



Cornerstone
ECONOMIC RESEARCH

Expenditure and Performance Review

**In-Service Training of Teachers
(INSET)**

FINAL

December 2013

Research commissioned by the National Treasury

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1. Introduction

This Expenditure and Performance Review (EPR) was commissioned by the National Treasury. It forms part of a broader initiative to understand the planning, implementation and financing dynamics of some 40 policy initiatives of government. It is envisaged that EPR studies such as this one will allow for greater value for money in government expenditure and improved implementation of policy initiatives.

1.1 Topic

This EPR examines the *in-service training of teachers*, otherwise known as *INSET*.

The challenges facing Teacher Education and Training are considerable. To address some of these challenges, the Department of Basic Education (DBE) has developed and issued the *Integrated Strategic Planning Framework for Teacher Education and Development in South Africa* (referred to as the Plan). The primary intended outcome of the Plan is to improve the quality of teacher education and development, thereby improving the quality of teachers and teaching.

1.2 Purpose

There is frequently a large gap between policy development and implementation planning. Many policy initiatives do not have good plans with clear, well-developed logic models or theories of change, baseline indicators, clear outcomes or impact indicators and targets.

It must be noted that the INSET initiative is clear and well developed. The plan places considerable management responsibility on the different lead agencies or departments by requiring that they develop detailed operational plans for each activity, namely staffing, resourcing, line management functions, targets, timeframes, budget. However, as it stands, many departments are not doing proper implementation/operational planning or developing operational budgets.

This EPR aims to support the implementation management and budgeting for INSET by the DBE by providing:

- Detailed understanding of the cost elements, expenditure drivers, and expenditure.
- Allocation and spending patterns across all spheres of government, public entities and frontline service delivery sites.
- In-depth understanding of the historical expenditure patterns.
- Proposals for improved budget allocation over the MTEF at national and provincial spheres.
- Proposed improvements on linking policy intent and programmatic design based on extensive interrogations of causal linkages.
- Detailed analysis of the implementation logic of policy initiatives that will allow for critical performance measures to be developed across all aspects and geographical locations.

1.3 Key Questions

The recent National Education and Evaluation & Development Unit (NEEDU) report highlighted several gaps in teacher knowledge, areas that need to be addressed in order to improve the outcomes of education in the country. The inadequacy of teacher support and development is manifested in knowledge gaps observed in many teachers when it comes to subject (disciplinary), curriculum and pedagogical content knowledge.

The plan to take INSET forward has a number of dimensions and raises various key questions, including:

- specifying what educators should know and identifying gaps,
- identifying suitable institutions to provide the training,
- ensuring the training provided fills the gaps, and
- the practicalities of actually organising the training – taking educators out of class and getting replacement educators, etc.

Then there is the very difficult question of what the department does if the educators simply do not have the aptitude, ability or inclination to upgrade their skills so as to be able to teach the prescribed curriculum properly.

With this in mind, this project aims to examine the following key questions:

- i. Does the INSET policy provide guidance on the required management processes and systems to deliver an efficient and effective roll-out of INSET?
- ii. What performance measures should be tracked to ensure effective policy implementation?
- iii. What funds are currently being spent on INSET?
- iv. What are the key cost elements and expenditure drivers of INSET, and are current levels of funding for the INSET processes adequate?

1.4 Information used in conducting the review

The Plan (both the Technical and Full Reports) forms the basis of the background review for this project.

In addition to the policy plan, the team reviewed the NEEDU report 2012¹. The report presents findings from the NEEDU's systematic evaluation of the state of schooling in the first three grades, which was based on a sample of largely urban schools spread across the nine provinces. Although the report is based on the foundation phase, it gives an indication of the broader knowledge gaps of teachers across the teaching phases.

Other sources used include:

- Vulindlela data provided by National Treasury.
- Public service salary scales from DPSA.
- Annual reports of the DBE.

1.5 List of documents that make up the review

The project outputs that make up the review are:

- Step 2 and 3 - *EPR INSET Programme Elements* – this Excel workbook sets out the responsibilities of the departments in the different spheres of government, the policy processes, a chain of delivery for each policy process and the performance indicators.
- Step 4a - *EPR INSET Exp Analysis*

¹ The state of literacy teaching and learning in the foundation phase.

- Step 4b - *EPR INSET Costing Model* – a costing model of INSET that allows for different delivery approaches and demand scenarios to be modelled.
- Step 5 - *EPR INSET Final Report* – this report.

2. The analysis of policy processes

2.1 Overview

The Plan identifies and describes specific outputs and related activities, clearly indicating responsible agencies as well as the contributions the various stakeholders must make. The Plan groups the outputs and activities according to the agency that will lead the relevant area of implementation. The main role players identified in the Plan included the national DBE and the Provincial Education Departments (PEDs) with their respective district offices. Their main responsibility areas, as outlined in the Plan, are:

Department of Basic Education

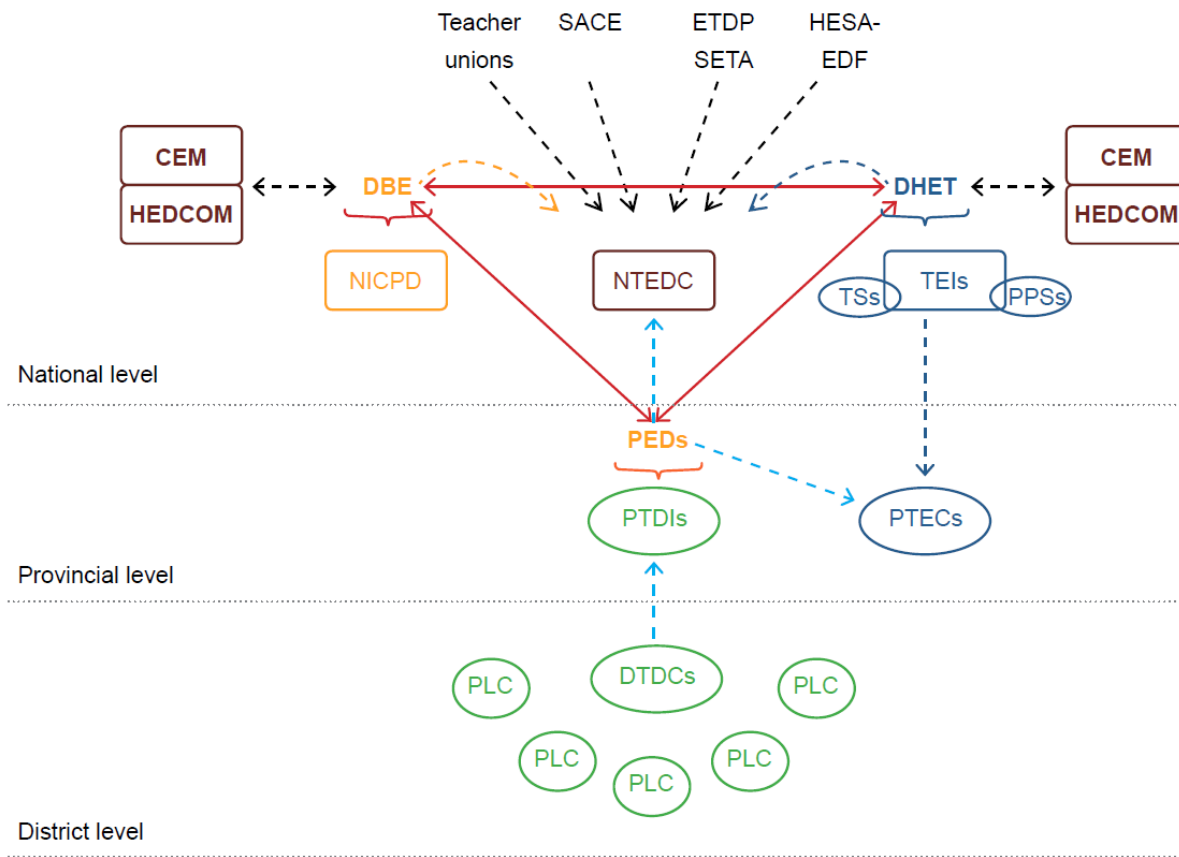
- the establishment of a National Institute for Curriculum and Professional Development (NICPD);
- the development of processes to assist teachers to identify their development needs and to enable expanded opportunities for access to quality Continuing Professional Development (CPD) activities and programmes to meet these needs; and
- the identification of system priorities for targeted teacher development.

Provincial Education Departments

- Provincial Teacher Development Institutes (PTDIs);
- District Teacher Development Centres (DTDCs); and
- Professional Learning Communities (PLCs).

Other role players identified include: the South African Council of Educators (SACE), the Department of Higher Education and Training (DHET), and teacher unions. The relationships between these different role players are set out in Figure 1 on the following page.

Figure 1: INSET role players



Acronyms:
 DBE – Department of Basic Education
 DTDC – District Teacher Development Centres
 NICPD – National Institute of Continuous Professional Development
 PED – Provincial Education Department
 PTDI – Provincial Teacher Development Institutes
 PLC – Professional Learning Communities
 SACE – South African Council of Educators

Source: *Integrated Strategic Planning Framework for Teacher Education and Development in South Africa 2011 – 2025*

For the purposes of this project, only activities that form part of the DBE and the PED's responsibility were analysed. Using the Plan, the following policy processes were identified for the different role-players:

Table 1: Policy processes for INSET

	Policy processes
National DBE	Develop/refine INSET policy Develop INSET implementation strategy Cost INSET implementation strategy Develop effective communications strategies with sector Establish NICPD (note it remains part of the DBE) Teacher self-assessment system Identify sector-wide priorities for teacher development Develop continuing education and development courses Monitor impact of INSET programmes Evaluation INSET effectiveness
PEDs	Develop INSET implementation plan and budget Develop effective communication strategies with sector Establish PTDI (note it remains part of PEDs) Develop continuing education courses Provide accessible physical space for providing training INSET training Management of DTDCs Management of PLCs Monitor & evaluate
District offices	DTDC Maintain resource centres of teacher support materials Facilities to provide INSET courses and for PLCs Manage teacher self-assessments and PDPs Run INSET courses Maintain database of educator needs PLCs Monitoring Evaluate Support to teachers
Schools	HODs fulfil management requirements in relation to CPD Self-help INSET organised by schools

Elements such as “Costing implementation strategy” and “Develop effective communication strategies” were added to the elements extracted from the policy document. Although these elements are not explicitly mentioned, they are necessary steps in ensuring the effective roll-out of INSET.

2.2 Key findings regarding the policy processes

1. *There is a need to close the gap between policy development and implementation planning.* In most of the DBE’s policy initiatives, the PEDs are required to implement the policies. In the case of INSET, this is again the case. The success of the Plan depends on the PEDs, which are responsible for implementing large parts of the INSET policy. Where a PED has good capacity, a lack of implementation guidance can be beneficial in that it gives the provincial department space to be innovative. However, where the PED has poor capacity, then the lack of guidance results in poor implementation planning and a failure to deliver. It is therefore important for the DBE to give adequate guidance to the PEDs regarding how to implement the INSET Plan.

The following observations were made when examining previous DBE plans. These are also relevant to the INSET policy if the department does not caution against them when implementing INSET:

2. *Sufficient time and effort needs to be invested in monitoring provincial plans, processes, budgets, spending and performance.* Generally, the DBE sees itself as a policy department and so has not developed the capacity to monitor and manage implementation by the PEDs. There is

also a sense that the PEDs resist any attempts by the DBE to monitor and manage, arguing that their location in provinces means they are not ‘under’ the authority of the national department. Indeed, National Treasury appears to do more monitoring of the PEDs than the DBE itself. This culture needs to change. The DBE needs to take responsibility for overseeing and managing the implementation of INSET by the PEDs and not “leave it to them to decide”. It is too important for that.

3. *Holding officials accountable.* Improving planning and implementation capacity is only likely to contribute positively to service delivery if processes to hold officials responsible and accountable for implementation are strengthened, starting from the national department and working down to the school level.
4. *Most of the costs of national policies are borne by the PEDs.* This means that the DBE is developing policies it does not need to fund. This dilutes the responsibility of the DBE to ensure that the policies are indeed affordable and that implementation can realistically be financed by the PEDs – within available resources. As highlighted by the results of the costing model (see below), this is clearly an issue in relation to INSET.

3. The performance analysis

The performance analysis builds on the policy processes identified above. One of the challenges of the EPR methodology is that the outputs of the analysis are best viewed in Excel. This is particularly true of the performance analysis.

The detail of the performance analysis is presented in *2013.10.30 INSET Programme Elements*.

Methodological observation regarding intermediate outputs

From a management perspective, two elements in the performance analysis are of particular interest:

- i. *The intermediate outputs of each performance element.* The managers responsible for managing the activities related to the performance elements are responsible for ensuring these intermediate outputs are produced. It is a key assumption of the chain of delivery that if these intermediate outputs are produced, then the programme level outputs, outcomes and impacts will be realised.
- ii. *The performance indicators for the intermediate outputs.* Given the central importance of the intermediate outputs, how they get measured is very important. Care needs to be given to choosing appropriate indicators. These indicators essentially measure the extent to which delivery takes place within the different policy processes, and so measure the performance of the managers responsible for managing the policy processes.

While a departmental strategic plan should specify the programme level outputs and related indicators, it is submitted that managers’ *performance agreements* should outline the policy processes they are responsible for managing, the intermediate outputs they need to produce, and the performance targets, which are based on the performance indicators linked to the intermediate outputs.

3.1 The chain of delivery and indicators for INSET

Table 2 sets out the programme level outputs, outcomes and impacts for INSET, along with the proposed indicators:

Table 2: Programme level outputs, outcomes and impacts

National Department of Basic Education							
Impacts	Towards the realisation of schooling in 2025 i						
Indicator / Measure	No. of young, motivated, and trained teachers attracted into the teaching profession each year	Improvement in teacher professionalism	Improvement in teacher teaching skills, subject knowledge and computer literacy	Improvement in teacher job satisfaction			
Data source							
Direct impact of INSET	A labour force that can be productively employed: appropriate skills and match to labour market ii						
Indicator / Measure	Youth unemployment rate & change over time	Average and median real labour market earnings & change over time	Increase in the % of learners progressing to higher education				
Data source	QLFS, StatsSA	No.t currently available	StatsSA				
Outcomes	Improved quality of teacher education and development in order to improve the quality of teachers and teaching						
Indicator / Measure	Improved ANA results at all levels?	Improvement in Matric languages, mathematics and science results	Increase in the % of learners able to progress to higher education	Increase in the % of learners able to progress to vocational training			iii
Data source	ANA	Matric results	StatsSA	StatsSA			
Outputs	Individual and systematic teacher development needs are identified and addressed						
Indicator / Measure	National summary of output indicators by province	Teacher diagnostic tests in place	No. of pedagogical courses developed	No. of curriculum short courses developed			
Data source	Provinces	INSET monitoring system	INSET monitoring system	INSET monitoring system			
Provincial Education Departments - Head Office							
Outputs	Teacher support and access to teacher development opportunities enhanced at local level						
Indicator / Measure	Provincial summary of district output indicators	No. of PTDLs with adequate infrastructure for short courses	No. of PTDLs with adequate residential infrastructure for long courses	No. of curriculum short courses offered	No. of qualification courses offered		
Data source							
Districts							
Outputs	Teacher support is enhanced at local level						
Indicator / Measure	District summary of institute/centre output indicators	No. of DTDCs with adequate infrastructure for courses	No. of INSET courses offered	No. and % of teachers assisted with self assessments	No. and % of educators assisted to develop Personal Development Plans (PDPs)	No. and % of teachers assisted to apply and access funding for courses	No. of staff development activities planned to meet specific needs identified against No.rms & standards
Data source							

With regards to the above table, please note the following:

- i. This impact statement was drawn directly from the Plan, which states that “the Plan is strongly aligned with...the DBE’s *Action Plan 2014*, which has among its goals the following:

- Goal 14: Attract a new group of young, motivated and appropriately trained teachers into the teaching profession each year.
- Goal 16: Improve the professionalism, teaching skills, subject knowledge and computer literacy of teachers throughout their entire careers.
- Goal 17: Strive for a teaching workforce that is healthy and enjoys a sense of job satisfaction.”

The above impact statement and the measures are vague and do not provide a sound basis for effective monitoring of the policy roll-out and impact because they are not measurable in most instances.

- ii. In light of the above, the team proposes the *direct impact of INSET* as an appropriate and measurable impact statement.
- iii. The success of teacher development cannot only be measured by the number of school-leaving candidates moving on to higher education institutions. Due to the lack of higher education facilities, not all school leavers will get access, even if they have met the entry standards. An additional indicator, “Increase in the percent of learners being able to progress to vocational training”, was therefore introduced to broaden the measures.

The following table shows the policy processes, the intermediate outputs and the related performance indicators:

Table 3: Intermediate outputs and performance indicators for INSET

	Programme elements	Intermediate outputs	Indicator measure	Data source
National DBE	Develop / refine INSET policy	Overall policy for INSET	Accessible, user friendly policy document/s	MI
	Develop INSET implementation strategy	Costed Implementation Plan	Comprehensive implementation plan	MI
	Cost INSET implementation strategy		Detailed implementation budget i	MI
	Develop effective communications strategies with sector	Sector fully informed of INSET strategy and opportunities	Survey stakeholder awareness	Commissioned survey
	Establish NICPD (note it remains part of DBE)	Required capacity within DBE to implement policy	Vacancies in NICPD critical posts	HRI
	Teacher self-assessment system	Functioning system of self-assessment in place	Accessible, user friendly assessment tool	MI
	Identify sector-wide priorities for teacher development	Clear INSET priorities		
	Develop continuing education and development courses	High quality INSET courses	Accessible user friendly courses & materials	MI
	Monitor impact of INSET programmes	Functional monitoring system in place	Monitoring readiness/ effectiveness evaluation report	MI
	Evaluation INSET effectiveness	Baseline study and progress reports against baseline and plans	Baseline study and Evaluation Plan	MI
Provincial education departments	Develop INSET implementation plan and budget	Costed implementation plan funded in budget	Survey stakeholder awareness	Commissioned survey
	Develop effective communication strategies	Sector fully informed of INSET strategy and opportunities		
	Establish PTDI (note it remains part of PED)	Required capacity within PED to implement policy	Vacancies in PTDI critical posts	HRI
	Develop continuing education courses	High quality INSET courses	Accessible user friendly courses & materials	MI
	Provide accessible physical space for providing training	Well-managed training facility	Accessible, user friendly physical training space	MI
	INSET training	Effective INSET training	Number of courses provided per year against target	MI
	Management of DTDCs	Required capacity within PED to implement policy	Vacancies in DTDC critical posts	
	Management of PLCs	Oversight of district management of PLCs	Vacancies in PLCs critical posts	
	Monitor & evaluate	Provincial information on INSET implementation and performance		
District offices	DTDC ii	Effective INSET training	Number of courses provided per year against target	
	Maintain resource centres of teacher support materials	Well-stocked, up-to-date resource centres		
	Facilities to provide INSET courses and for PLCs	Well-managed training facility	Accessible, user friendly physical training space	MI
	Manage teacher self-assessments and PDPs	Effective teacher self assessments		
	Run INSET courses	Effective INSET training	Number of courses provided per year against target	MI
	Maintain database of educator needs	Database on identified educator needs	Effective database in place	MI
	Professional Learning Communities	Effective system of PLCs in place	Number of meetings per year against target	
	Monitoring	District information on INSET implementation and performance	No. and % of programmes not reporting on monitoring system	INSET monitoring
	Evaluate			
	Support to teachers	Effective teacher support		
Schools	HODs fulfil management requirements in relation to CPD	Well-managed CPD	Continuous improvement in department results	
	Self-help INSET organised by schools	In-school INSET		

With regards to the above table, note the following:

- i. Departments frequently argue that the reason they cannot deliver on a particular government priority is because the relevant programme is under-funded. There was considerable debate regarding how to measure whether the budget provided for a programme is adequate or not without setting up a situation where departments can produce unrealistic costings and then when Cabinet does not allocate them what they requested they can claim to be under-funded.
- ii. In response to the badly coordinated, poorly monitored and burdensome traits of the current teacher development system², the Plan seeks to introduce various programmes to improve teachers' experiences when it comes to continuous development. These include well resourced teacher development centres (DTDCs), networking and partnership opportunities among role players at all levels (PLCs). What is important about these initiatives is that it detaches teacher development from pay-related performance appraisals (a key feature of the current system) and places the responsibility for teacher development primarily with the teachers themselves. This obviously has its associated risks when dealing with teachers who are demotivated and uninterested.

3.2 Key findings regarding the programme analysis

5. *Indicators are focussed on high level outputs and outcomes.* The indicators set out in the Plan are appropriately 'high level', providing an over-arching perspective of performance against mandate. This would not be a problem if there was a set of 'secondary' indicators that can be used to monitor the implementation of specific INSET programmes.
6. *More attention needs to be given to the practicality of certain aspects of INSET.* For instance, though the PLC is a good initiative to get teachers together in a supportive developmental environment, it is not clear whether much thought has been given to the practical implementation planning of these gatherings. The Plan proposes that the DTDC will serve as the local central meeting place for the PLCs.³ The reality is that many teachers do not have vehicles and find it hard to get by with their current salaries. So teachers are likely to request to be reimbursed for their travel expenses to and from the PLC meetings. Who will pay for this travel expense – the school or the PED? The costing exercise (discussed in section 5 below) shows that reimbursement for travel expenses for PLCs alone could cost over R640 million per year.
7. *Is enough attention given to training the support structure for teacher development?* Critiques of the Integrated Quality Management System (IQMS) noted that it was time-consuming, bureaucratic and involved too much paperwork. However, these issues were exacerbated by the fact that the district officials did not have the capacity or adequate training to effectively use the system.⁴ Mention of capacity building of provincial and district officials to support teachers is made in the Technical Report, but is merely a recommendation. It is also mentioned in the Plan, but it is not clear how or by whom the development will be provided. It is very important to ensure that the programmes highlighted in the Plan do not lose impact due to staff at the district or PED levels not being adequately trained.

² Integrated Strategic Planning Framework for Teacher Education and Development in South Africa, 2011 – 2025, Technical report, pg. 13

³ Integrated Strategic Planning Framework for Teacher Education and Development in South Africa, 2011 – 2025, Full Plan, pg. 14

⁴ Integrated Strategic Planning Framework for Teacher Education and Development in South Africa, 2011 – 2025, Technical report, pg. 13

4. Costing model

The costing model is designed to allow for a high degree of flexibility in the specification of the different variables. This is to enable users of the model to explore different options with regards to these variables and so test the cost implications of different modes of training delivery, the implications of increasing or decreasing the number of teachers to be trained or the amount of training days to be provided. The model also includes assumptions regarding the average number of learners per course and the percentage of courses run during school holidays. These factors impact on costs if increased or decreased.

4.1 Structure of the costing model

The following figure sets out the structure of the costing model.

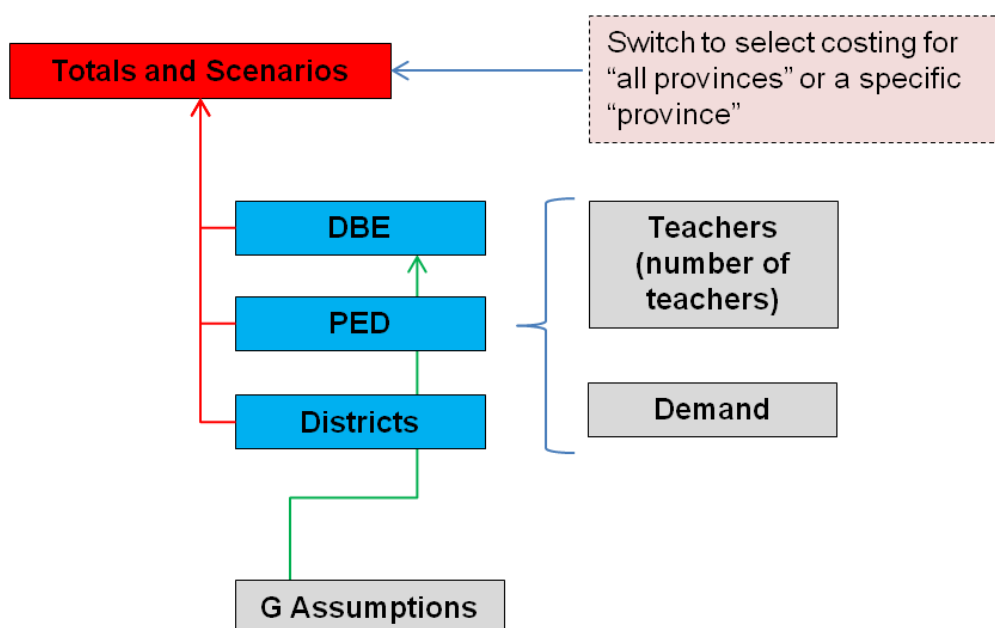


Figure 2: Spreadsheets in the INSET costing model

The model consists of seven main worksheets:

1. *General Assumptions* – Contains general assumptions that feed through to many of the calculations in the working sheets:
 - inflation and salary increase assumptions for the MTEF period,
 - salary levels of personnel,
 - assumptions regarding the number of work days in a year.
2. *Totals & Scenarios* – Contains the totals for INSET across the levels, namely national, provincial and districts. This worksheet also provides different options of key cost drivers that can be adjusted to test the implications of certain policy decisions on total costs.
3. *DBE* – The cost of INSET to the National Department of Basic Education. The National Institute for Curriculum & Professional Development (NICPD) is also costed within this sheet.
4. *PED* – The assumptions and cost of INSET to the PEDs.
5. *Districts* – The assumptions and cost of INSET to the district education offices.

Note: Although there is only one worksheet for PEDs and districts, there is an option to choose a

specific province from the drop down list on the Totals & Scenarios worksheet, which appears as follows:

Choose "Total Provinces" or the specific "province"

Total Provinces

If a specific province is chosen, then the costs shown on the PED and districts worksheets will be for that specific province.

6. *Teachers* – This worksheet contains the number of teachers and districts per province.
7. *Demand* – This worksheet contains the assumptions used to determine the demand for INSET.

Note: Assumptions regarding the demand for INSET are based on the Continuous Professional Teacher Development (CPTD) points programme, which requires that teachers must acquire points over a three year period. INSET programmes are, however, not the only source from which teachers can earn points. This means that certain teachers may opt to not participate in INSET training, but earn their points through university courses or conferences instead.

The policy processes provided the basis for what needed to be costed in the model. In many instances, policy processes were grouped together under a specific heading and so are not costed separately. The *Service Description* worksheet provides a breakdown of the policy processes that are costed on each worksheet.

Although policy processes were identified at school level for INSET, these elements were not costed as it was assumed that they form part of normal school functions and budgets.

The costing model has been developed to allow the user to specify four different cost scenarios for INSET. Only scenario one covers the period 2014/15 to 2016/17. While users may define their own scenarios, the costing model is set up to reflect the following two scenarios:

1. **Pragmatic Scenario:** this scenario explores how the policy purpose of INSET can be achieved cost-effectively based on practical assumptions related to the idea that INSET is a continuous development programme for teachers and is likely to develop over time. This scenario provides a benchmark against which the other scenarios can be compared. It incorporates many of the cost saving and efficiency measures discussed in section 4.3 below
2. **Scenario 1:** this scenario shows the Pragmatic Scenario over the MTEF, from 2014/15 to 2016/17.
3. **Scenario2:** this scenario is adjustable, providing the ability to test different key Policy Scenarios.
4. **Policy Scenario:** this scenario shows the costs based on the assumption that all teachers will participate in INSET each year. Furthermore, the ideal training situations/environments and structures as envisaged by the Plan are provided for.

4.2 Costing model outcomes

4.2.1 Fiscal implications of INSET

Using the Vulindlela data, it is estimated that in 2012/13 the DBE spend nearly R60 million on HRD, and that PEDs spent a combined R454 million. Both these figures exclude bursaries. Should bursaries be added back, total spending on HRD is about R61 million for DBE and R580 million for PEDs. Therefore a total of R641 million was spent on HRD by the DBE and PED's in 2012/13.⁵

⁵ There is a trade-off the department needs to make between spending on INSET and bursaries.

Using the costing model it was calculated that, if INSET were to be implemented in accordance with the policy parameters set out in the Plan, and it is assumed that all teachers will participate in INSET each year, then the overall direct cost to the DBE and PEDs⁶ would be R12.3 billion per year, with R168 million attributed to DBE and R12.289 billion to PEDs. In addition, it is estimated that a further R6.7 billion is required for capital infrastructure – mainly training facilities. Note that this scenario assumes the most ideal training situations/environments.⁷ For instance, in this scenario there are only 20 learners per course (the smaller the class, the better the learning experience).

Clearly, these levels of spending are unaffordable given the current fiscal constraints. Therefore a Pragmatic Scenario was developed to explore how the policy intent can be achieved more cost-effectively by prioritising specific aspects of the INSET policy. It is also assumed that only one third of the 425 023 teachers in the country in 2013 will participate in INSET opportunities. This Pragmatic Scenario is estimated to require R2.265 billion, with R168 million required for the DBE and R2.1 billion for the nine PEDs.

Scenario 2 shows the Pragmatic Scenario, but with the teacher demand for INSET adjusted downward until the costing is more or less equal to what national and provinces spent on HRD in 2012/13.

The following table provides an overview of each of the above scenarios for the 2014/15 financial year.

Table 4: Fiscal implications of INSET given different scenarios

SUMMARY	Pragmatic Scenario	Scenario 2	Policy Scenario
	2014/15	2014/15	2014/15
Total INSET			
Cost of employment	R 331 383 865	R 208 415 963	R 1 128 847 340
Operational costs	R 1 917 883 905	R 422 713 485	R 11 046 836 079
Payments for capital assets	R 16 569 193	R 10 420 798	R 56 442 367
Total operating costs	R 2 265 836 962	R 641 550 246	R 12 232 125 786
Total infrastructure costs (once-off)	R 804 000 000	R 60 000 000	R 6 618 000 000
A. National Management			
Cost of employment	R 24 364 261	R 24 364 261	R 24 364 261
Operational costs	R 142 491 065	R 142 491 065	R 142 491 065
Payments for capital assets	R 1 218 213	R 1 218 213	R 1 218 213
Total costs	R 168 073 539	R 168 073 539	R 168 073 539
B. Provincial Management	Total Provinces		
Cost of employment	R 160 331 064	R 68 027 815	R 787 608 840
Operational costs	R 1 407 090 373	R 154 189 654	R 9 565 977 332
Payments for capital assets	R 8 016 553	R 3 401 391	R 39 380 442
Total costs	R 1 575 437 991	R 225 618 860	R 10 392 966 613
C. Districts			
Cost of employment	R 146 688 539	R 116 023 888	R 316 874 239
Operational costs	R 368 302 466	R 126 032 765	R 1 338 367 682
Payments for capital assets	R 7 334 427	R 5 801 194	R 15 843 712
Total costs	R 522 325 432	R 247 857 847	R 1 671 085 634
D. Infrastructure			
PED infrastructure	R 702 000 000	R 60 000 000	R 6 324 000 000
District infrastructure	R 102 000 000	R -	R 294 000 000
Total costs	R 804 000 000	R 60 000 000	R 6 618 000 000

It is notable that in each instance, the PEDs are responsible for majority of the required spending, and so are critical to the success of the Plan. If the provinces do not budget adequately for the

⁶ There are other costs related to INSET that are not covered: e.g. school's contributions out of own funds, teacher's investment in their own training (e.g. further studies) and state subsidies to universities (part of which are used for INSET).

⁷ These assumptions are discussed in greater detail in section 4.2.3.

implementation of INSET, the Plan will not deliver the intended results. This emphasises the importance of DBE playing a strong leadership and oversight role.

Scenario 2, which is built around the total funding available for HRD within the relevant DBE and PED programmes, allows for the training of around 11 000 teachers per year. This is 2.5 per cent of the total number of teachers in the country. In fact, it is only about half the total number of school heads.⁸

Looking at the breakdown of costs between national, provincial and districts, the bulk of the costs will be carried by the provinces. This is to be expected, given that much of the training will be taking place at the provincial and/or district level.

There is a considerable funding gap. This needs to be taken into account when evaluating whether the proposed INSET policy will deliver meaningful improvements in the quality of teaching and therefore improve the value for money government gets on the rest of its spending on education, or not. If INSET is implemented at too low a level (e.g. only reaching 5 per cent of teachers) the desired impact is unlikely to be measurable at a system level. However, it also needs to be acknowledged that it will take a number of years to build up INSET systems to deliver at scale. It is therefore proposed that the DBE develop an eight year implementation plan, which will require an additional spend of around R220 million per year.

4.2.2 INSET spending relative to the cost of employment

In terms of the government's policy on continuing professional development of public servants, each department is required to allocate one per cent of its budgeted cost of employment to HRD.

The following table shows the cost of employment and HRD spending of the PEDs in 2012/13 for the three budget programmes that relate directly to public school education, namely:

- Programme 2: Public Ordinary School Education
- Programme 4: Public Special School Education
- Programme 6: Early Childhood Development (Grade R)

⁸ This raises questions around the wisdom of rolling out a diagnostic tool that will enable all teachers to assess their own training needs, when current funding only allows for a very small percentage of those needs to be met through training. There is a risk that the entire INSET strategy will lose credibility as a result.

Table 5: HRD spending as a percentage of cost of employment in selected programmes in PEDs for 2012/13

<i>Rands</i>	Cost of Employment (COE)	Budgeted HRD in 2012/13	Actual HRD spending in 2012/13	HRD spending as % of COE	1% of COE	% Shortfall
Eastern Cape	18 761 908 279	97 390 000	86 443 322	0.46%	187 619 083	53.9%
Free State	7 389 772 007	47 542 000	29 828 856	0.40%	73 897 720	59.6%
Gauteng	18 075 453 858	164 141 000	75 596 059	0.42%	180 754 539	58.2%
KwaZulu Natal	26 411 239 663	170 968 000	70 638 354	0.27%	264 112 397	73.3%
Limpopo	16 553 866 144	33 535 000	30 534 756	0.18%	165 538 661	81.6%
Mpumalanga	10 495 789 704	42 386 000	39 924 361	0.38%	104 957 897	62.0%
North West	7 773 754 444	17 610 000	43 935 412	0.57%	77 737 544	43.5%
Northern Cape	2 857 814 082	49 838 000	14 970 369	0.52%	28 578 141	47.6%
Western Cape	10 122 065 721	185 439 000	188 886 208	1.87%	101 220 657	-86.6%
Total	118 441 663 902	808 849 000	580 757 698	0.49%	1 184 416 639	51.0%
<i>Pragmatic Scenario INSET costs for</i>	<i>2 097 763 424</i>			<i>1.77%</i>		
<i>Policy Scenario INSET costs for prov</i>	<i>12 064 052 247</i>			<i>10.19%</i>		

The above table shows that in 2012/13 eight of the nine PEDs spent significantly less on HRD than one per cent of the cost of employment within the three sub-programmes. Only the Western Cape PED, at 1.87 per cent, spends more than the one per cent required by government's HRD policy.

The Pragmatic Scenario indicates that provinces would need to spend 1.8 per cent of the 2012/13 cost of employment in the three sub-programmes, and the Policy Scenario indicates a spending level of 10.2 per cent.

4.2.3 Human resource implications

A common trait of many government policy initiatives within the social service sector is the large proportion of the related budget that is allocated to employment costs. The following table shows the cost of employment to each of the government spheres for each of the scenarios. We see that, in the Pragmatic Scenario, the cost of employment is 15 per cent of the total cost. It should be noted that this figure primarily covers the managers and administrators of INSET, and excludes the course facilitators and locum teachers. If these are added in, then the cost of personnel rises to 44 per cent of the total cost.

Table 6: Cost of employment by delivery role-players

	Pragmatic scenario	Scenario based on 2012/13 Budget	Policy scenario
	2014/15	2014/15	2014/15
Total national employment	24 364 261	24 364 261	24 364 261
Total provincialemployment	160 331 064	80 822 325	787 608 840
Total district cost of employment cost	146 688 539	120 242 039	147 466 557
Total	331 383 865	225 428 624	959 439 657
<i>COE as % of INSET Total</i>	15%	26%	8%
Other personnel related spending			
Educator locum cost	271 987 519	55 468 970	1 651 628 752
Cost of course facilitators	385 079 551	78 532 890	2 473 418 692
<i>Educator locum costs as % of INSET Total</i>	12%	6%	14%
<i>Course facilitator costs as % of INSET Total</i>	17%	9%	20%

Important in the table above is the cost of locum educators required to stand-in for those who are attending training courses. This is a substantial cost burden to place on PEDs in addition to the cost of employees to run the INSET programmes. The cost of the facilitators to run the courses is currently included in operational costs, but if the departments employ them directly, then the cost would shift to cost of employees. The cost of facilitators comes to 17 per cent of the total costs in the Pragmatic Scenario.

Table 7 on the following page shows the number of officials required to implement the INSET policy, by scenario. It is not known how many of these officials are already employed.

Table 7: Number of officials required to manage INSET

	Pragmatic Scenario	Scenario based on 2012/13 Budget	Policy Scenario
	2014/15	2014/15	2014/15
National INSET Management			
Deputy Director General			
Chief Director	1	1	1
Directors	7	7	7
Deputy directors	20	20	20
Assistant Director	8	8	8
Administrative staff (level 8)	16	16	16
Total national employment	52	52	52
Provincial and District INSET Management			
Chief Director	9	9	9
Directors	47	45	69
Deputy directors	303	99	1 839
Assistant Director	806	572	2 219
Administrative staff (level 8)	250	218	490
Administrative staff (level 6)	72	72	143
Total provincial employment	1 486	1 014	4 769
<i>Course facilitators (FTE)</i>	<i>284</i>	<i>58</i>	<i>1 826</i>
<i>Locum teachers (FTE)</i>	<i>5 857</i>	<i>1 194</i>	<i>29 949</i>

Note the number of locum teachers required to stand in for teachers attending training. The actual number of locum teachers required is likely to be substantially higher since the distribution across the country needs to be taken into account – and not all of them will want full-time employment.

4.3 Key cost drivers

The key cost drivers of the proposed INSET policy are:

- The number of educators that participate in INSET training
- The components of the INSET Plan, of which there are six:
 - A diagnostic tool to identify individual training needs.
 - Short training courses (five days).
 - Long training courses (20 days).
 - Resource centres.
 - PLCs.
 - An INSET communication strategy
- The service delivery parameters for each of the above components.

The following table sets out the most important service delivery parameters and how they relate to the cost of implementing INSET.

Table 8: Service delivery parameters of the INSET components

Cost driver	Implications
<i>Number of training days educators are required to complete in a three year cycle</i>	The greater the number of training days educators are required to complete in a three-year cycle the higher the cost of INSET.
<i>Average participation rate of educators in INSET courses</i>	Not all educators will choose to participate in INSET courses to accumulate CPTD points.
<i>Average number of learners per course</i>	The greater the average number of trainees per course the fewer courses are required and therefore the lower the costs.
<i>Percentage of training days allocated to short courses</i>	The long courses require the trainees to be in residence, while the short courses (especially in the Districts) may allow for trainees to travel in to class each day.
<i>Proportion of short courses that are residential</i>	The lower the proportion of short courses that requires trainees to be in residence, the lower the cost.
<i>Percentage of courses run during the school holidays -</i>	The higher the proportion of courses run during the school holidays the fewer educator locums need to be employed to stand-in for the teachers on training, therefore the lower the costs.
<i>Number of INSET courses developed per year</i>	A policy decision needs to be taken as to the appropriate level of course development each year.
<i>Reimbursements for educators attending PLC meetings</i>	A policy decision is needed regarding how the meetings are to be organised, and whether teachers will be reimbursed for transport or not.

4.4 Key policy parameters – savings and efficiencies

The overall cost of INSET changes when one varies the parameters related to the key cost drivers. To illustrate the impact of changing key cost drivers, a tool was developed that allows the user to make certain predefined changes to the model.

The eight key policy parameters can be manipulated on the worksheet Totals and Scenarios.

At the top of the worksheet is the following line:

SUMMARY	Pragmatic Scenario	Scenario 1 (with MTEF)			Scenario 2	Policy Scenario
	2014/15	2014/15	2015/16	2016/17	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R -	R 105 675 519	R 233 173 023	R -1 400 727 211	R 9 966 288 824
Additional cost relative to the Pragmatic scenario - infrastructure		R -	R 51 624 000	R 104 863 296	R -636 000 000	R 5 814 000 000

This line shows the impact of key Policy Scenarios relative to the Pragmatic Scenario as assumptions in the other scenarios are changed. If the number is positive, e.g. R 9.967 billion in Policy Scenario, it means that the change has resulted in a cost increase relative to the Pragmatic Scenario. If the number is negative, the change or changes have resulted in a cost decrease, as in Scenario 2.

In the above line, the difference between the Pragmatic Scenario and the Policy Scenario is the compound result of changing all the policy parameters relative to the settings that underpin the Pragmatic Scenario.

In the following explanation the impact of each policy parameter is explored separately. So the starting point is that all the parameters are set at the same level as in the Pragmatic Scenario and then changes are made to the specific key policy parameter that is being discussed. This is done to isolate the cost impact of changing the particular parameter. Scenario 3 is a separate scenario that we use to illustrate the impact of changing the policy parameters. It is unrelated to the Policy Scenario.

A. Number of training days educators are required to complete in a three year cycle

The greater the number of training days educators are required to complete in a three-year cycle, the higher the cost of INSET. However, the point of INSET is to upgrade educators' teaching capacity, so there is a trade-off between reducing the number of training days and the likelihood of achieving the INSET outcomes.

SUMMARY	Pragmatic Scenario	Scenario 2	Scenario 3
	2014/15	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R 879 021 583	R 1 757 449 135
Additional cost relative to the Pragmatic scenario - infrastructure		R 348 000 000	R 714 000 000
Total INSET			
Cost of employment	R 331 383 865	R 397 344 976	R 462 849 140
Operational costs	R 1 917 883 905	R 2 727 646 321	R 3 537 294 500
Payments for capital assets	R 16 569 193	R 19 867 249	R 23 142 457
Total operating costs	R 2 265 836 962	R 3 144 858 545	R 4 023 286 097
Total infrastructure costs (once-off)	R 804 000 000	R 1 152 000 000	R 1 518 000 000

A No. of training days educators are required to complete in a three year cycle

45	60
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The table above shows the impact of changing the number of training days. The Pragmatic Scenario is set at 30 days, whereas scenarios 2 and 3 are set at 45 and 60 days respectively. All other components are kept the same. Increasing the number of days by 15 and 30 days equates to an operational cost increase of R879 million and R1.76 billion respectively, relative to the Pragmatic Scenario. The greater the number of training days required, the more training facilities are also required, which accounts for the increased infrastructure costs. The Policy Scenario is set at 45 days.

B. Average participation rate of educators in INSET courses

Educators will need to score CPTD points for participating in continuing professional development activities. Not all educators will choose to participate in INSET courses to accumulate points. It is likely that the better qualified educators will participate in non-INSET activities to score CPTD points, such as conferences, university courses etc. The level of participation can be set using this tool.

SUMMARY	Pragmatic Scenario	Scenario 2	Scenario 3
	2014/15	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R 1 437 966 931	R 3 572 006 504
Additional cost relative to the Pragmatic scenario - infrastructure		R 576 000 000	R 1 548 000 000
Total INSET			
Cost of employment	R 331 383 865	R 438 987 903	R 601 261 442
Operational costs	R 1 917 883 905	R 3 242 866 595	R 5 206 518 952
Payments for capital assets	R 16 569 193	R 21 949 395	R 30 063 072
Total operating costs	R 2 265 836 962	R 3 703 803 894	R 5 837 843 466
Total infrastructure costs (once-off)	R 804 000 000	R 1 380 000 000	R 2 352 000 000

B Average participation rate of educators in INSET courses

High qualified (degree +	60%	100%
Medium qualified (some	60%	100%
Sub-standard	60%	100%

The Pragmatic Scenario assumes that 33 per cent of educators participate in INSET activities. In Scenario 2 it is assumed that 60 per cent of all teachers will participate in INSET courses. This change in the level of participation (all else being the same) will lead to a R1.4 billion addition to operating costs and an almost R600 million increase in infrastructure requirements.

Should the department require all teachers to participate in INSET courses, then the cost of INSET will increase by R3.5 billion relative to the Pragmatic Scenario. The Policy Scenario assumes 100 per cent participation in INSET.

C. Average number of learners per course

The greater the average number of trainees per course, the fewer courses are required and therefore the lower the costs. However, there is a trade-off in that the larger the group the less likely the training outcomes will be achieved.

SUMMARY	Pragmatic Scenario	Scenario 2	Scenario 3
	2014/15	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R -218 298 760	R 437 785 581
Additional cost relative to the Pragmatic scenario - infrastructure		R -258 000 000	R 348 000 000
Total INSET			
Cost of employment	R 331 383 865	R 298 860 256	R 397 344 976
Operational costs	R 1 917 883 905	R 1 733 734 934	R 2 286 410 319
Payments for capital assets	R 16 569 193	R 14 943 013	R 19 867 249
Total operating costs	R 2 265 836 962	R 2 047 538 203	R 2 703 622 543
Total infrastructure costs (once-off)	R 804 000 000	R 546 000 000	R 1 152 000 000
C Average number of learners per course			
Short courses		40	20
Long courses		40	20

The Pragmatic Scenario is set at 30 learners per course (long and short courses). If this is increased to 40 per course (in Scenario 2) a cost saving of nearly R218 million in operating costs can be made. Scenario 3 looks at the option of 20 learners per course. This situation is probably the ideal, but increases total operating costs to R2.7 billion when all other factors remain equal. The Policy Scenario is set at 20 learners per course.

D. Percentage of training days allocated to short courses

Long courses require the trainees to be in residence, while the short courses (especially those situated in the districts) may allow for trainees to travel in to class each day. Therefore, the greater the number of short courses, the lower the costs. This is shown in the table below. We can see that, in Scenario 3, where 80 per cent of the training days are allocated to short courses, there is a saving of R179 million compared to the Pragmatic Scenario, which assumes that 40 per cent of the training days are allocated to short courses.

SUMMARY	Pragmatic Scenario	Scenario 2	Scenario 3
	2014/15	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R 133 186 691	R -179 166 337
Additional cost relative to the Pragmatic scenario - infrastructure		R 144 000 000	R -246 000 000
Total INSET			
Cost of employment	R 331 383 865	R 312 407 885	R 355 466 646
Operational costs	R 1 917 883 905	R 2 070 995 374	R 1 713 430 648
Payments for capital assets	R 16 569 193	R 15 620 394	R 17 773 332
Total operating costs	R 2 265 836 962	R 2 399 023 653	R 2 086 670 626
Total infrastructure costs (once-off)	R 804 000 000	R 948 000 000	R 558 000 000
D Percent of training days allocated to short courses		10%	80%

However, there is a preference for long courses, given that they are more likely to bring about behavioural changes. Allocating 90 per cent of the training days to long courses (10 per cent to short courses), as depicted in Scenario 2, increases the costs by R133 million when compared to the Pragmatic Scenario. In the Policy Scenario 10 per cent of training days are allocated to short courses.

E. Proportion of short courses that are residential

The lower the proportion of short courses that requires trainees to be in residence, the lower the cost. This is reflected in the scenarios below, where Scenario 2 assumes 40 per cent residence attendance, while Scenario 3 assumes 90 per cent residence attendance (compared to 10 per cent in the Pragmatic Scenario). Should it be required that 40 per cent of short courses be residential, an additional R52 million will have to be provided for in the budget.

SUMMARY	Pragmatic Scenario	Scenario 2	Scenario 3
	2014/15	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R 52 697 582	R 140 526 885
Additional cost relative to the Pragmatic scenario - infrastructure		R 72 000 000	R 156 000 000
Total INSET			
Cost of employment	R 331 383 865	R 331 383 865	R 331 383 865
Operational costs	R 1 917 883 905	R 1 970 581 486	R 2 058 410 789
Payments for capital assets	R 16 569 193	R 16 569 193	R 16 569 193
Total operating costs	R 2 265 836 962	R 2 318 534 544	R 2 406 363 847
Total infrastructure costs (once-off)	R 804 000 000	R 876 000 000	R 960 000 000

E Proportion of short courses that are residential	Province level	40%	90%
	District level	40%	90%

The Policy Scenario assumes that 80 per cent of short courses are residential. For purposes of the costing, it was assumed that all long courses will be residential in all the scenarios.

F. Percentage of courses run during the school holidays – impact on locum teachers

A cost that is often overlooked is the cost of paying for locum teachers when teachers are on a course. In order to reduce this cost, a policy decision may be taken to run courses (both long and short) during school holidays. The higher the proportion of courses run during the school holidays, the fewer educator locums need to be employed to stand-in for the teachers on training, and the lower the costs.

With regards to this parameter, the Pragmatic Scenario assumes that 20 per cent of courses are run during the school holidays. Scenarios 2 and 3 assume 10 and 40 per cent respectively.

SUMMARY	Pragmatic Scenario	Scenario 2	Scenario 3
	2014/15	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R 42 498 050	R -84 996 100
Additional cost relative to the Pragmatic scenario - infrastructure		R -	R -
Total INSET			
Cost of employment	R 331 383 865	R 331 383 865	R 331 383 865
Operational costs	R 1 917 883 905	R 1 960 381 954	R 1 832 887 805
Payments for capital assets	R 16 569 193	R 16 569 193	R 16 569 193
Total operating costs	R 2 265 836 962	R 2 308 335 012	R 2 180 840 863
Total infrastructure costs (once-off)	R 804 000 000	R 804 000 000	R 804 000 000

F Per cent of courses run during the school holidays (locum costs)	Short courses	10%	40%
	Long courses	10%	40%

From the above table we can see that if 10 per cent of all courses are run during the school holidays, this will carry an operational cost of R42 million more than that of the Pragmatic Scenario, while increasing the proportion to 40 per cent gives us a cost saving of over R84 million in operational costs.

G. Number of INSET courses developed per year

The total number of courses that can be developed and re-developed for INSET is not easily defined, and should be driven by ongoing assessment of training needs and policy priorities. Therefore a policy decision needs to be taken as to the appropriate level of course development each year. The model provides an opportunity to choose between courses developed at national (NICPD) or provincial (PTDI) level. Both the Pragmatic Scenario and Policy Scenario provide for the development of 24 courses. Increasing this to 48 courses will increase costs by R22 million.

SUMMARY	Pragmatic Scenario	Scenario 2	Scenario 3
	2014/15	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R 22 200 000	R 70 300 000
Additional cost relative to the Pragmatic scenario - infrastructure		R -	R -
Total INSET			
Cost of employment	R 331 383 865	R 331 383 865	R 331 383 865
Operational costs	R 1 917 883 905	R 1 940 083 905	R 1 988 183 905
Payments for capital assets	R 16 569 193	R 16 569 193	R 16 569 193
Total operating costs	R 2 265 836 962	R 2 288 036 962	R 2 336 136 962
Total infrastructure costs (once-off)	R 804 000 000	R 804 000 000	R 804 000 000

G Number of INSET courses developed per year

By NICPD	24	50
By PTDI	24	50

H. Reimbursements for educators attending PLC meetings

If the DBE requires educators to attend PLC meetings, then a policy decision needs to be taken as to whether to compensate them for their travel costs or not. However, if the PLCs are arranged into small groups of teachers in close proximity to each other, this cost could be eliminated or reduced significantly.

In the Pragmatic Scenario it is assumed that the PLCs are organised on a voluntary basis at no cost to the state. If it is assumed, as in the Policy Scenario, that the PLCs are formally constituted, meet ten times a year and teachers are reimbursed R150 per meeting for transport this will increase costs by R884 million. The transport subsidies portion of this cost is R643 million.

SUMMARY	Pragmatic Scenario	Scenario 2	Scenario 3
	2014/15	2014/15	2014/15
Additional cost relative to the Pragmatic scenario - operations		R 669 907 526	R 884 544 141
Additional cost relative to the Pragmatic scenario - infrastructure		R -	R -
Total INSET			
Cost of employment	R 331 383 865	R 472 459 146	R 472 459 146
Operational costs	R 1 917 883 905	R 2 439 662 386	R 2 654 299 001
Payments for capital assets	R 16 569 193	R 23 622 957	R 23 622 957
Total operating costs	R 2 265 836 962	R 2 935 744 489	R 3 150 381 104
Total infrastructure costs (once-off)	R 804 000 000	R 804 000 000	R 804 000 000

H Reimbursements for educators attending PLC meetings

	100	150
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5. Summary of key points

In section 1.3 a number of key questions were raised regarding INSET. By way of conclusion, we seek to answer each of these questions briefly:

1. *Does the INSET policy provide guidance on the required management processes and systems to deliver an efficient and effective roll-out of INSET?*
 - The Plan identifies and describes specific outputs and related activities in a clear and structured manner. It indicates who the responsible agencies are, as well as the contributions that various stakeholders must make. The Plan describes the nature of the policy initiative and the requirements at the different levels for delivery, but does not describe or set out the institutional requirements that need to be put in place to deliver on the policies. It is therefore important to ensure that guidance on the implementation process is adequate.
 - Particular attention needs to be given to the following:
 - Investing sufficient time and effort in monitoring provincial activities with regard to processes, budgets, spending and performance.
 - Holding officials accountable.
 - Ensuring that the PEDs take responsibility and ownership of the INSET policy to ensure that adequate funding is allocated to the programmes delegated to them.
2. *What performance measures should be tracked to ensure effective policy implementation?*
 - More focus should be placed on developing measures or indicators that can be used to monitor the actual implementation of key aspects of INSET. The indicators set out in the Plan are appropriately 'high level', providing an over-arching perspective of performance against mandate, but a secondary set of indicators are needed to track implementation.
3. *What funds are currently being spent on INSET?*
 - In 2012/13 a total of R641 million was spent by DBE and PED on HRD from a combined national and provincial budget of R869 million. Part of this is being used to pay for bursaries and learnerships, which reduces the amount available for INSET. There is obviously a trade-off between these two forms of in-service training.
4. *What are the key cost elements and expenditure drivers of INSET?*
 - The main cost drivers are summarised in the Totals and Summaries worksheet of the model, and are discussed in section 4.3 above.

Annexure A - Analysis and mapping of expenditures

The analysis and mapping of expenditure in this EPR required analysis of the DBE and PEDs' budgets.

The Curriculum and Professional Development Unit is a sub-programme in Programme 3: Teachers, Education Human Resources and Institutional Development in the national budget. The activities of this sub-programme are guided by the Integrated Strategic Planning Framework, or Teacher Education and Development. The National Institute for Curriculum and Professional Development is housed in this sub-programme. 2012/13 is the first year in which an allocation was made to this unit.

The budgets of the PEDs are structured into the following programmes:

- Administration
- Public Ordinary School Education
- Independent School Subsidies
- Public Special School Education
- Further Education and Training
- Adult Basic Education and Training
- Early Childhood Development
- Infrastructure Development
- Auxiliary and Associated Services

The programme budget structures for all of the programmes, except Independent School Subsidies, Infrastructure Development and Auxiliary and Associated Services, include a sub-programme budget for Human Resources Development (HRD). The expenditure against the HRD sub-programmes in Public Ordinary Schools, Public Special School Education, Public Special Schools, Early Childhood Development and Adult Basic Education is of interest to this project.

A.1 Analysis of Vulindlela expenditure data

Three files were made available, one each for 2010/11, 2011/12 and 2012/13. The file for 2011/12 does not allow the user to extract data at a disaggregated enough sufficient for meaningful analysis. Useful data on expenditure at the national and provincial levels were therefore extracted from the other two files.

A.1.1 Expenditure reported through Vulindlela by the Department of Basic Education

Within the DBE, the sub-programme relevant to this analysis is the Curriculum and Professional Development Unit. The first year the Unit received a budget allocation was in 2012/13, and therefore only one year's worth of data from Vulindlela for that sub-programme could be analysed.

The table below compares the Vulindlela data to the ENE.

Table A1: Curriculum and Professional Development Unit – Vulindlela compared to ENE

2012/13 - R 000s	ENE	Vulindlela
Programme Management	2 827	2 486
Education Human Resources Management	51 379	50 676
Education Human Resources Development	760 754	815 985
Curriculum and Professional Development Unit	7 955	60 839
	822 915	929 986

According to the ENE, just under R8 million was allocated to the Unit, whereas Vulindlela shows that over R60 million was reported against it. This suggests either massive under-budgeting or massive overspending.

Table A2 shows the largest expenditure items logged against the Unit, ranked in descending order of size.

Table A2: Curriculum and Professional Development Unit – analysis of expenditure

Item	Amount	Share of sub-programme budget
Domestic Travel	36 681 142	60.3%
Compensation of Employees	18 056 954	29.7%
Inventory and Stationery	2 494 195	4.1%
Rental and Hiring	1 170 743	1.9%
Venues and Facilities	653 158	1.1%
System Maintenance	434 806	0.7%
Storage of files	345 878	0.6%
Laundry Services	246 346	0.4%
Storage of assets and foods	228 405	0.4%
Professional Staff	160 429	0.3%
Sub-Total	60 472 056	99.4%
Sub-programme	60 839 131	

Twice as much was spent on domestic travel as was spent on compensation of employees. Of the domestic travel figure, R20 million is spent on accommodation while R9 million is spent on “food and beverages”. According to this data, the Unit spends the equivalent of half its salary bill on travel-related food and beverages for its staff. These proportions are difficult to believe, and need to be queried with DBE.

The only assumptions that can be made from the above analysis is that the staff in the department spend a lot of time travelling and print a substantial amount of material (R2 million of the Inventory and Stationery amount is spent at the government printers). There is no indication of what is included under “Rental and Hiring”, and it can only be assumed that it is the hiring of equipment used in venues and facilities that were paid for. Even though the above numbers demonstrate how unusual the proportions between expenditure on various items are, it does not provide insight into what activities the money is used to fund.

A.1.2 Expenditure reported through Vulindlela by the Provincial Education Departments (select sub-programmes)

At the start of the project it was envisaged that the Vulindlela data would enable us to identify what is currently being spent on the various processes involved in in-service teacher training. The analysis below shows us that the provinces spent a total of R580 million in the Human Resources sub-programmes of the three relevant programmes (Programme 2: Public Ordinary School Education, Programme 4: Public Special Schools and Programme 6: Early Childhood Development).

The 2012/13 Vulindlela data was used to estimate expenditure on INSET in provincial budgets. Total expenditure on bursaries was excluded from the HRD sub-programmes in the three relevant programmes (Programme 2, Early Childhood Development and Public Special Schools). It is assumed that 100 per cent of the balance is spent on in-service teacher training. Based on this assumption, provinces spent R454.8 million on INSET in 2012/13. R348.7 million or 77 per cent of that total figure was spent on the Public Ordinary Schools Education programme. R100.6 million was spent on Early Childhood Development – but only by five provinces. This constitutes 24 per cent of the total.

R4.5 million was spent in the Special Public Schools, but only four provinces spent on INSET in this programme. No province spent money on bursaries in Early Childhood Development or Public Special Schools.

The following three tables illustrate these estimates.

Table A3: Public ordinary schools

R 000s	HRD Sub-programme	Bursaries	Balance (INSET Expenditure)
Eastern Cape	85 141	61 312	23 829
Free State	29 829	3 499	26 329
Guateng	73 993	14 521	59 472
KwaZulu-Natal	63 904	-	63 904
Limpopo	30 535	30 046	489
Mpumalanga	39 085	-	39 085
Northern Cape	40 443	3 802	36 642
North West	14 970	-	14 970
Western Cape	87 636	3 653	83 983
Total Public Ordinary Schools	465 536	116 834	348 703

Table A4: Early childhood development

R 000s	HRD Sub-programme	Bursaries	Balance (INSET Expenditure)
Eastern Cape	806	-	806
Free State	-	-	-
Guateng	-	-	-
KwaZulu-Natal	6 735	-	6 735
Limpopo	-	-	-
Mpumalanga	451	-	451
Northern Cape	1 406	-	1 406
North West	-	-	-
Western Cape	101 250	-	101 250
Total Early Childhood developr	110 647	-	110 647

Table A5: Public special schools

R 000s	HRD Sub-programme	Bursaries	Balance (INSET Expenditure)
Eastern Cape	496	-	496
Free State	-	-	-
Guateng	1 603	-	1 603
KwaZulu-Natal	-	-	-
Limpopo	-	-	-
Mpumalanga	389	-	389
Northern Cape	2 086	-	2 086
North West	-	-	-
Western Cape	-	-	-
Total Public Special Schools	4 574	-	4 574

Tables A6 and A7 below show expenditure reported in the “Human Resources Development” sub-programmes in the PEDs’ budgets as a percentage of the total programme budgets. For instance, in the Eastern Cape the HRD sub-programme budget in the Administration programme makes up 1.2 per cent of the Administration programme budget.

Table A6: Provincial HRD expenditure as a percentage of the programme budget 2010/11

2010/11	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo Province	Mpumalanga	North West	Northern Cape	Western Cape
Administration	1.2%	1.8%	0.8%	0.1%	5.0%	0.6%	1.1%	8.7%	1.8%
Public Ordinary School Education	0.4%	0.4%	0.3%	0.2%	0.2%	0.3%	0.4%	0.5%	0.8%
Independent School Subsidies									
Public Special School Education			0.1%			0.2%	0.6%		
Further Education and Training									
Adult Basic Education and Training	0.2%	0.1%	0.1%			0.4%	0.8%		
Early Childhood Development	0.2%			0.9%		0.2%	0.5%		24.0%
Infrastructure Development									
Auxiliary and Associated Services									

Table A7: Provincial HRD expenditure as a percentage of the programme budget 2012/13

2012/13	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo Province	Mpumalanga	North West	Northern Cape	Western Cape
Administration	1.2%	1.8%	0.8%	0.1%	5.0%	0.6%	1.1%	8.7%	1.8%
Public Ordinary School Education	0.4%	0.4%	0.3%		0.2%	0.3%	0.4%	0.5%	0.8%
Independent School Subsidies									
Public Special School Education	0.1%	0.0%	0.1%	0.0%		0.2%	0.6%	0.0%	0.0%
Further Education and Training		0.0%				11.3%			
Adult Basic Education and Training	0.2%	0.1%	0.1%	0.0%		0.4%	0.8%	0.0%	0.0%
Early Childhood Development	0.2%	0.0%	0.0%	0.9%		0.2%	0.5%	0.0%	24.0%
Infrastructure Development									
Auxiliary and Associated Services									

Where there is nothing shown, i.e. blanks, this is where provinces did not record any transactions against the HRD sub-programme. The “0.0%” shows that the province registered at least one transaction on Vulindlela in this sub-programme, but that the transaction(s) had a zero value.

It can be seen that there is significant variation between the provinces with respect to how much is spent on HRD within the Administration programme. Most provinces spend between 0.2 and 0.8 per cent of the Public Ordinary Schools programme (Programme 2) on the HRD sub-programme. KwaZulu-Natal is an exception as it did not record any expenditure against the HRD sub-programme in Programme 2 in 2012/13.

In 2010/11 only three provinces spent in the HRD sub-programme in Public Special School Education. In 2012/13 eight of the provinces recorded transactions against HRD in this programme. However, only the three provinces that spent against the HRD sub-programme in 2010/11 spent against it again in 2012/13. The transactions the other five provinces recorded were zero value transactions. A similar pattern occurs in Early Childhood Development.

The only notable changes between the two years are: KwaZulu-Natal spent on HRD in Programme 2 in 2010/11 but not in 2012/13; and Mpumalanga spent 11.3 per cent of the FET programme budget on HRD in 2012/13, but didn’t record anything for the same sub-programme in 2010/11.

This suggests that expenditures recorded in these HRD sub-programmes are relatively stable. Given that stability, the rest of the analysis focuses on the data from 2012/13. Table A8 on the following page shows Travel and Subsistence (all domestic) as a percentage of the total expenditure recorded against the HRD sub-programmes.

Table A8: Travel and Subsistence as a percentage of HRD sub-programme budgets

2012/13	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape
Administration			2.3%	78.5%	0.2%	7.6%	18.7%	1.8%	2.6%
Public Ordinary School Education	6.8%	22.3%	0.0%		0.1%	20.5%	16.2%	6.0%	9.3%
Independent School Subsidies									
Public Special School Education						25.2%	38.7%		
Further Education and Training									
Adult Basic Education and Training	0.0%	0.0%					22.9%		
Early Childhood Development				17.3%			7.9%		0.0%
Infrastructure Development									
Auxiliary and Associated Services									

Table A9 shows bursaries and learnerships as a percentage of the total expenditure recorded against the HRD sub-programmes.

Table A9: Bursaries and Learnerships as a percentage of HRD sub-programme budgets

2012/13	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo Province	Mpumalanga	North West	Northern Cape	Western Cape
Administration		63.0%	6.4%		95.6%		14.5%	47.8%	72.3%
Public Ordinary School Education	72.0%	11.7%	19.6%		98.4%		9.4%		10.0%
Independent School Subsidies									
Public Special School Education									
Further Education and Training						100.0%			
Adult Basic Education and Training									
Early Childhood Development				0.0%					
Infrastructure Development									
Auxiliary and Associated Services									

Table A10 below shows “Train and Development” as a percentage of the HRD sub-programmes. This includes training and development of employees and non-employees.

Table A10: “Train and Development” as a percentage of HRD sub-programme budgets

2012/13	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape
Administration	16.4%	17.3%	62.6%	11.2%		91.4%	44.5%	12.6%	7.6%
Public Ordinary School Education	19.9%	9.9%	2.1%		0.0%	79.1%	44.6%	0.1%	21.5%
Independent School Subsidies									
Public Special School Education	100.0%		99.9%			74.8%	61.3%		
Further Education and Training						0.0%			
Adult Basic Education and Training	100.0%	100.0%	100.0%			100.0%	62.9%		
Early Childhood Development	100.0%			81.8%		98.2%	79.5%		0.3%
Infrastructure Development									
Auxiliary and Associated Services									

Note that the above tables compare apples with apples: the same category of expenditure in the same sub-programmes. Yet when the values are compared across the provinces, there are practically no similarities. In other words each of the provinces follows a completely different expenditure reporting processes and/or conduct completely different activities out of the respective sub-programme budgets. It is probably a combination of both.

Table A11 on the following page shows the number of transactions with a value greater than zero that were recorded against the HRD sub-programmes in 2012/13.

Table A11: Number of transactions recorded against HRD sub-programme budget

2012/13	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo Province	Mpumalanga	North West	Northern Cape	Western Cape
Administration	7	22	40	7	19	3	10	36	34
Public Ordinary School Education	14	20	30		7	4	16	46	118
Independent School Subsidies									
Public Special School Education	1		2			2	1		
Further Education and Training						1			
Adult Basic Education and Training	1	1	1			1	5		
Early Childhood Development	1			6		2	3		7
Infrastructure Development									
Auxiliary and Associated Services									

As for the analyses above regarding compensation and travel, Table A11 compares apples with apples. The number of transactions recorded against the HRD sub-programme in Programme 2 is illustrative of the difficulty of working with this data. Mpumalanga records 4, Limpopo records 7 whereas the Western Cape records 118 transactions.

Table A12 shows the above-mentioned transactions recorded by Mpumalanga and Limpopo.

Table A12: HRD Transactions in Programme 2 – Limpopo and Mpumalanga

Limpopo		Mpumalanga	
Item	Value	Item	Value
BURSARIES (EMPLOYEES)	30 045 854	TRAIN & DEV:EMPLOYEES	30 918 678
REGISTRATION FEES	415 370	T&S DOM:ACCOMMODATION	8 011 805
CATERING:DEPARTML ACTIVITIES	39 946	INV STA&PRNT:STATIONERY	111 061
T&S DOM:FOOD&BEVER(SERV)	15 853	CATERING:DEPARTML ACTIVITIES	43 208
H/H:BURSARIES(NON-EMPLOYEE)	9 398		
VENUES AND FACILITIES	4 200		
T&S DOM:ACCOMMODATION	4 135		

The 118 transactions recorded by Western Cape were also analysed and they provide no more insight into the processes and activities in that province than Table A12 provides on Limpopo and Mpumalanga.

Note this is the same sub-programme under the same programme across the different provinces. There is clearly no standardised approach to recording transactions.

Vulindlela has four levels of “objectives” that can be used to describe transactions. The highest is level 7 and the lowest is “objective lowest level”. This facility can and should be used to attach a meaningful description of the objective of transactions to them. The four levels in the hierarchy of objectives can be used to provide rich and layered descriptions of the objectives of expenditure.

Table below shows an analysis of the use of objectives under the HRD sub-programme across all the provinces.

Table A13: Analysis of the use of “Lowest level objectives”

Item	
1. Lowest level items	675
2. Objective lowest level	817
3. Objectives per item	1.21
4. Unique "Objective Lowest Level"	41
5. Objective lowest levels used once	11
6. Objective lowest levels used 2 - 9 times	15
7. Most common "objective lowest level"	
HUMAN RESOURCES DEVELOPMENT	211
WED2.4:HRD INSTITUTIONS	139
POSE HRD	57
WED1.4:HRD HEAD OFFICE	55
IN-SERVICE TRAINING PS 1	39
WED2.4:WSP	37
IN-SERVICE TRAINING CS 1	35
ORGANISATIONAL DEVELOPMENT	30
PROVINCIAL SKILLS DEVELOPMENT	29

Table A13 is a summary of all transactions recorded against “lowest level item” across all provinces in the HRD sub-programmes in 2012/13. A qualitative analysis of the objective lowest levels was performed. Some provinces used “HUMAN RESOURCES DEVELOPMENT” whereas some used a variant of this, but the variant meant the same thing (e.g. in some provinces a P* was added at the end, or a code for the province). Therefore all variants of this were replaced with “HUMAN RESOURCES DEVELOPMENT”. The same process was followed with other transactions that showed this pattern. The analysis in the table above was run after this filtering was completed.

With respect to the above table:

1. There were a total of 675 transactions recorded.
2. There were 817 entries against objective lowest level.
3. On average, each transaction had 1.21 objective lowest level entries.
4. There are only 41 unique descriptors (this number is probably lower, as some descriptors are similar to others and were probably counted as unique).
5. Only 11 descriptors were used once.
6. Fifteen descriptors were used between 2 and 9 times.

The three most commonly-used objective lowest level descriptors were used a combined 407 times (#7 in the table). Therefore one of these three descriptors was used 49 per cent of the time and one of the three was used for 60 per cent of the transactions.

Consider that on average each transaction has 1.21 descriptors and it should be clear that in only a few cases do the descriptors provide any insight into what activity or process the transaction deals with. For instance, only transactions in the “Human Resources Development” sub-programme were analysed, yet these exact words were used 211 times to describe a transaction. The funds in the sub-programme have to be used for human resource development, therefore this description provides absolutely no value.

An in-depth analysis of the different levels of objectives was not possible with the Vulindlela file for 2012/13 and therefore the following applies to the use of the hierarchy of levels of objectives in 2010/11:

- 99.6 per cent of the descriptors used at Level 7 were the same term as that used at the lowest level.
- Descriptors for Objective Level 8 were used to describe two transactions only (2 out of 805). The rest were left blank.
- No descriptors were used for Objective Level 9.

A.2 Mapping expenditure to policy processes

An excel workbook was set up to enable the mapping of budgets to the policy processes. The budgets of the national and provincial departments were set up on the vertical access. This data was summarised at the sub-programme budget level. The policy processes were presented horizontally.

The workbook contains: a worksheet that summarises all the national and provincial expenditure that is mapped; a worksheet showing the mapping of the expenditure of the national department; a worksheet that sums the expenditure mapping of the provincial departments; one worksheet per province for mapping the expenditure of each province.

The process of mapping expenditure involves allocating a portion of the budget to each of the policy processes. The spreadsheets allow the user to input a percentage of a sub-programme budget that should be allocated to an element.

The tables shown in the above analysis of the Vulindlela data relevant to this EPR are just a few of the analyses performed on the Vulindlela data. Many other analyses were performed, but most of these produced little or no value and there was no point discussing them. In mapping the expenditure to the policy processes, assumptions were therefore made with respect to all mapping.

A.3 Key findings

Budgets and the Vulindlela data were analysed with an aim to mapping expenditure and budgets to the elements of the programmes analysed.

The presentation of the budgets in programmes and sub-programmes shows total expenditure at the sub-programme level and total expenditure by line item at the programme level. This presentation of data is a meaningful *financial* framework for reporting and tracking expenditure against budgets, but does not provide much insight into the cost of individual activities or processes funded through the budgets. The budget programme structures provide useful financial information, but this cannot easily be translated into meaningful information about the processes followed.

The above discussion on the data contained in Vulindlela sheds light on how this database is used by provinces, notably:

- The substantial variation in expenditures against the same sub-programmes by different provinces.* Provinces do not have a standard way in which they describe transactions recorded in Vulindlela.
- Transactions are grouped into a few large transactions when they could be more meaningfully split into more smaller transactions* (e.g. Salaries and Wages for all categories of employees are recorded together, whereas this could be split into different levels of management; all domestic accommodation is grouped together whereas it could be split into further categories).

There are valid reasons for transactions of the same kind to be grouped together and it makes sense to have standardised categories of expenditure. Common standards create common understanding and this ensures that financial information is reported correctly. Furthermore, due

to the procurement processes it is often more efficient to make fewer larger transactions than many smaller ones.

Vulindlela creates a platform for reporting financial transactions that is in line with standardised financial reporting procedures. It also provides a platform for including rich detail to financial transactions, which can help evaluate value for money. Each transaction in Vulindlela must be described at 6 different levels. The levels are from “Item Level 2” to “Item Level 6” and then “Lowest Level Item”. The categories that can be used from Level 2 to Level 5 are standardised, and transactions can only fit into one of the provided categories; there is no scope for adding descriptions to the transactions. Between Level 5 and Level 6 information about the nature of the transaction is sometimes added, e.g. Domestic Accommodation (at Level 5) is often split into payments made directly and payments made through travel operators (at Level 6). From a financial perspective this is valuable, even if of limited value from a performance evaluation perspective.

However, in very few instances are there meaningful changes to the description between Level 6 and the Lowest Item Level. While there is clearly compliance with the standardised part of financial reporting, the opportunity to add rich detail in the descriptions at Lowest Item Level is hardly being used. It would therefore seem that the DBE needs to give more attention to developing lower level definitions for the classification of education spending so as to take advantage of the structure and capacity of BAS and Vulindlela.

- iii. *Only in a very few instances are the objectives of the expenditure meaningfully described.* This is a big opportunity for creating meaningful expenditure data that has been neglected. If users of Vulindlela have no inclination to add details in the Item Levels (described in the previous bullet) to the financial descriptions, there is no reason why more use cannot be made of the four different levels of objectives provided in Vulindlela. One transaction (at Lowest Item Level) can be divided into a few objectives without this having any effect on the process of arriving at the financial description. So for example, provinces can continue to record all domestic accommodation as one transaction in the “Item Level” but can split this into a few different objectives in the “Objective Level” part of Vulindlela. Thought needs to be given on how best to structure and use the hierarchy of objectives. The relationship between higher and lower level items of expenditure is linear and simplistic, whereas the relationship between higher and lower order objectives should be non-linear and can be very complex. Vulindlela is a database that works on linear relationships. These relationships are either vertical (department down to sub-programme) or horizontal (the type of transaction). Objectives of expenditure that meaningfully represent realistic processes cannot be easily structured in the same way.