Grade 12 results of QLP schools

Supplement to the QLP Mid-term Evaluation (2002/2003)

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* The contributions by Dr Nick Taylor and Dr Jackie Moyana (JET Education Services), who provided the Grade 12 learner performance data and findings, are acknowledged.

The compilation of the present supplementary article, and the viewpoints expressed therein, however, are the sole responsibility of the HSRC and its author.

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HSRC RESEARCH OUTPUTS

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IMPORTANT NOTE - ERRATUM

(Improving Learning in South African Schools: The Quality Learning Project Mid-term Evaluation)

[The official statement by JET Education Services and the Business Trust, as recorded below, of the aims of the QLP**, has to be read with the text of the first paragraph under "Background" in the EXECUTIVE SUMMARY, as it appears on

Page 5 of the report (full title cited above), in particular to avoid that the formulation of "The primary aim of the QLP ..." is misconstrued and taken to apply in a too limited sense only to selected aspects of learner performance. Also note that the number of 40 000 learners should read 400 000 learners.]

AIM(S) OF THE QUALITY LEARNING PROJECT (QLP)

The QLP is a multi-level, multi-site educational intervention that aims to improve learner performance in 524 South African high schools.

The QLP is underpinned by the principle that mathematics and language are the foundations for all further learning. Therefore, educators at all grades in all learning areas also have to foster the development of better reading and writing skills. This is why, at educator and classroom level, improvement of mathematics and reading and writing abilities are the main foci of the QLP. In order to ensure that schools get effective support and monitoring from districts and that the good practices gained from the project are institutionalised, and therefore sustained, the programme also focuses on the development of district systems and officials.

In improving the quality of learning outcomes, the QLP adopts a systemic approach, which entails improving:

- Learning outcomes in the languages of instruction and mathematics in Grades 8 to 12 in 524 schools.
- Teaching of mathematics, reading and writing skills in 524 schools.
- Governance and management in 524 schools.
- Management of 17 district offices in the 9 provinces, by prioritising human resource and financial management, educational management information systems (EMIS), learning support material (LSM) procurement and distribution, curriculum development, and assessment to enable them to support schools.

The QLP aims to achieve the above by developing systems and management capacity at district and school levels, and by developing the classroom skills of teachers to improve learner performance.

** An early formulation by the Business Trust to its Board referred to the improvement of schools as organisations - measured by improvements in learning outcomes.

(Also please consult Chapters 1 and 2 for more complete coverage of the principles, key outcomes, programmes, and model associated with the QLP, as well as the HSRC's evaluation role and design)

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Table 3: Comparison of Grade 12 learner performance levels in 2001 and 2002 across QLP and non-QLP schools by province, reflected in symbols

		Change from 2	001 to 2002 (ref	lected as symbo	ols)
Province	Passes	Exemptions	HG maths	SG maths	% pass change
EC	++	++	++	++	++
FS	0	++	++		++
GP	0	++	++	++	+
LP	+	++	++	++	++
KZN	*** ***	non sun	A04 NEW	++	-
MP	++	++	++	++	+
NC	-		499	844	++
NW	++	++	++	++	+
WC	++		++	++	+
Total SA	+	++	++	++	+

The main points arising from the analyses in Tables 2 and 3, and partly also from those in Annexure 1, are highlighted next.

National level

As a whole, QLP schools did significantly better than the average national improvement on all five indicators. More specifically, QLP schools exceeded the national increase in:

- the number of learners passing matric by 3,3 percentage points (+ on the scale above);
- the number of learners passing with university exemption by 8,1 percentage points (++);
- the number of learners passing Higher Grade mathematics by 20,8 percentage points (++);
- the number of learners passing Standard Grade mathematics by 19,4 percentage points (++);
- and the overall pass rate by 3,9 percentage points (+).

Thus, the improvements recorded by QLP schools were significantly better than the national averages in terms of quantity, quality and efficiency. Particularly gratifying are the very large positive differences between the QLP and national improvements on all three indicators of quality, namely: the number of matriculation exemptions, and the numbers of learners passing Higher Grade mathematics⁶ and Standard Grade mathematics.

Some caution is required in interpreting the improvements in numbers of learners passing Higher Grade mathematics in some districts, since the numbers are very small – single figures in a number of districts – and are thus subject to large swings, in percentage terms, from year to year. Thus, a district in which the total number of Higher Grade passes increased by 1, over a baseline of 1 in 2001, showed an increase of 100%. This was indeed the case in Libode in the Eastern Cape.

Provincial level

In seven of the nine provinces the improvements shown by all QLP schools aggregated across the province are markedly superior to the provincial average improvements. These are:

- Eastern Cape, which proved to be the most improved QLP province scoring ++ symbols on all 5 indicators;
- Limpopo, Mpumalanga and North-West Province, all of which scored ++ on 4 indicators; and
- Free State, Gauteng and Western Cape, which scored ++ on 3 of the 5 indicators.

The exceptions to these very strong results are KwaZulu-Natal and the Northern Cape, where the aggregated QLP improvements across the province scored ++ respectively on only one indicator each.

District level

Of the 20 QLP districts, only six scored ++ on fewer than three of the five indicators. These are:

- Ngqeleni in the Eastern Cape (++ on two indicators);
- Konekwena in Limpopo (++ on two indicators);
- All three QLP districts in KwaZulu-Natal, being Inanda (++ on two indicators), Ixopo (where the best symbol was + on one indicator), and Ubombo (++ on one indicator); and
- Karoo in the Northern Cape (++ on one indicator).

Discussion and conclusion

The matriculation results for QLP schools show significantly greater improvements from 2001 to 2002 than the average national and provincial improvements, in terms of quantity, quality and efficiency. This is a most encouraging finding at the end of the third year of the project.

Disaggregating these results by province and district allows the QLP management team to identify "underperforming" districts, and to target intervention strategies tailored to their particular needs. It has to be noted that comparatively lower performances in some instances, such as that of the Northern Cape, do not immediately signal underperformance. In the case in point, it was difficult for the Karoo district to retain their top position in the face of other less privileged districts also starting to get on board.

The QLP management team at JET Education Services is in a position to help School Management Teams to make similar comparisons at the level of schools, thus providing them and their district

managers with vital information on their performance. This data was used by district managers, with support from the QLP, to set targets for schools for 2003, to develop support programmes to assist them to meet these targets, and to monitor progress in achieving their goals.

The main conclusion of this brief analysis is that there is every indication that the QLP is on track to meet its primary objective, namely to improve matriculation results in key areas by a minimum of 10 percentage points in 523 schools across all nine provinces.

Given that the QLP intervention programmes still have another almost two years to run (after the release of the 2002 matriculation results), the current trends of improved performance are quite likely to continue during 2003 and 2004, and it is likely that significant impacts will be made at the levels preceding matriculation too.

Appendix 1a: Comparison of QLP matric results from 2001 to 2002 by district, with the respective provincial and the national results

			Ch	Change from 2001 to 2002 (in learner numbers and as percentages)	101 to 2002 (in learner m	unbers and	as percentag	;es)	
	ı	Passes		Exemptions	otions	HG mathematics	nematics	SG mathematics	lematics	% pass
Province	District	Zo	%	oZ OZ	%	Ž	%	N_0	%	change
	Rizana	+193	34.8	+46	115	+4	100	+431	125.3	+15.8
	Flaostaff	+74	52.9	+2	25	0	0	+80	119.4	+11.6
	Libode	+263	146.9	+13	433.3	+	100	+219	405.6	+29.9
F. Camp	Lusikisiki	+184	33.7	+4	14.3	-2	-100	+338	136.3	+19
	Ngaeleni	+110	27.6	+10	166.7	0	0	+188	100.5	+8.1
	Port St Johns	+42	18.9	8+	266.7	+	100	+147	319.6	+3.4
	Total OLP	+866	42.5	+83	94.3	+	57.1	+1403	148.3	+15.7
Total	Total province	+4461	15.5	+1056	25.5	+316	29.0	+9730	102.7	+6.2
Free State T	Thabo Mofutsanvana	+108	hamil hamil	+64	59.8	+2	66.7	+213	55.8	+17.3
+	Total province	+2074	13.2	+880	22.8	+151	13.4	+2880	62.3	+11.7
	D 8	+201	11.2	+76	45.2	+16	44.4	+349	71.4	15.3
Gauteng	D 11	+107	6.3	+38	28.8	6+	33.3	+346	124.5	-0.4
0	Total QLP	+308	80.	+114	80	+25	39.7	569 +	90.6	+7.3
Total	Total province	+3773	8.0	+495	3.6	+372	0.9	+8080	61.9	+4.5
	Bolobedu	+143	12.3	69+	29.7	£-	-33.3	+122	83.0	+15.8
,	Konekwena	-31	-2.6	+25	11.5	+11	275	+123	46.2	+16.3
Limpopo	Zebediela	+30	4.0	+114	85.7	+18	300	+126	144.8	+14
	Total QLP	+142	4.6	+208	35.7	+26	136.8	+371	74.2	+15.3
Total	Total province	+673	1.3	+1523	13.9	+599	52.5	+5322	8.79	+10.0
	A									

(Continued)
Appendix 1a: Comparison of QLP matric results from 2001 to 2002 by district, with the respective provincial and the national results

			Cha	nge from 20	001 to 2002	2 (in learner	Change from 2001 to 2002 (in learner numbers and as percentages)	d as percents	ages)	
	1	Passes		Exem	Exemptions	HG ma	HG mathematics	SG mathematics	nematics	% pass
Province	District	Z	%	No.	%	%	%	No	%	change
	Inanda	+123	16.0	+17	23.3	+10	166.7	+109	50.9	+6.6
	IXODO	-11	-1.0	-21	-11.5	5-	-20.0	+125	33.2	+12.4
KwaZulu-Natal	Omodu		-0.1	7-	-6.1	<i>ج</i> -	-55.6	+222	109.4	-0.1
	Total OLP	11+	4.	7	-3.0	0	0	+692	124.2	+4.8
Total province	vince	+10579	18.0	+1971	12.6	+877	20.7	+12190	75.3	+8.0
Mnumalanga	Moretele	+416	6	+142	07.9	+	166.7	+357	149.4	+13.6
Total province		+4086	22.5	+616	16.6	+84	8.8	+3774	90.1	+8.9
		30	0.3	 	0 0	lan Am	A CC.	+	N.	+
Normern Cape	Maron	-0.7	5.4.3	Ŧ.	-0,0-	# # # # # # # # # # # # # # # # # # #	1.77	CT.	3,	# # ·
Total province	vince	-261	4.7	+106	10.9	+75	26.3	+155	10.3	+5.7
	Mafikeng	+289	17.7	+49	13.7	L+7	7.4	+292	51.2	10.4
North-West	Zeerust	+59	3.5	-18	-5.5	+14	2.99	+317	80.3	+8.0
Province	Total QLP	+348	15.5	+74	10.4	+21	60 60	+609	63.1	+9.2
Total province	vince	+1707	7.4	+7	0.1	+104	10.4	+3230	56.0	+5.3
		6 m est	1		0	4	877		4 04	0
Western Cape	Kuilsrivier	+752	20,5	-14	ا- ئۆر	+112	66.3	4264	49.1	7.8+
Total province	vince	+1938	6.2	+740	7.9	+351	10.2	+3208	33.6	+3.8
Total OLP	OLP	+2966	13.8	+616	19.0	+169	35.8	+4883	86.7	+
TotalSA	SA	+29030	10.5	+7394	10.9	+2929	15.0	+48569	67.3	+7.2
Total QLP - Total SA	Total SA		+3.3		+8.1		+20.8		+19.4	+3.9

Appendix 1b: Comparison of QLP matric results from 2001 to 2002 by district, with the respective provincial results, reflected in symbols

			Change fr	Change from 2001 to 2002 (reflected as symbols)	ted as symbols)	
Proving) strict	Passes	Exemptions	HG mathematics	SG mathematics	% pass change
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Rizana	‡	+	‡	‡	‡
	Floortaff	: ‡	٥	1	‡	‡
	Inode	: ‡	‡	‡	‡	‡
Eastern Cape	I IISİKİSİKİ	‡	1	!	‡	‡
	Nogeleni	‡	‡	i i	1	0
	Port St Johns	+	+	#	+	
Hrop State	Thabo Mofutsanvana	0	+	+	3	‡
	T T T T T T T T T T T T T T T T T T T					
	80	+	+	‡	‡	‡
Gauteng		•	‡	+	#	-
	Bolobedu	‡	++	8 3	‡	‡
occount.	Konekwena	I		‡	:	‡
	Zebediela	+	‡	‡	+	+
	Inanda	0	‡	+	H 2	
KwaZulu-Natal	Ixopo	E I		1	1	+
Warmer 1	Ubombo	1	1		++	46 70
Annual Property of the Propert						
Mpumalanga	Moretele	‡	‡	+	#	+
Northern Cape	Karoo	I	1	1	I.	#
North-West	Mafikeng	‡	‡			‡
Province	Zeerust	1	1	+	+	+
Western Cape	Kuilsrivier	‡	1	++	+	+

Appendix 2: Additional context and background

Introductory comments

This report is submitted to JET Education Services (Project Managers of the QLP) in order to include some preliminary, initial analyses of the matriculation results, as requested by the Business Trust.

In intervention programmes and evaluation projects of the nature of the QLP, it is prudent to keep on debating how best to select, define and improve the criteria against which to evaluate programme impact. The present additional considerations focus only on learner-performance measures, without contradicting either the five-year cycle of the HSRC's evaluation project, just having concluded its mid-term stage, or the thrust of JET Education Services' system-wide, multi-level, multi-site educational intervention programme, as reflected more fully in the baseline and mid-term evaluation reports. As a result, the present document investigates and motivates the value of using indicators derived from selected Grade 12 learner-performance statistics.

Motivation for the supplement

Two main observations were made with the release of the mid-term report during the middle of 2003. First, <u>learner performance</u>, as measured by tests in mathematics and language at Grade 9 and 11 levels, was not perceived as having improved (yet)¹. The most plausible explanation for this observation, in line with the theory of school change, is that it was too soon to expect any change after such a short period of intervention, even though the HSRC already observed improvements pertaining to the levels of district, school and classroom functionality.

The second observation pertains to the fact that it was agreed not to <u>model</u> the effects and <u>outcomes</u> of the QLP interventions at the conclusion of the mid-term evaluation in terms of functioning of the teaching and learning system at the various levels, as well as of learner performance. The reasons for this largely fall outside the ambit of the present article, but include aspects such as sample and methodology changes, and the use of intervention data.

However, there are many aspects pertaining to the two observations just noted that can be debated further in the meantime among QLP participants and roleplayers to clarify the complex dynamics

Some preliminary HSRC analyses of the Grade 9 and Grade 11 results in language (English) and mathematics within the 70 QLP evaluation schools showed that this applied to both pass rates and mean performance scores between 2000 and 2002.

and other intricate issues related to the evaluation project, and in anticipation of the summative evaluation in 2004/5. Some unanswered questions and avenues of interrogation are hence flagged to ensure that the best criteria for evaluating the impact of the QLP over time are found and used.

One plausible claim is that the existing performance indicators or measures, being the mathematics and language marks of a 14% sample of Grade 9 and 11 learners from the QLP schools, were not able to detect any improvements. This dynamic could apply should most items discriminate better at high(er) levels of learner ability. As a result, the first, small increases in learner performance around the relatively low mean scores would not be detected. On the other hand, the low performance has been expected, as it is known that the learners in the QLP programme are from districts deliberately identified as underperforming, and had thus been chosen for intervention precisely because of their low levels of performance. The greatest risk, then, is that (low) variance in learner performance scores would result in failure to detect the "cause" of the latter during modeling. (Also see the reference later in the presentation to Prof. Simkins' advice in this regard, and again note that the performance tests were specifically designed by the HSRC for purposes of impact evaluation and formative information to service providers, and not systemic evaluation.)

Some additional background

Improved criteria will largely benefit the ongoing QLP impact evaluation, the course of which up to the present point is reflected amply in the baseline and mid-term reports. These reports set out how many factors related to timeframe, budget and other resources, for instance, dictated aspects of the design and methodology² of the HSRC's evaluation project, and, as a result, also influenced the focus and presentation of some of the reported findings. The latter showed that salient facets of functioning at district, school and classroom-practice levels visibly / significantly improved, supposedly in response to programme interventions of 18 to 20 months (partly during 2001, but mainly during 2002).

Some interpretation of and <u>observations</u> regarding the meaning of a few of the salient findings made after the mid-term evaluation are warranted at this point. They cover the following:

• The time-span that elapsed since the start of the interventions is too short to expect highly significant improvements in learner performance.

² Including sampling only learners from Grade 9 and 11 classes, determining their performance levels in mathematics and the languages of teaching and learning, and doing so only in 2000, 2002 and 2004.

- The HSRC's learner performance instruments, having uncovered very low mean performance levels, especially for mathematics, display large positive skew (many learners achieved low scores.)
- The open question, in the light of the previous item, is whether or not a deliberate, criterion-referenced strategy aimed at detecting how much of and how well the specified curriculum is covered, is more (or less) valid for programme evaluation than would be any exit test of learner performance ability, which, in this case could be made easier because of known low initial learner knowledge levels³.
- An important observation made is that there were learners that succeeded in achieving high scores. This at least rules out the possibility that it is totally impossible to do well in the tests.
- As a result, a test with greater variance across item-difficulty levels may be more valuable (sensitive in detecting effects) when modeling the causes of learner performance increases, but at the moment we do not know the actual extent of this risk/problem.
- The assessment instruments were constructed to reflect the performance of students covering the entire ability range, with most of the items selected reflecting average difficulty on a specific criterion (e.g., mathematics curriculum coverage). A-priori contributions by JET Education Services, HSRC, education officials, external consultants, and mathematics and language teachers identified core knowledge contents that had to be mastered by learners at the various levels. It was also anticipated that learners could start off at somewhat lower performance levels, but that they should be provided space to grow into the middle and higher ranges of testitem difficulty as the programme started taking effect, rather than having it too easy, and be stranded with tests unable to detect even higher performance abilities brought about by the programme interventions.

Considerations in favour of exploring the use of Grade 12 results

Initial debates and exploration revealed that improvements in the matriculation results of QLP schools between 2001 and 2002 appeared to be significantly better than those achieved by non-QLP schools, both within each province and nationally. These discoveries were mainly the result of the way in which QLP programme management activities unfolded, especially pertaining to the identification of the most improved and highest performing schools and districts every year as part of annual award, feedback and planning ceremonies.

³ Mathematics knowledge levels were observably lower than those for languages.)

As a consequence, the Business Trust requested the HSRC, as a credible independent body, to investigate this hypothesis.

A second component of this brief is to ascertain the extent to which the analysis of matriculation results could throw further light on the findings of the mid-term evaluation of the QLP conducted by the HSRC. In particular, can the analysis illuminate the finding that, while performance of QLP district managers, school principals and teachers showed small but significant improvements between the baseline (2000) and mid-term (2002) evaluations, learner performance at Grade 9 and 11 levels had not improved?

It was therefore agreed that the availability of Grade 12 learner-performance data, and many of the calculations already made by JET Education Services, could be put to good use in supplementing the findings of the mid-term report from the HSRC's evaluation project. This would not only serve to complement the existing findings, but also as illustration of additional and alternative analyses available when the summative evaluation becomes due in 2004/5.

The most promising comparison would be one showing that national / provincial mean performance (pass rate) increases over time had not been as large as those from the 523 QLP schools. This would allow the larger improvement in learner performance in QLP schools to be attributed generally to the QLP programme interventions.

Purpose and objectives of the supplement report

In summary of the arguments and situation reflected above, the main purpose and nature of this supplement is to reflect further on alternative techniques and possibilities of interpretation with a view to current findings, and in preparation for the summative evaluation.

More specifically, with the findings reported in the main text, an attempt is made to compare the 523 QLP schools with the remainder of schools in a province, and the country as a whole, in terms of a number of selected indicators that could point to the positive effect of the QLP interventions.

Selection and definition of indicators

This brings us to the motivation behind the use of the selected five indicators employed in the analyses. They were primarily selected to reflect more than a single, simplistic notion of

performance improvement, which would together reflect the quantitative, qualitative and efficiency aspects of the improvements in matriculation results.

Conclusion, implications and recommendations

The question that has to be reflected on at this stage is whether or not it is sound and sensible to use the various indicators based on matriculation results as criteria for assessing the impact of the QLP. In addition, we have to establish what light this casts on the mid-term evaluation findings, just released, and the role that these Grade 12 indicators should / could play in the summative evaluation in 2004/5.

In response to the questions just posed, the coherent and meaningful process reflected by the arguments, findings and exercise as such, as just reported up to this point, testifies to its soundness and value. Taken as a simulation run, it definitely proved workable. It leaves no doubt that when this approach is amplified in the 2004/2005 impact evaluation by modelling the complete logic model or causal framework of the QLP programme, including sufficient intervention data, very worthwhile viewpoints and conclusions will be derived.

The current trends of improved performance are quite likely to continue during 2003 and 2004, and it is likely that significant impacts will be made at the levels preceding matriculation too.

Having complementary sets of performance criteria available (Grade 9 and 11, against Grade 12), also allows the validation of the two sets of criterion measures, with the promise of enhancing the design and methodology of the evaluation.

The most likely explanations of the discrepancy between the very encouraging matriculation results, and the absence of observed improvement in Grade 9 and 11 results, suggested by the HSRC evaluation, is that not enough time has elapsed to observe change, and the possibility that the concentration of effort at the level of Grade 12 have not filtered down to the younger grades yet. (Following the modification of the tests used during the mid-term evaluation, on advice of Professor Charles Simkins, we should also be in a position to model any number of causal effects onto learner performance at all the grade levels during the summative evaluation.)