have forfeited their weighting.

It can be clearly seen that the levels of difficulty were not well distributed in the 2014 DBE exemplar. There are clearly enough marks allocated to easy and moderate questions across both papers. It would have been easy for candidates to obtain the 30% pass mark. The exemplar does not succeed in providing difficult and very difficult questions to discriminate at the top end for high-achieving candidates.

2014 DBE

Paper 1 of the 2014 DBE Final was the most difficult Paper 1 over the last three years. However, in the team's opinion there are still too many Easy questions and too few Moderately Difficult questions for this to be an acceptable standard for a Grade 12 exit paper.

Paper 2 is the easiest Paper 2 over the last three years particularly because there are too many Easy questions and hardly any Difficult questions. It is, however, gratifying to see that the examiner has succeeded in creating questions which are Very Difficult as these will provide a means of identifying A-grade achievers.

Overall the 2014 DBE Final paper is too easy. It has too many Easy questions and too few Difficult questions. Again, it is good to see that this examination contained the highest number of Very Difficult questions compared to the previous three years. There were also fewer questions with invalid sources of difficulty than most of the previous years.

While it not possible to prescribe a specific distribution of levels of difficulty there is a sense in the team that the distribution should look something like this:

Easy	Moderately Difficult	Difficult	Very Difficult
30%	40%	20%	10%

This distribution would enable the examination to enable average learners to obtain 30% and also really discriminate at the top end to identify A-grade achievers at an acceptable Grade 12 exit-level.

3.2 Examples of questions at each level of difficulty

Table 11: Examples of questions at different levels of difficulty in 2014 final papers		
	Difficulty level	Question
2014 DBE P1	Easy	Q2.3.2 Determine the temperature reading on Tina's thermometer if the required constant temperature of 25° C has to be maintained. You may use the following formula: Temperature in °F = (1,8 x °C) + 32° (3)
	Moderate	Q4.1.3 Refer to the tariffs for registered e-tag users driving Class B vehicles to answer the following questions: (a) Calculate the mean e-toll tariff. (4) (b) Determine the median e-toll tariff. (3) (c) Hence state, giving a reason, whether the mean or the median e-toll tariff best represents these tariffs. (3)
	Difficult	Q5.1.1 Rafique is the driver of a metered taxi. The company he works for charges the following fare for a single trip: A minimum call-out fee of R50 per trip with the first three km free AND thereafter, R12,00 for each additional km or part thereof.

		Write down an equation that Rafique can use to calculate the total cost (in rand) per single trip, in the form Total cost (in rand) per trip = (3)																
	Very difficult	<p>Q5.1.2 Table 2 below shows the total cost per single trip for different distances travelled.</p> <table border="1"> <tr> <td>Distance (in km)</td> <td>0</td> <td>1</td> <td>3</td> <td>5</td> <td>10</td> <td>20</td> <td>30</td> </tr> <tr> <td>Total cost per single trip (in rand)</td> <td>0</td> <td>50</td> <td>50</td> <td>74</td> <td>134</td> <td>254</td> <td>374</td> </tr> </table> <p>Use Table 2 to draw a line graph on Answer Sheet C showing the total cost per single trip. (5)</p>	Distance (in km)	0	1	3	5	10	20	30	Total cost per single trip (in rand)	0	50	50	74	134	254	374
Distance (in km)	0	1	3	5	10	20	30											
Total cost per single trip (in rand)	0	50	50	74	134	254	374											
2014 DBE P2	Easy	Q1.1.1 Explain, with justification, whether the given data is discrete or continuous. (2)																
	Moderate	<p>Q1.2.3 Calculate the missing quartile values B, C and D of the box and whisker plot. (5)</p> <p>(For this question the ages of 40 boys were provided in an arranged table, and the corresponding box and whisker plot.)</p>																
	Difficult	<p>Q3.2.1 Dr Khoza claimed that her department's percentage budget increase for the 2014/15 financial year exceeded the annual inflation rate of 5,77% for 2013. Show by calculation whether her claim is valid. (5)</p> <p>(For this question a table of Amounts budgeted for Defence and the total National budget was given with figures for 2012/13, 2013.14 and 2014.15 in billions of rand.)</p>																
	Very difficult	<p>Q4.3.1 Jackie would like to tint the inside of the glass using a special type of spray paint. The paint is sold in 250ml cans. The following information is printed on the side of the spray can: 100ml of spray paint can cover 0,07m² of glass per coating. Apply two coats. Calculate the number of spray cans of paint needed to tint the glass of the display case. (8)</p> <p>(The question includes a diagram showing the octagonal display case and all its dimensions.)</p>																

3.3 Difficulty of stimulus/source material

This has been dealt with extensively the section headed Format above. It should be noted, however, that the complexity and authenticity of the stimulus material has substantially improved since 2012. The material is based on relevant information and much less contrived. There is also a fair amount of careful reading required to solve the problems in the papers.

3.4 Other points regarding the standard of the examination (all 2012-2014)

The team is of the opinion that none of the examinations include sufficient questions at the difficult level and very difficult level (with the exception of the 2014 Final) to satisfy a deep assessment of the subject knowledge. (Refer to Table 8.) In addition, there are far too many questions which are not appropriate for Grade 12 assessment of the subject because they are too easy and too predictable.

4. Recommendations for improving the quality and standard of the examinations

The following recommendations are made regarding the standard: (for 2014 exemplar and final papers)

- The papers need to consist of authentic, real-life problems (preferably sourced from authentic sources like StatsSA, UNESCO, WWF, newspapers, articles of interest in focus magazines, etc.) and from people in occupations where quantitative issues are concerned (doctors, environmental consultants, marketing managers, etc.)
- The papers need to have **significantly more questions at the two higher cognitive levels** which test conceptual understanding, reasoning and interpretation of data and answers.
- The papers need to have **much more difficult Grade 12 exit-level questions**, which require thinking, problem solving and ability to handle “non-cosmetic” numbers (real numbers which have many decimal places and awkward percentages).
- It would extremely helpful if the examiners could come to a shared understanding of cognitive level and difficulty with the moderators and Umalusi evaluators about the levels of difficulty and cognitive demand.
- The Umalusi team could share it's extremely detailed taxonomy of questions at different difficulty levels which has been compiled from the CAPS and the two 2014 papers.

The following recommendations are made regarding the quality:

- The quality of the printing and the checking of the printing per province needs to improve. It is unacceptable to have questions which cannot be answered because of poor printing.
- It is also unacceptable to have errors in formulae, or source material or wording in the question papers. Errors in the marking memo would seem to indicate a lack of proper checking by either the examiner or moderator. Both question papers and marking memos should be error free.

5. Comparability of examination papers

5.1 Comparability of quality

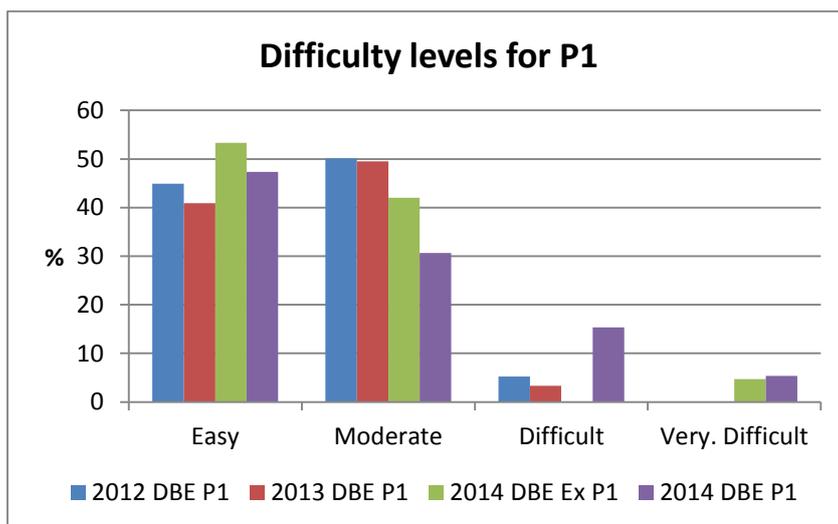
Paper	2014 DBE P1	2014 DBE P2	2014 DBE Overall
2012 DBE P1	Much better than		
2012 DBE P2		Much better than	
2013 DBE P1	Much better than		
2013 DBE P2		Much better than	
2014 DBE Ex P1	Better than		
2014 DBE Ex P2		Better than	
2012 Overall			Much better than
2013 Overall			Much better than
2014 Ex Overall			Better than

The quality of the 2014 DBE Final papers was better mostly with respect to the type of question. The earlier years' papers had many more contrived questions, awkward and unnecessary diagrams or merely illustrative images. The 2014 DBE Final papers also had more very challenging questions although, like the other years, still focussed on the easy type of question. The 2014 DBE Final papers have fewer language issues and fewer technical problems although the marking memo is still problematic.

5.2 Comparability of standards

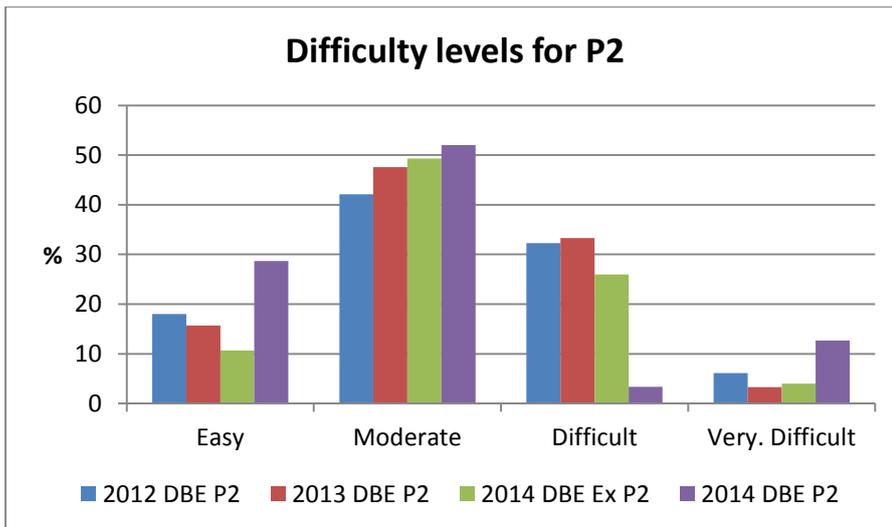
The difficulty levels for the 2012, 2013, 2014 Exemplar were compared with the 2014 DBE paper by paper and as an overall comparison of the whole examination. The graphs below show the comparison of difficulty levels clearly.

DBE Paper 1 Levels of Difficulty



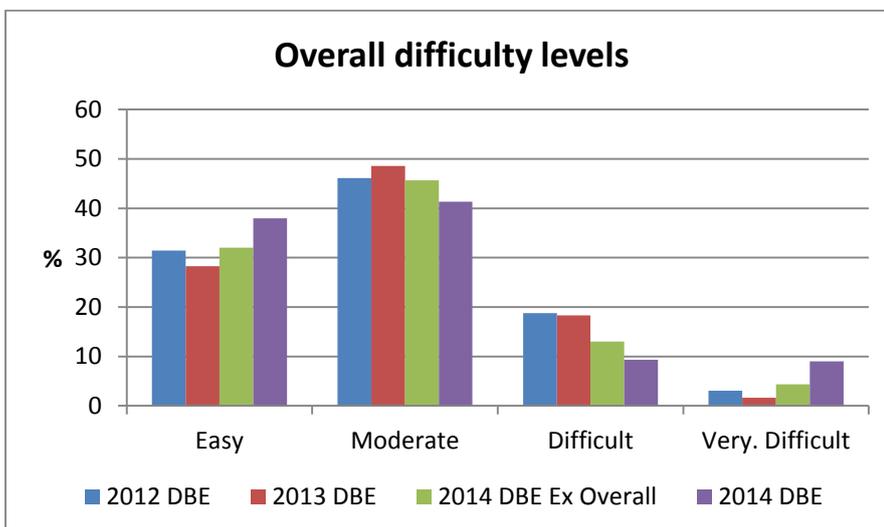
From the graph it can be clearly seen that the 2014 P1 is much more difficult than the previous three years' Paper 1. The high number of marks (15,33%) of the paper at the Difficult level is very pleasing as is the 5,33% of marks at the Very Difficult level.

DBE Paper 2 Levels of Difficulty



From the graph above it can be clearly seen that the 2014 P2 is really not a good paper with respect to difficulty levels. The huge discrepancy between the number of marks at the Moderately Difficult (52%), Difficult (3.3%) and the relatively high percentage of marks at the Very Difficult Level (13%) is of concern. It would have been better to have more Difficult and fewer Very Difficult marks. In some ways this paper will be experienced as a difficult paper even although more than half the marks are obtained for Moderately Difficult questions.

Combined Paper 1 and Paper 2 Levels of Difficulty



The combined graph shows how the 2014 exam compares to the three previous papers.

- It has 6% -10% more Easy questions than the previous papers.
- It has roughly half the marks at the Difficult level that the 2012 and 2013 papers had, and a quarter less than the 2014 exemplar.

- Nearly 80% of the marks for the combined paper 1 and paper 2 are at the Easy or Moderately Difficult levels. This is too high and will result in candidates obtaining passes too easily and higher grades than they really deserve.
- Set against easier trend is the significantly higher number of marks at difficult level 4, namely Very Difficult. These questions will certainly sift out the top achievers.

Conclusion

While the 2014 DBE Final paper complies in many areas with what is required of a Grade 12 exit-level examinations it is regrettable that overall this examination was too easy. It seems that the challenge to the examiners is to devise questions that are more challenging than the Moderately Difficult ones and to think up ways of asking questions at the highest level of cognitive demand (Reasoning and reflecting) that are not merely a judgment which is easy to make or an opinion which can be any opinion, provided it is justified. These marks are easy to earn!

It is the team's assessment of the paper that the overall performance trends of the learners writing Mathematical Literacy in 2014 will appear better than previous years only because they have answered a less demanding question paper.

2.9: Physical Sciences – Department of Basic Education

SUBJECT: PHYSICAL SCIENCES

1. Compliance with the CAPS

1.1 Format and structure

Exam paper	Focus area	Duration (hrs)	Mark allocation
DBE P1 2012	Physics	3	150
DBE P1 2013	Physics	3	150
DBE P2 2012	Chemistry	3	150
DBE P2 2013	Chemistry	3	150
DBE P1 2014 November	Physics	3	150
DBE P2 2014 November	Chemistry	3	150
DBE P1 2014 Exemplar	Physics	3	150
DBE P2 2014 Exemplar	Chemistry	3	150

In Table 1 above, the DBE Physical Science papers that were analysed for 2012, 2013, and 2014 are presented. The papers were consistent with the required format in all cases.

According to CAPS, all 2014 Physical Science papers are required to consist of:

- 20 marks multiple choice questions
- 130 marks structured response questions

None of the 2014 DBE examinations deviate from these.

The 2014 examination papers differ from the 2012 and 2013 DBE papers as follows:

- For 2012 and 2013, Question 1 was comprised of five brief (essentially one-word) answers, for a total of 5 marks; Question 2 was comprised of ten multiple-choice questions for 2 marks each (20 marks in total). These two questions accounted for 25 marks of the 150 mark paper.
- For the 2014 papers the 5-mark question was omitted, leaving just the ten multiple choice questions, for a total tally of 20 marks.

The format and structure of the examinations is appropriate for a Grade 12 examination.

1.2 Cognitive demand weightings

Table 2 - Comparison of cognitive demand weightings specified and the percentage for the paper(s) analysed				
Paper	Percentage of marks allocated to questions at each of the different types of cognitive demand			
	Recall	Comprehension	Analysis, Applications	Evaluation, Synthesis
DBE P1 2012	15%	20%	65%	1%
DBE P1 2013	21%	27%	51%	1%
DBE P2 2012	23%	25%	48%	4%
DBE P2 2013	18%	20%	54%	5%
DBE P1 2014 November	13%	14%	70%	3%
DBE P2 2014 November	19%	27%	47%	7%
DBE P1 2014 Exemplar	11%	23%	63%	3%
DBE P2 2014 Exemplar	17%	19%	59%	5%
CAPS for P1	15%	35%	40%	10%
CAPS for P2	15%	40%	35%	10%

The following comments can be made about the **2014 November** papers:

- The percentage of marks allocated to Analysis and Application is generally higher than stipulated in CAPS, particularly for Paper 1.
- The percentage of marks allocated to Comprehension is generally lower than stipulated in CAPS, particularly for Paper 1.
- The recall questions are within a 5% variation from the stipulated percentage.
- The Evaluation and Synthesis questions are generally lower than stipulated in CAPS.

From Table 2 above, the following comments can be made about the **2014 Exemplar** papers:

- The percentage of marks allocated to Analysis and Application is generally higher than stipulated in CAPS.

- The percentage of marks allocated to Comprehension is generally lower than stipulated in CAPS.
- The recall questions are within a 5% variation from the stipulated percentage.
- The Evaluation and Synthesis questions are generally lower than stipulated in CAPS.

Table 3 - Comparison of the cognitive demand weightings specified and the weighting for examination papers combined				
Paper	Cognitive demand weightings specified and the percentage for the paper(s) analysed			
	Recall	Comprehension	Analysis, Applications	Evaluation, Synthesis
DBE P1 2014 November	13%	14%	70%	3%
DBE P2 2014 November	19%	27%	47%	7%
DBE Physical Science 2014 (average P1&P2)	16%	21%	59%	5%
DBE P1 2014 Exemplar	11%	23%	63%	3%
DBE P2 2014 Exemplar	17%	19%	59%	5%
DBE Physical Science 2014 Exemplar (average P1&P2)	14%	21%	61%	4%
CAPS for P1	15%	35%	40%	10%
CAPS for P2	15%	40%	35%	10%
CAPS Averages	15%	37.5%	37.5%	10%

For the **2014 exemplar and November** papers (with reference to Table 3 above):

- Level 3 questions are over-represented for both Paper 1 and Paper 2, at the expense of all the other categories.
- However, the number of Level 1 questions is close to the recommended percentage.
- As has been true with all papers, Level 4 questions are under-represented.

However, it needs to be borne in mind that these categories of cognitive demand are very difficult to judge accurately for Physical Sciences examinations, as they do not adequately describe the types of thinking that are typically involved in the exam questions. As a result, different evaluators might arrive at varying judgments on these. One can therefore not make strong judgments on the basis of these percentages. The levels of difficulty are far more informative for Physical Sciences examinations (see Sections 3.1 and 5.2 of this report).

1.3 Topic or content and/or skills area weightings

Table 4 - Comparison of the topic or content and/or skill weightings specified with the weightings for the examination paper(s)								
Paper		Percentage of marks awarded to each central topic or content and/or skill area in examination papers						
		M	WSL	EM	MM[Phys]	MM[Chem]	CS	CC
CAPS		26.9	5.8	11.5	5.8	17.7	5.4	26.9
DBE 2012	P1	14.0	8.3	20.3	7.3			
	P2					22.7	4.7	22.7
DBE 2013	P1	18.0	8.3	17.7	6.0			
	P2					26.7	4.3	19
DBE 2014 November	P1	23.0	3.7	18.3	5.0			
	P2					15.7	3.7	30.7
DBE Exemplar	P1	22.7	6.0	16.3	5.0			
	P2					16.3	7.3	26.3

KEY: M = Mechanics; WSL = Waves, Sound & Light, EM = Electricity & Magnetism; MM = Matter & Materials; CS = Chemical Systems; CC = Chemical Change

For the **2014 November** papers (with reference to Table 4 above):

- Paper 1 (Physics): Mechanics and Waves are slightly under-represented and Electricity & Magnetism slightly over-represented in comparison with the CAPS specifications.
- Paper 2 (Chemistry): Chemical Change is over-represented at the expense of the other two knowledge areas.

For the **2014 exemplar** papers (with reference to Table 4 above):

- Paper 1 (Physics): Mechanics is slightly under-represented and Electricity & Magnetism slightly over-represented in comparison with the CAPS specifications.
- Paper 2 (Chemistry): Chemical Systems is slightly over-represented at the expense of Matter & Materials. However, the discrepancies are small.

1.4 Coverage of examinable curriculum

Table 5 - Coverage of examinable curriculum in each paper	
Paper	Coverage of Content Areas
DBE P1 2012	All of the curriculum is covered
DBE P1 2013	All of the curriculum is covered
DBE P2 2012	All of the curriculum is covered
DBE P2 2013	All of the curriculum is covered
DBE P1 2014 November	All of the curriculum is covered
DBE P2 2014 November	All of the curriculum is covered
DBE P1 2014 Exemplar	All of the curriculum is covered
DBE P2 2014 Exemplar	All of the curriculum is covered

The questions in the papers sufficiently covered the curriculum, and none of the questions pertained to non-examinable material.

2. Quality of examination papers

2.1 Invalid sources of question difficulty or ease

Table 6 - Number of questions assessed as having invalid sources of difficulty or ease	
Paper	Number of Questions
DBE P1 2012	0
DBE P2 2012	1
Total for 2012	1
DBE P1 2013	1

DBE P2 2013	0
Total for 2013	1
DBE P1 2014 November	0
DBE P2 2014 November	2
Total for 2014 November	2
DBE P1 2014 Exemplar	0
DBE P2 2014 Exemplar	0
Total for Exemplar	1

The following comments provide details of the invalid sources of difficulty that were found:

- DBE 2013 P1 Question 6.2 (Confusing wording of question, the velocity of sound is usually taken as a constant)
- DBE 2012 P2 Question 8.1.1 (False assumption that all spontaneous reactions are exothermic – would confuse top learners)
- DBE 2014 Nov P2 Question 1.10 (Third column in the table of options adds ambiguity and hence the question is unanswerable). This is not likely to affect lower-performing learners, as they were no likely to get the question right anyway. It is likely to **mainly affect high-performing learners** who will not be able to answer the question due to this ambiguity.
- DBE 2014 Nov P2 Question 8.4.2 (False assumption that all spontaneous reactions are exothermic – would confuse top learners) This is **not likely to affect learner performance** as it is a misconception that has been repeated in previous years, so learners will have been coached as to how to answer this.

2.2 Other points regarding the quality of the examination

All the papers were clearly laid out, well structured and of a good quality. No typographical errors were found, nor errors of question or section numbering, nor errors in resource material. In addition, the language was straightforward, and kept to a minimum, and therefore should be accessible to learners working in their second language.

On the whole, the team found the examination papers to be well prepared, and thoughtfully structured, as each question moved from simple to more complex sub-questions, allowing learners to demonstrate their performance in all areas.

The team considered the DBE examinations that have been analysed to be good models for future examinations in terms of their structure, layout and clarity.

2.3 Rating the quality of examination papers

Table 7 - Ratings for the quality of examination papers	
Paper	Number of Questions
DBE P1 2012	Good
DBE P1 2013	Good
DBE P2 2012	Good
DBE P2 2013	Good
DBE P1 2014 November	Good
DBE P2 2014 November	Good
DBE P1 2014 Exemplar	Good
DBE P2 2014 Exemplar	Good

3. Standard of the examination papers

3.1 Levels of difficulty

In assessing the levels of difficulty of the examination papers, each question was discussed until consensus was reached. There were no unresolved issues around the categorisation of questions at the various levels of cognitive demand or difficulty.

Table 8: Percentage of marks awarded to the different levels of difficulty in the examination paper(s)					
	Easy	Moderate	Difficult	V.Difficult	Invalid
Paper 1					
DBE 2012 P1	11%	47%	37%	5%	0%
DBE 2013 P1	17%	45%	29%	9%	3%

DBE 2014 November P1	10%	37%	45%	7%	0%
DBE 2014 Exemplar P1	5%	35%	42%	18%	0%
Paper 2					
DBE 2012 P2	18%	43%	29%	9%	1%
DBE 2013 P2	7%	35%	55%	0%	0%
DBE 2014 November P2	12%	35%	46%	7%	2%
DBE 2014 Exemplar P2	11%	45%	36%	7%	0%

Table 9: Percentage of marks awarded to the different levels of difficulty for all examination papers combined

	Easy	Moderate	Difficult	V.Difficult	Invalid
Paper 1&2 Combined					
DBE 2012 (P1&P2)	14%	45%	33%	7%	1%
DBE 2013 (P1&P2)	12%	40%	42%	4%	2%
DBE 2014 November (P1&P2)	11%	36%	46%	7%	1%
DBE 2014 Exemplar (P1&P2)	8%	40%	39%	13%	0%

The percentage of marks readily available to the **30% passing candidate** was determined as follows:

- 100% of the marks in the "Easy" category + 50% of the marks in the "Moderate" category, expressed as a percentage of the overall marks.

The percentage of marks readily available to the **80% candidate** was determined as follows:

- 100% of the marks in the "Easy" category + 100% of the marks in the "Moderate" category + 75% of the marks in the "Difficult" category, expressed as a percentage of the overall marks.

Table 10 below reflects these marks for all papers under evaluation:

Table 10: Marks achievable by selected groups of learners

	Marks achievable by 30% passing candidate	Marks achievable by 80% candidate
Paper 1		
DBE 2012 P1	34.3%	85.5%
DBE 2013 P1	39.3%	84.0%
DBE 2014 November P1	28.5%	80.8%
DBE 2014 Exemplar P1	22.7%	71.5%
Paper 2		
DBE 2012 P2	39.7%	83.3%
DBE 2013 P2	24.3%	83.5%
DBE 2014 November P2	29.7%	81.8%
DBE 2014 Exemplar P2	34.0%	83.7%
Paper 1&2		
DBE 2012	37.0%	84.4%
DBE 2013	31.8%	83.8%
DBE November 2014	29.1%	81.3%
DBE 2014 Exemplar	28.3%	77.6%

The following comments are made about these for the **November 2014** papers:

- In the 2014 November Paper 1 a lower percentage of marks is accessible to the 30% passing candidate than in 2012 and 2013.
- Similarly, in the 2014 November Paper 1 a lower percentage of marks is readily accessible to the 80% candidate than in 2012 and 2013.
- The 2014 November Paper 2 is more accessible for the 30% passing candidate than the 2013 paper, but less accessible than the 2012 Paper 2.
- There is an appropriate percentage of marks in the 2014 November Paper 2 that are accessible to the 80% candidate in comparison with the previous years.
- For the combined papers the 2014 November paper is slightly more difficult for the 30% learner than the 2012 and 2013 papers.
- Similarly in the combined papers there is a lower percentage of readily available marks for the 80% candidate in the November 2014 papers than the 2012 and 2013 papers.

The following comments are made about these for the **2014 Exemplar** papers:

- The Exemplar paper was not a good example of the standard of the examination, as there was a very low percentage of accessible marks for both

categories of learners (the 30% and 80% candidates), suggesting that the Exemplar paper was set at too high a level to be representative of the desired standard.

3.2 Examples of questions at each level of difficulty

Easy:

- One word recall answers e.g. Provide the correct labels on a diagram of a piece of apparatus
- A very simple routine calculation e.g. "Given that the power across a resistor is 100 W and the voltage is 20 V, calculate the current through the resistor."

Moderate:

- A full-sentence recall answers e.g. "State Newton's first law in words"
- A fairly routine calculation e.g. "The siren of a stationary ambulance emits a note of frequency 1 130 Hz. When the ambulance moves at a constant speed, a stationary observer detects a frequency that is 70 Hz **higher** than that emitted by the siren. Calculate the speed at which the ambulance is travelling. Take the speed of sound in air as 343 m/s."
- Explanation of concepts that are not very complex e.g. "IMMEDIATELY after increasing the pressure, the colour of the reaction mixture in the gas syringe appears darker than before. Give a reason for this observation."

Difficult:

- Explanation of concepts that are complex, or where all possible factors should be considered e.g. "Fully explain why the boiling point increases from methane to propane."
- Non-routine, complex or multi-step calculations e.g. "Calculate the magnitude of the frictional force acting between the crate and the surface of the inclined plane."

Very difficult:

- Solving very complex problems, or problems requiring novel approaches e.g. "Use the graph of voltage versus current to calculate the internal resistance of the battery, WITHOUT USING ANY FORM OF THE EQUATION $emf = I(R + r)$ "
- Solving problems that involve a synthesis of various concepts, e.g. "A laboratory technician wants to determine the percentage purity of magnesium oxide. He dissolves a 4,5 g sample of the magnesium oxide in 100 cm³ hydrochloric acid of concentration 2 mol·dm⁻³. At the endpoint of the titration he finds that 21 cm³ of a 0,2 mol·dm⁻³ sodium hydroxide solution has neutralised the EXCESS hydrochloric acid. The balanced equation for the reaction between hydrochloric acid and magnesium oxide is: $MgO(s) + 2HCl(aq) \rightarrow MgCl_2(aq) + 2H_2O(l)$. Calculate the percentage purity of the magnesium oxide. Assume that only the magnesium oxide in the 4,5 g sample reacted with the acid."

3.3 Difficulty of stimulus/source material

No issues were found regarding the level of difficulty of the stimuli or source material for any of the papers analysed. Where the stimuli were challenging, this was appropriate to the intention of the question. This issue is not very relevant to Physical Sciences examinations, which tend to have limited text.

4. Recommendations for improving the quality and standard of the examinations

The following recommendations are made:

- Some guidelines for the acceptable distribution of percentages for the levels of difficulty of the examinations should be established to set a benchmark to guide the examiners on the required standards of a Grade 12 exit level examination. This will ensure a greater continuity in the standard from one year to the next, and between Paper 1 and Paper 2, and allow for the proper discrimination of levels of learner attainment.
- The team considered the DBE 2014 Exemplar and November examinations to be good models for future examinations in terms of their structure, layout and clarity.
- However, the DBE 2014 Exemplar Paper 1 is extremely difficult, and is likely to be experienced as very challenging by the average learner. This was not a good guide to learners or teachers on the standard of the examination. Attention should be paid to future exemplars to ensure that they are comparable to the desired standard of the final paper.
- The combined 2014 November papers were less difficult than the Exemplar examinations, but were still more challenging than their 2012 and 2013 predecessors. It is recommended that the papers contain a slightly increased percentage of moderate questions, and a slightly lower percentage of difficult questions, to create a more balanced standard.

5. Comparability of examination papers

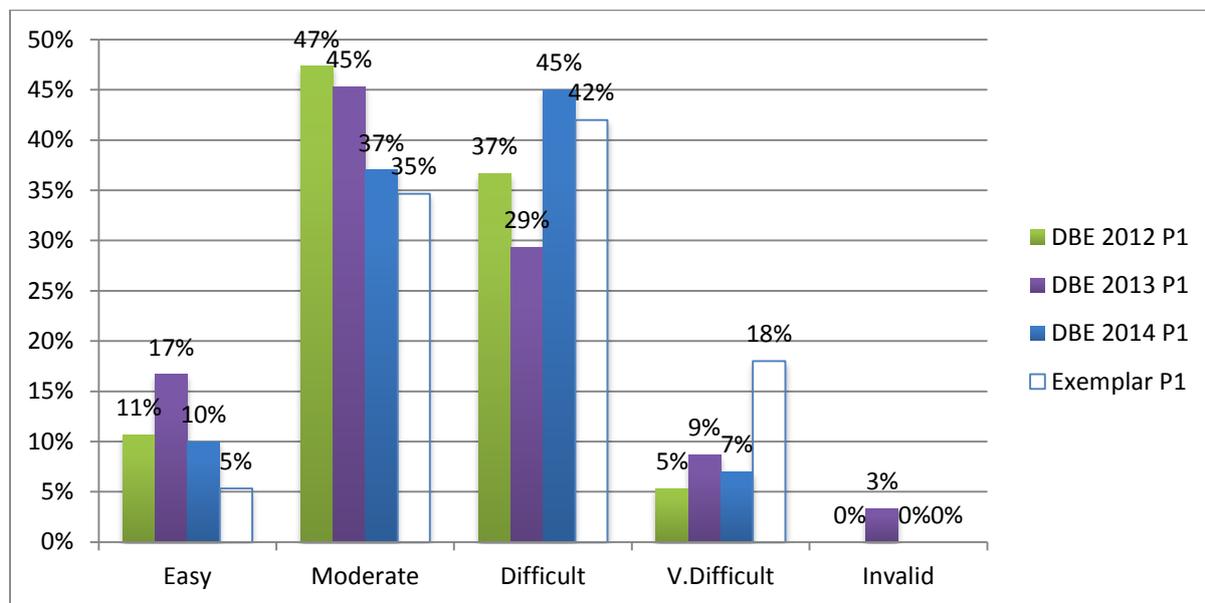
5.1 Comparability of quality

No issues with the quality of the papers were noted by the team, apart from the few questions with invalid sources of difficulty outlined in Sections 2.2 and 3.1 of this report. Hence the papers can be considered to be comparable with each other with regard to quality, structure, layout and clarity.

5.2 Comparability of standards

The results of the examination analysis are shown below for each of the papers, and for the combinations of the papers. We represented the information graphically, as this clearly allows the comparisons to be seen.

DBE Paper 1 (Physics) Levels of Difficulty:



Regarding the standard of the November Paper 1:

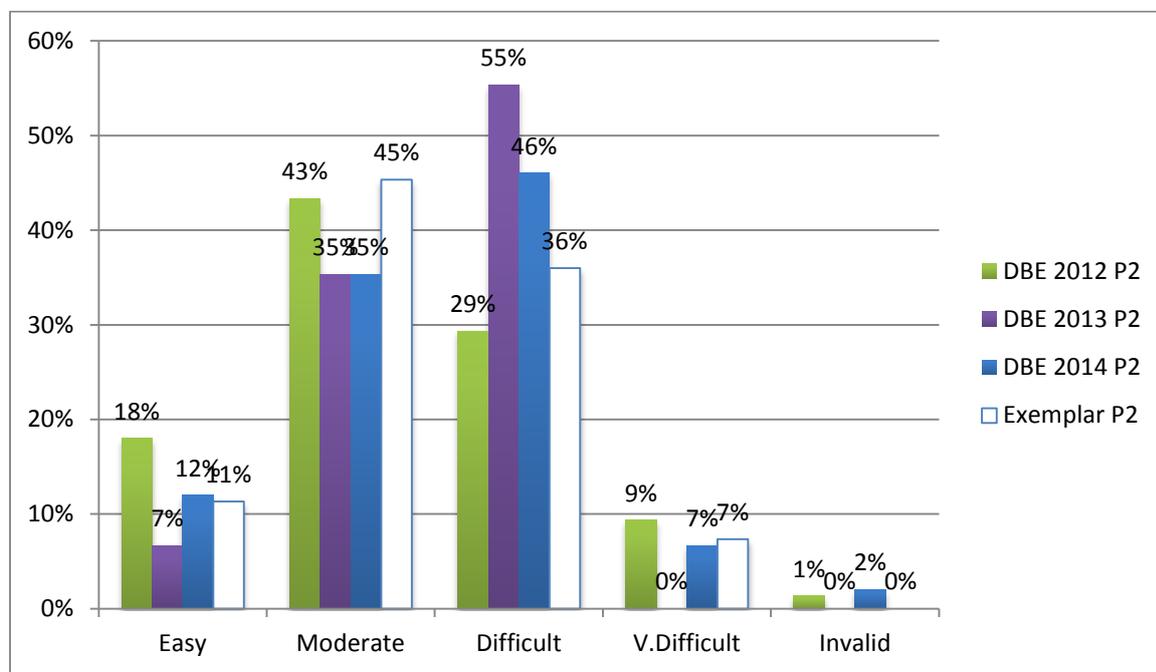
- The data clearly shows that the 2014 November Paper 1 is significantly more difficult than the papers in the previous two years. This is evidenced by:
 - The significant increase of “Difficult” questions from 37% and 29% to 45%
 - The drop in percentage of “Moderate” questions from 47% and 45% to 37%
- This suggests that learners will experience the Physical Sciences November Paper 1 as significantly more challenging than the 2012 and 2013 predecessors. This may be compounded by the fact that the section “Newton’s Laws” has not been previously examined in the Grade 12 examination, and this tends to be a very demanding area.

Regarding the standard of the Exemplar Paper 1:

- The data clearly shows that the 2014 Exemplar Paper 1 is significantly more difficult than the papers in the previous two years. This is evidenced by:
 - The increase in “Very Difficult” questions, from 7 % to 18%
 - The increase of “Difficult” questions from 33% to 42%
 - The consequent drop in percentage of both the “Easy” and “Moderate” questions

- This suggests that learners will experience the Physical Sciences Exemplar Paper 1 as significantly more challenging than the 2012 and 2013 predecessors.

DBE Paper 2 (Chemistry) Levels of Difficulty:



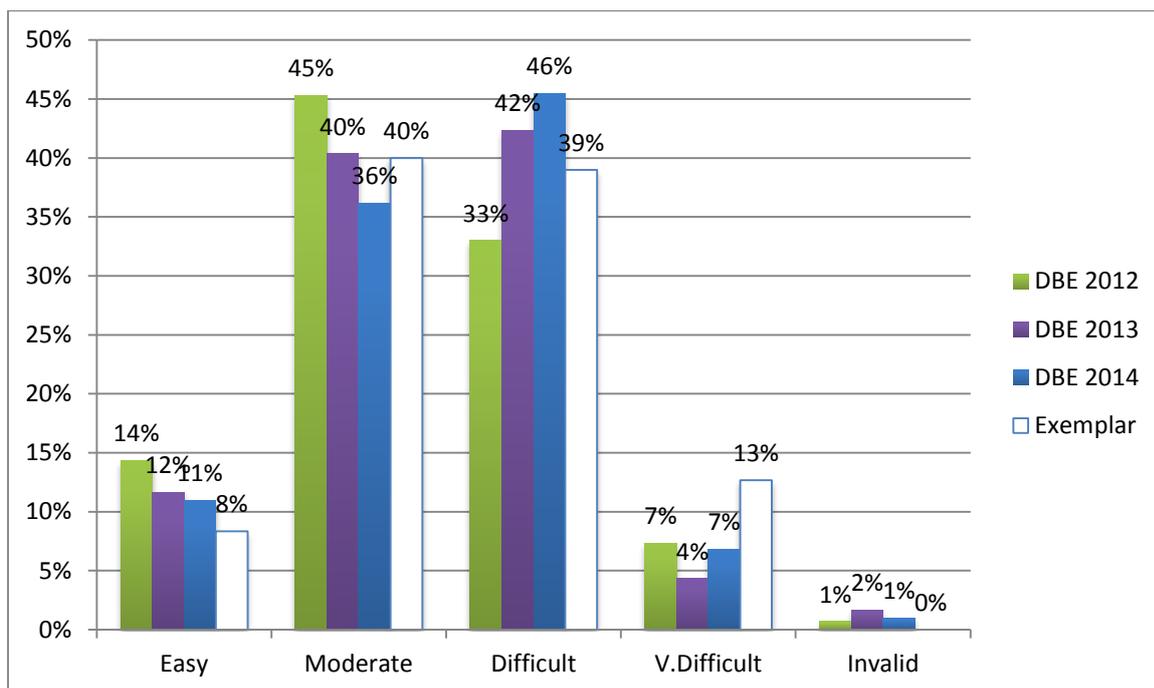
Regarding the standard of the November Paper 2:

- The standard of the November Paper 2 is very similar to that of the 2013 paper, except that there were no questions rated “Very Difficult” in the 2013 paper. The 2012 paper had a high percentage of “Moderate” and “Easy” questions, hence overall it would have been an easier paper.
- This suggests that learners will experience the Physical Sciences November Paper 2 as having similar challenge to the 2013 predecessor, but more challenge than the 2012 paper.

Regarding the standard of the Exemplar Paper 2:

- The standard of the Exemplar Paper 2 is very similar to that of the combined 2012 and 2013 papers, as can be seen by the similarity in percentages at all levels of difficulty.
- This suggests that learners will experience the Physical Sciences Exemplar Paper 2 as having similar challenge to the 2012 and 2013 predecessors.

Combined Paper 1 and Paper 2: Levels of Difficulty



Regarding the standard of the November Combined Physical Sciences Examination:

- The November exam has a higher overall percentage of “Difficult” questions (46% compared with 42% for 2013 and 33% for 2012), at the expense of the “Easy” and “Moderate” questions.
- This suggests that learners will experience the combined Physical Sciences November Papers 1 and 2 as more challenging than the 2013 examination, and significantly more challenging than the 2012 examination.

Regarding the standard of the Exemplar Combined Physical Sciences Examination:

- The main difference in standard between the 2012 and 2013 Papers 1 and 2 combined and the combined Exemplar Papers 1 and 2 is that the Exemplar exam has a higher overall percentage of “Very Difficult” questions, at the expense of easy questions.
- This suggests that learners will experience the combined Physical Sciences Exemplar Papers 1 and 2 as significantly more challenging than the 2012 and 2013 predecessors.

This information is summarized in Table 11 below for the November 2014 paper:

Table 11 – Rating the standard of the 2014 paper(s) against each of the other papers

Paper	2014 November P1	2014 November P2
DBE P1 2012	Significantly more demanding	-
DBE P1 2013	Significantly more demanding	-
DBE P2 2012	-	More demanding
DBE P2 2013	-	Similar demand
Combined P1 & P2 2012	November 2014 is significantly more demanding	
Combined P1 & P2 2013	November 2014 is more demanding	

As discussed in Section 3.1 of this report, it is slightly more difficult for the **30% learner** to achieve the required number of marks to pass for the combined papers of the 2014 November examination than in the 2012 and 2013 papers. The team thus concludes that **fewer learners will pass** this examination on the basis of the raw scores than in the previous two years.

Similarly, in the combined 2014 November papers there is a lower percentage of readily available marks for the **80% candidate** than the 2012 and 2013 papers. The team thus concludes that **fewer learners will achieve a Level 7 pass** on this examination on the basis of the raw scores than in the previous two years.

