



USAID | **SOUTH AFRICA**
FROM THE AMERICAN PEOPLE

Integrated Education Program

Analysis of the Impact on Pupil
Performance of the District
Development Support Programme
(DDSP)

July 2006

This publication was produced for review by the United States Agency for International Development. It was prepared by Eric Schollar for RTI International.

Integrated Education Program

Analysis of the Impact on Pupil Performance of the District
Development Support Programme (DDSP)

Contract 674-C-00-04-00032-00

Prepared for
United States Agency for International Development

Prepared by Eric Schollar for
RTI International
3040 Cornwallis Road
Post Office Box 12194
Research Triangle Park, NC 27709-2194

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

Forward

The DDSP project achieved approximately a 30% gain in learner achievement over the period 2000 to 2002 (some 10 percentage points over a 35 percent base year score). This project was funded by the U.S. Agency for International Development (USAID) and was implemented in partnership with the national Department of Education of South Africa, and the provincial departments of education of Eastern Cape, KwaZulu-Natal, Limpopo and Northern Cape, as well as DDSP grantees and subcontractors (MSTP, LCD, READ, HSRC, EFT, MiET)¹. The project ended in 2003, and was succeeded by the Integrated Education Program (IEP). The level of learning improvement achieved by DDSP is a rarity in donor projects. Yet the reasons behind this accomplishment had not been documented in a single, succinct source, up to now. With a view to sharing with our South African and international partners, USAID and RTI decided to ask Eric Schollar to go back over the records of the project to see what might be the lessons-learned about the causes of this improvement. In my view the lessons that emerge confirm what much of worldwide literature on schooling improvement is beginning to show: that learner improvement requires a clear statement of learning goals and standards, accountability pressure to get actors to seek those standards, and plenty of support to help the actors (especially teachers) come to standard. Both pressure and support are needed. Education, at least in many cases, does benefit from tight pedagogical management. In poor countries a model that assumes complete professionalism, autonomy, and capacity on the part of teachers is likely not to yield very good results. The analysis carried out by MR. Schollar also shows how, when these forms of both pressure and support are withdrawn, gains are unlikely to be sustained. We hope that these key lessons of DDSP are of use to other actors in other countries, as well as to South Africa itself.

Luis Crouch
Research Vice President
RTI International

¹ Management Systems Training Programme (MSTP), Link Community Development (LCD), Read Educational Trust (READ), Human Sciences Research Council (HSRC), Education Foundation Trust (EFT), and Media in Education Trust (MiET).

Table of Contents

	Page
Forward	iii
List of Tables.....	v
1. Description of the DDSP	1
2. Evaluation of the Impact of the DDSP.....	1
3. Significance of the Impact of the DDSP	2
4. Trends in the DDSP Impact Data	3
5. Causes of Impact in the DDSP Data for the Whole Sample	5
5.1 Review Meeting of February 2002	6
5.2 Distribution of a document providing detailed sequencing of required curriculum topics	6
5.3 Distribution of assessment resource banks and monitoring of their use.....	7
5.4 Distribution of pupil workbooks and monitoring of their use	8
6. Pupil Performance on Different Tasks in the Numeracy Test Instrument.....	9
7. Why was There More Gain in Numeracy than Literacy?	11
8. Why was the Gain in Impact not Sustained over 2003?	12
9. Why was KZN the Only Province that Recorded (Small) Gains in Impact in 2003?	13
10. Why were Gains in Northern Cape so Low?	13
11. Effect of Greater Integration of DoE Officials into DDSP	13
12. Summary of Causes of Impact in DDSP	14
Appendix A. Bibliography	16
Appendix B. Interviews.....	17

List of Tables

	Page
Table One: Gain in mean scores at Grade 3 of the whole sample (%).....	2
Table Two: Gain in mean score of provincial sub-samples (%)	2
Table Three: Effect of a control group on impacts measured in the LFL	3
Table Four: Annual changes in DDSP whole sample data	4
Table Five: Annual changes in provincial sub-sample data	4
Table Six: Numeracy performance by tasks (%)	9
Table Seven: 10 highest gains on the 28 numeracy sub-tasks	10

List of Figures

Figure One: Trends in the DDSP Data.....	4
Figure Two: Trend in the LFL Data.....	5

1. Description of the DDSP

The District Development Support Programme (DDSP), funded by the United States Agency for International Development (USAID), was awarded to RTI International in January 1998. The project was designed by USAID in consultation with the National Department of Education (DoE) in South Africa. Programme implementation commenced in 1998-1999 and was completed by the end of 2003.

A key feature of DDSP was the development of approaches, practices, models, structures, and systems that operationalized key policies in teaching and learning, leadership, management, and governance with a view to replicating them in other schools and districts. DDSP carried out this mission primarily through five grants and two subcontracts. The grantees and subcontractors, selected competitively, delivered work in four target provinces selected by USAID and the DoE as key recipients for this assistance: KwaZulu-Natal, Northern Cape, Eastern Cape, and Limpopo. Fourteen districts and 589 schools (492 with primary sections) were involved in DDSP and were selected by the Provincial Departments of Education based on need.

The overall project objective was to improve the quality of educational delivery for Grades 1 to 9 for schools in the selected districts. There were 4 sub-goals:

- Sub-goal 1 Improved quality of classroom practices
- Sub-goal 2 Improved quality of district and school management
- Sub-goal 3 Enhanced school governance
- Sub-goal 4 Developed theory and best practices for whole school and district development.

The DDSP approach involved district capacity building while putting in place and improving systems and procedures to enable district offices to perform their functions, including curriculum and management support to schools. It was ultimately aimed at producing sustainable improvements in the outcomes of learning.

2. Evaluation of the Impact of the DDSP

The evaluation of the pupil impact of the DDSP education support interventions implemented between 2000 and 2003 was carried out by the Human Sciences Research Council (HSRC)². It was based on annual testing at Grade 3 level using the Mahlale instruments developed by the Joint Education Trust (JET) Education Services. The numeracy test, developed in consultation with the national and provincial departments of education and teacher unions, is a paper-and-pencil test with open-ended questions in four strands of numeracy namely counting and ordering, addition, subtraction and multiplication. The literacy test, a paper-and pencil multiple choice instrument, was adapted from the International Association for Educational

² The HSRC is a parastatal body of the South African state whose mission is, amongst other things, to provide quantitative analysis of social trends and issues. Aside from its allocation from the state, it also performs work under contract for private bodies, funding agencies, etc.

Achievement (IAEA) Survey conducted in 27 countries, and is an assessment of reading ability in word recognition, sentence completion and passage comprehension.

In all, there were 492 schools with primary school sections in the DDSP Project and 459 of them had Grade 3 classes. The baseline (2000) and mid-tests (2001 and 2002) were eventually administered to 40 randomly selected pupils in each of the 453 schools that in the end were used for testing. To reduce costs, the post-tests (2003) were administered in a sample of 77 schools drawn from all of the districts and stratified to reflect relative district sizes; the pupil sample was, again, randomly selected.

Table One: Gain in mean scores at Grade 3 of the whole sample (%)

		Numeracy		Literacy	
			n		n
Baseline	2000	25.84	14 366	52.58	13 828
Mid-Test	2001	26.78	14 174	50.23	14 174
Mid-Test	2002	38.04	13 425	57.22	13 425
Post-Test	2003	37.32	2 434	56.01	2 434
Result	Gain	+11.48		+3.43	

The HSRC is certain that the reduced sample size at post-testing did not affect the outcomes because of the rigour of the sampling procedure they employed. Although there is no systematic statistical evidence to this effect, the consistency of the scores across the sub-populations of the post-test suggests that this conclusion is probably correct.

Table Two: Gain in mean score of provincial sub-samples (%)

	Numeracy	Literacy
E Cape	+9.74	+6.89
KZN	+15.17	+3.04
N Cape	-0.09	+2.56
Limpopo	+13.00	+2.39

3. Significance of the Impact of the DDSP

The design did not include the use of a control group but it is true that the use of repeated measures for a large pupil sample, itself selected from a near-universal sample of schools (in the first 3 years), compensates to some extent. However, it is important to note that the South African education system as a whole has been undergoing extensive transformation since 1994, including the 2000 – 2003 period,

and that the DDSP schools were inevitably part of this process; especially with regard to other departmental initiatives in teacher training, district and circuit rationalization, staffing, provisioning, and so on. In addition, the social context of the majority of our schools is marked generally by very high levels of mobility of both teachers and pupils. Both factors introduce a wide range of potential variable influences upon pupil performance and, while it is not known to what extent either of them affected the DDSP schools, it is interesting to consider the effect of a control group in a national study over a similar period.

The figures in the table below were obtained at Grade 5 level in the evaluation of the national Learning for Living Project (LFL) between 2000 and 2004 (ESA, 2005). Since this study did use a control group, the impacts measured on the project group were controlled for all other variables other than intervention effects.

Table Three: Effect of a control group on impacts measured in the LFL

	Literacy	Numeracy
Project	+11.5	+6.95
Control	+3.85	+4.10
Difference	+7.60	+2.85

The reduction of the gain in the project group for both numeracy and literacy is clear. The theoretical implication is that if the impacts measured in DDSP were similarly controlled, it is possible that the gain in literacy was not significant. On balance, I believe that the numeracy gain in the DDSP *was* significant, if probably a little lower than the obtained +11.48%, but that the gain in literacy was, at best, marginal.

4. Trends in the DDSP Impact Data

The use of repeated measures in the DDSP allows observation of trends in the impact data.

Figure One: Trends in the DDSP Data

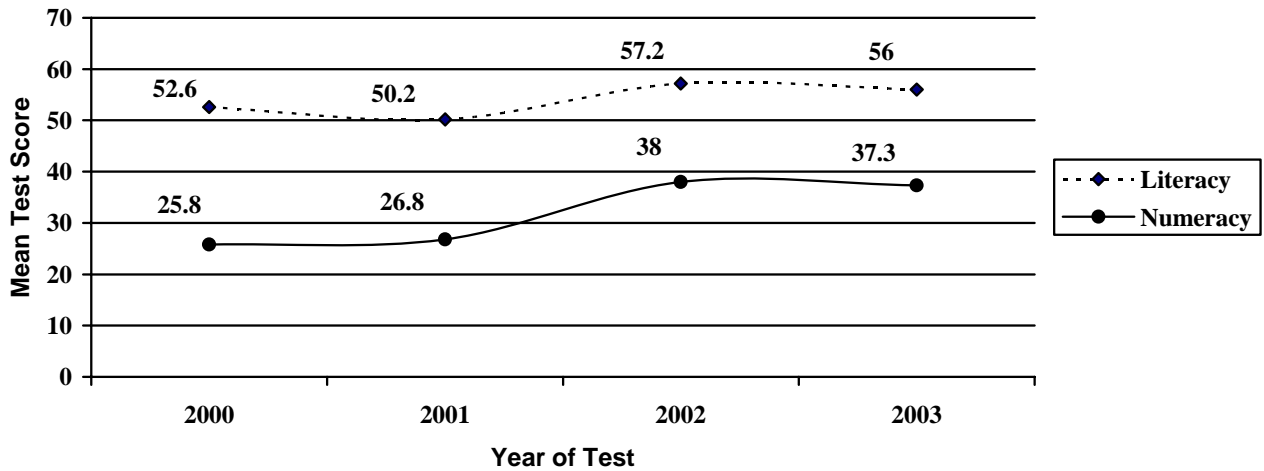


Table Four: Annual changes in DDSP whole sample data

	Literacy	Numeracy
2000-2001	-2.4%	+1.0%
2001-2002	+7.0%	+11.2%
2002-2003	-1.2%	-0.7%

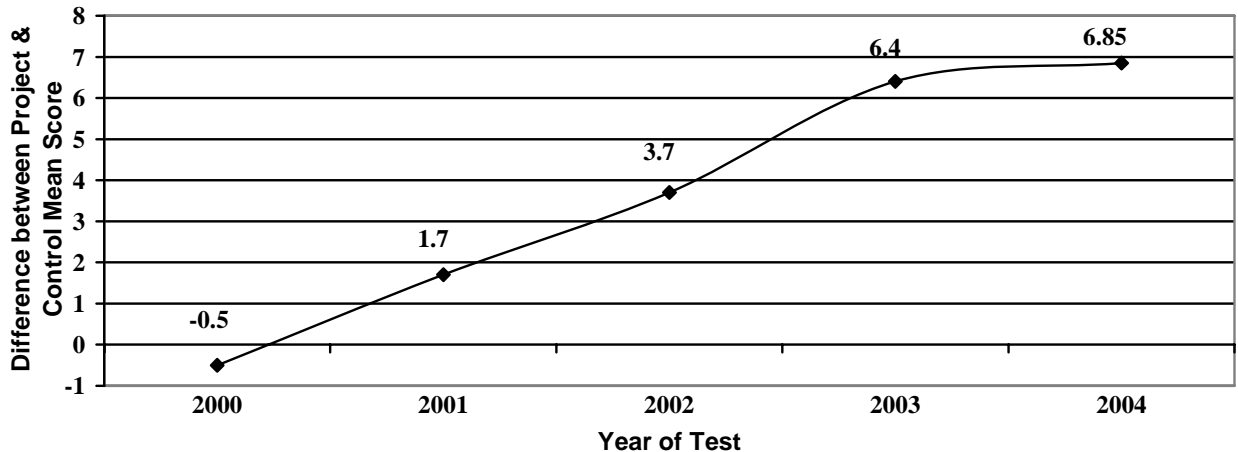
Table Five: Annual changes in provincial sub-sample data

	Numeracy				Literacy			
	EC	KZN	NC	LP	EC	KZN	NC	LP
2000 - 2001	+2.12	-0.35	+1.88	+1.12	-0.87	-4.88	+1.68	-1.91
2001 - 2002	+9.35	+12.68	+8.21	+11.55	+11.18	+5.79	+5.02	+6.19
2002 - 2003	-1.73	+2.84	-10.18	+0.33	-3.42	+2.13	-4.14	-1.89

In my experience of evaluation research in South Africa, these trends are very unusual in impact data. I can accept low growth in the initial phase of project delivery as the intervention is introduced to schools, and as a certain degree of ‘unlearning’ takes place. However, assuming that the project is indeed effective, I would expect a progressive acceleration of impact as intervention effects are cumulatively internalized. Again, low growth in the final phase can be expected as the intervention winds down and its effects reach their limit. What is unusual is for virtually *all* of the growth to occur over one year only.

Once again, I compare the impacts measured (on literacy) in the LFL evaluation to illustrate the point. Note that this data reflects the annual difference between the project and control group (the covariant) and the figures are, consequently, much lower (they do not reflect absolute scores) – the issue at hand is the trend of impact itself.

Figure Two: Trend in the LFL Data



This trend reflects a more ‘normal’ trend of accelerating and cumulative impact; it is spread over the whole period, reaches its peak over the penultimate year of intervention delivery and slows over the last year.

5. Causes of Impact in the DDSP Data for the Whole Sample

The unusual trends in the DDSP data suggest *prima facie* that the primary causes of gain in the impacts measured were not the originally planned strategic intervention inputs at classroom level – in the form of the original programmes delivered by each of the subcontracted independent service providers (ISP) - but rather that some another factor/s, operating over 2002, had the most significant impact on pupil performance, irrespective of the specific ISP programmes. I would, in other words, expect a more cumulative pattern of gain in impact if the gain was due to the effects of the different service providers; *see* the LFL trend, above, where the annual gain in impact was clearly due to the effects of the (single) ISP programme.

A documentary review and interviews with significant project actors in RTI, the DDSP and the independent service providers supports the conclusion that there were four major reasons for the impact measured in the impact data for the whole sample. There were a couple of other factors that had effects in individual provinces and they

will be discussed later but the causes presented below operated across all four provinces.

5.1 Review Meeting of February 2002

As a result of the poor performance of pupils over the 2000 to 2001 period, a review meeting was called by USAID and RTI that made emphatic demands for improved pupil outcomes. While some of the service providers mentioned observable *process* changes in teacher behaviour as evidence of their impact, RTI staff pointed out that these process changes were not in fact leading to *product* impact and made clear that the core outcome indicator of DDSP was improved pupil performance. The meeting led to the allocation of more staff to classroom monitoring and support in 2002. For example, in KZN the DDSP provided for extra staff and transport to allow for a virtual doubling of the support provided to schools by the service providers; and in the Eastern Cape, the ISP itself provided a similar response, providing more staff and classroom support to DDSP schools. Consequently, the demand for improved outcomes by RTI led to improved performance in the form of an increase in ‘dosage’ by both the DDSP and/or the ISP. While the demand for instrumental outcomes may not have been welcome to all of the service providers who saw it as imposing an overly ‘positivist’ element, inimical to their own theoretical principles, on the classroom-level programmes, it clearly did have an effect on their delivery of the intervention.

5.2 Distribution of a document providing detailed sequencing of required curriculum topics

Subsequent to the 2002 meeting, RTI/DDSP circulated a document, based on the analysis of the results of the baseline testing produced by JET Education Services, to all DDSP schools. This document spelled out the problematic topic areas pupils evidenced in the test and, most importantly, provided guidelines of what pupils should know and be taught at each grade level. This resulted in a much more detailed specification of curriculum content and topic sequencing for teachers than would otherwise have been available.

It is interesting to recall a few of the most relevant recommendations made in the JET analysis: “...*the results of the DDSP Baseline Study suggest that the following measures in curriculum management and pedagogy are likely to have the most effects on learner performance:*

- *Specifying clear outcome standards for each Grade in literacy and numeracy. For example: “By the end of Grade 2 learners should be able to add, subtract and multiply two numbers up to 999”. “By the end of Grade 1 learners should be able to read, comprehend and write simple sentences”.*
- *Monitoring and supporting teachers in achieving these outcomes at the end of each respective Grade. Such measures should include regular assessment of learner performance, which is moderated and monitored at school and district levels.*

- *Weaning learners from the use of ‘concrete’ methods in arithmetic during the Foundation Phase, to methods which utilise a flexible understanding of the number system as the foundation for all higher order problem solving skills in mathematics.” (pg. 32)*

It should be noted that the apartheid-era curriculum was accompanied by minutely detailed work schedules providing a prescriptive sequence of specific topics to be taught per day/week and was accompanied by a single text book based on the same sequence; a number of the DDSP teachers were trained and taught during this era and were, consequently, accustomed to the practice. However, the curriculum used in schools over the DDSP period (Curriculum 2005 or C2005) provided very little similar specific topic guidance of this nature to schools and encouraged the use of a wide variety of different textbooks and other materials.

Although we have no information to indicate which DDSP teachers were/were not from the previous system, it is logical to speculate that those who had taught in a very structured fashion in the past responded quickly when they were again provided with a degree of structure. In fact, it is probably also logical to speculate that teachers trained in the post-apartheid era *also* responded to having this structure. Our recent and current experience is that most South African teachers still do not have a detailed daily or weekly schedule for implementing the whole curriculum and researchers, consequently, frequently comment that the curriculum is seldom completed in full in the majority of our schools³.

Increased curriculum structure in the DDSP, besides providing more guidance to teachers, also allowed more effective monitoring of curriculum coverage by the service providers. The implication is that the same should be true of routine monitoring by departmental officials in the current environment, although teachers continue to resist ‘prescriptive’ pressure despite the introduction of the Revised National Curriculum Statement that provides a greater level of curriculum specification than did C2005.

5.3 Distribution of assessment resource banks and monitoring of their use

Assessment Resource Banks (ARB), produced by the HSRC as part of the overall DDSP strategic design, were introduced to schools in 2002 and provided a clear set of specific items embodying concrete required pupil outcomes. This, again, provided teachers with a much more detailed specification of required curriculum content. Further, and importantly, the implementation of the ARB was accompanied by classroom monitoring in their use by HSRC staff.

³ The problem is compounded by the policy of virtually automatic progression and the absence of common testing at primary level; the recent National Systemic Evaluation shows that the vast majority of Grade 3 and 6 pupils are nowhere near their respective expected standards.

5.4 Distribution of pupil workbooks and monitoring of their use

Three of the service providers developed classroom workbooks for pupils, based on the ARB and including some of the specific test items provided in both the HSRC evaluation report and the JET document. These workbooks provided direct practice of both the format of the test and the types of topics/items that were included in the impact tests. This, again, provided a greater level of curriculum specification and, it should be said, a degree a pre-preparation for success in the test – i.e. teaching-to-the-test. The use of these workbooks was also accompanied by classroom monitoring by ISP staff.

Finally, it should be noted that these workbooks required pupils complete many more exercises in the various topics with which they dealt than was/is usual in South African schools at the time; this provided far more extensive daily and weekly practice in solving problems to pupils than normal. Many recent research reports comment on how little classroom practice pupils do in classrooms, chiefly because of the prevalence of ‘constructivist’ and ‘discovery’ methods, combined with group work, in our schools.

Examples of Evaluation Test Items, ISP Workbooks and HSRC ARB

Since it is suggested that the increased level of curriculum topic sequencing, structure and concrete detail was the primary cause of pupil impact over 2002, a few examples of items from the test instrument, the ISP workbooks and the HSRC assessment resource banks are reproduced below. It should be remembered that both the workbooks and the ARB provided hundreds of items for classroom use whereas only a very few are reproduced below. Nonetheless it should be evident that all three sources provided closely related items and that the workbooks combined with the ARB were mutually reinforcing in providing practice in dealing with the test.

It should also be noted that a number of the workbook items were the same as, or very similar to, items in the test instrument; if only a couple of these items were remembered by children across the sample, we could expect an increase in performance on the test. Finally, since the same test instrument was used annually without a non-treatment group to control for both teachers and pupils remembering specific items, it is possible that a certain amount of the eventual overall gain could be ascribed to either of these factors.

Since the impact in numeracy was much higher than literacy, the items reproduced are for this subject only:

Counting and Ordering

Test instrument	Count forward in 2s and fill in the missing number: 34 36 38 ____
ISP workbook	Count forwards in 2s: Fill in the missing numbers: 38 ____ ____ 44 46 48
HSRC ARB	Count forwards in 3s and fill in the missing numbers: 18 21 24 ____ ____

AdditionTest instrument $34 + 8 =$ ISP workbook $28 + 6 =$ HSRC ARB $76 + 7 =$ **Subtraction**Test instrument $28 - 7 =$ ISP workbook $77 - 6 =$ HSRC ARB $48 - 6 =$ **Multiplication**Test instrument $10 \times 6 =$ ISP workbook $6 \times 10 =$ HSRC ARB $7 \times 5 =$ **Word Sums**

Test instrument Nomsa has 8 bags of 10 oranges each. How many oranges are there altogether?

ISP workbook 6 piles of stones with 10 stones in each pile make ____ stones altogether.

HSRC ARB 1 worm eats 8 leaves each day. 15 worms eat ____ leaves each day.

6. Pupil Performance on Different Tasks in the Numeracy Test Instrument.

The numeracy test consists of four tasks; counting and ordering, addition, subtraction and multiplication, each with between 26 and 30 items. These items are both ‘straight’ arithmetic problems and word or application problems.

Table Six: Numeracy performance by tasks (%)

	2000	2003	Gain
Task I: Counting and Ordering	16.16	30.09	+13.93
Task II: Addition	34.17	46.62	+12.45
Task III: Subtraction	28.78	38.64	+9.86
Task IV: Multiplication	24.13	33.52	+9.39

The HSRC report (2003) cautions that: "... *these difference scores should be treated with circumspection. It cannot simply be assumed that an increase of, say, 9% in multiplication is equal to an increase of 9% in subtraction, as the questions in the two tasks may not be distributed similarly as regards difficulty. Although experts tried to make the two tasks relevant to the curriculum and of comparable difficulty, the difficulty of the questions was never empirically investigated before the administration.*" (pg.23).

Consequently, it is difficult to say with any certainty that the gains recorded for Tasks I and II are any more significant than those recorded for the other two tasks. However, the report does provide an analysis of performance on the different sub-tasks into which the four main tasks were divided. The median gain for the 28 sub-tasks was 11.5%.

Table Seven: 10 highest gains on the 28 numeracy sub-tasks

Task	Sub-task	Problem	2000	2004	Gain
Counting & ordering	number line	identify no. 12 on line with 9 to 11 and 16 already labelled	29	56	+27
Counting & ordering	skip forward by 2: <100	34 36 38 ?	48	72	+24
Counting & ordering	skip backward by 10: <100	80 ? 60	38	62	+24
Counting & ordering	skip forward by 50: >100	250 300 ? ?	11	32	+21
Addition	>100, carrying, no context	50 + 60 = ?	19	37	+18
Counting & ordering	skip backward by 100: >100	570 470 370 ?	8	25	+17
Subtraction	>100, no carrying, no context	115 – 15 = ?	24	40	+16
Multiplication	no context	10 x 6 = ?	43	59	+16
Addition	>100, carrying, no context	240 + 60 = ?	14	29	+15
Multiplication	no context	2 x 9 = ?	46	61	+15

It is evident that 3 of the 4 highest gains are for skip counting and all 4 of these sub tasks are in the 'top ten'. It can be argued plausibly that the ability to skip count is fundamental to learning multiplication but this does not find a great deal of empirical support here; only 2 of the 6 multiplication sub-tasks improved significantly (i.e. were in the 'top ten') while 3 of them recorded gains below the median.

Furthermore, both of the problems with the highest gains were the simplest of the 6 multiplication sub tasks and the HSRC report comments that the majority of children attempted to solve all multiplication problems by reducing them to repeated additions (i.e. $10 \times 6 = 10$ added to itself 6 times). While this could be interpreted to imply that skip counting makes repeated addition easier, throughout the study pupils found addition and subtraction the easiest problems to solve because of the near universal

practice of using simple counting of unit markings ('sticks') to arrive at answers. Consequently, it is likely that multiplication problems were reduced first to repeated additions and then to counting of units (i.e. $2 \times 9 = \text{II} + \text{II} + \text{II} + \text{II} + \text{II} + \text{II} + \text{II} + \text{II} + \text{II}$) and that the higher the numbers involved (i.e. the higher the number of 'sticks' that must be tallied), the less likely that the correct solution would be counted.⁴

The most important implication of this is that children must get beyond counting (of units or of skip counting) and into true calculating. As long as pupils try to solve problems by counting, they will not be capable of developing higher-order proficiency in mathematics. Once pupils conceptually understand that multiplication is actually repeated addition, they should master the times tables and place value (i.e. carrying and borrowing) and stop using counting of any kind. Certainly, we are talking of Grade 3 pupils with regard to the DDSPP, but even by that grade they should simply know that, for example, $6 \times 10 = 60$ without the need to use $6+6+6+6+6\dots$ or, even worse, $\text{IIIIII} + \text{IIIIII} + \text{IIIIII} \dots$ and so on. To illustrate further, the RNCS indicates that pupils should be able to multiply a 2 digit number by a 1 digit number in Grade 3; it is difficult to imagine how they could solve, to use an admittedly extreme example, 99×9 by either unit or skip counting.

7. Why was There More Gain in Numeracy than Literacy?

There appear to be two linked reasons, one generic and one specific to the DDSPP, why the impact achieved in numeracy was so much higher than that achieved in literacy.

In general terms, numeracy is inherently more amenable to detailed topic sequencing and the provision to teachers and pupils of very specific and concrete types of items to be practiced. It is, in other words, also very much easier to teach-to-the-test in numeracy. While it is true that the literacy curriculum also needs much greater specification in terms of outcome competencies toward which to teach, it's much harder to get results quickly in literacy than numeracy - in terms of how the DDSPP did it. In the long-run, literacy needs systemic and coordinated curriculum *and* materials planning at a high level; for example, specify the vocabulary level required for Grade 3 and make sure readers, texts, assessments, etc. all work with the same list. At present we have nothing of this kind in South Africa. In essence, we can specify how much and what children should be able to write, and so on, but the process is more complex and does take longer than, for example, memorizing and drilling/practicing the 3 times table, before one can expect real gains in competence for second language learners⁵.

⁴ This argument is supported by the findings of the Primary Mathematics Research Project (ESA, 2004) which revealed that unit counting only is used in 50% of all problems pupils try to solve at Grade 5 and 27.4% at Grade 7 level.

⁵ At present, I think it is not completely unreasonable to say that the vast majority of children at Grade 4 level, in which English is used as the medium of instruction, cannot understand more than a tiny fraction of the content of the textbooks that are used in classrooms, all of which are in English. Teachers pragmatically spend

More specifically, both of the main DDSP numeracy service providers (COUNT and MCPT) were able to provide very detailed classroom workbooks for pupil practice in all four provinces whereas only one of the two main literacy service providers (READ) was able to do so. This ISP operated in only one of the provinces (Eastern Cape) and it will be noted in the next section that it was in this province that the highest gain for literacy was obtained. READ was able to do this because it could be fitted with the theoretical programme approach they used; all they had to do was substitute the DDSP-specific workbook for those they normally used for pupils. On the other hand, the other service provider (MOLTENO) is necessarily committed to the use of their own classroom material because it so clearly embodies their theoretical approach.

The whole sample gain for literacy was, therefore, lower than that recorded for numeracy but was higher in the one province (Eastern Cape) where READ operated than in the other three (KZN, Limpopo and Northern Cape). I believe that this clearly suggests the value of the workbooks, and the extended pupil practice they made possible, in achieving impact upon the achievement levels of pupils in the DDSP.

8. Why was the Gain in Impact not Sustained over 2003?

The delivery of the DDSP to schools by the service providers ceased at the end of 2002 and, consequently, intervention effects were diminished over this year (The DDSP focussed on the District-level over 2003.) In-service teacher training and classroom monitoring was complete, the workbooks provided by the service providers were completed in 2002 *and* the HSRC did not provide support to teachers in the use of ARB in 2003. Grade 3 pupils, therefore, did not receive the same level of practice in dealing with generic and specific test topics or items in 2003 as had their counterparts who were tested in 2002. All of this illustrates a common experience of evaluation research in SA; teachers generally assume projects and programmes have 'ended' when school-level support is completed.

The clear implication is that intervention effects must be sustained by local departmental officials if systemic change is to be achieved and sustained after the withdrawal of the service providers. In the DDSP, besides a couple of exceptions discussed below, local-level department staff did not 'internalize' the programme to the degree intended by the strategic design of the project and were unable to provide the same level of monitoring and support provided by the service providers over 2003. Finally, it must be said that it was not only a matter of their ability to do so but also one of willingness; in general, once the project stopped going to schools the District officials also stopped doing so.

most of their time on verbal ability because children have to, at least, understand the language in which they will be (verbally) taught.

9. Why was KZN the Only Province that Recorded (Small) Gains in Impact in 2003?

After the withdrawal of the independent service providers from schools at the end of 2002, DDSP staff (who remained operative after this date) in KZN produced their own pupil workbooks and a common test, based on the performance of pupils on the evaluation instrument, in both subjects for this province over 2003 – the only one to do so. Consequently, the intervention effect of practice by children of generic and specific test topics or items was maintained, to some degree, over the year in this province. Both workbooks and tests were introduced to schools by trained key teachers.

Further, district officials in this province were involved in monitoring the administration of the common test and required the submission of completed pupil mark sheets to DoE offices. This clearly illustrates to some extent the comments on accountability pressure and sustainability made above.

10. Why were Gains in Northern Cape so Low?

There were relatively fewer schools in the DDSP in this province and, consequently, any contextual changes produced large effects on scores in the sub-sample. There were two major linked changes in this regard. School districts were reorganized over the life of the DDSP and, consequently, some schools previously in the DDSP were allocated to non-DDSP districts, and *vice versa*. Secondly, demographic changes as a result of district reorganization meant that the home language of the majority of pupils in some DDSP schools changed from Afrikaans to Tswana, and *vice versa*, between baseline and final testing. However, final tests were administered in the same language as that used at baseline.

11. Effect of Greater Integration of DoE Officials into DDSP

This issue has been mentioned twice already because I think it is so important to the eventual long-term impact of educational interventions in this country. Research produced for a unpublished doctoral thesis by Brian Chinsamy, using DDSP data, indicated that individual circuits in which DoE officials, and especially circuit managers, became more involved with the delivery and monitoring of the DDSP produced somewhat better results than those in which such integration did not take place. Essentially, this greater involvement resulted in both more classroom-level contact and monitoring as well as a greater level of demand for accountability from schools and teachers in the relevant circuits. The defining difference between circuits appeared to be the greater degree of willingness to become involved on the part of the respective individual managers.

For practices like those promoted by the DDSP, and which led to improvements in 2002, to be sustained, there has to be some form of sustained accountability pressure.

The DDSP increased both the accountability pressure on teachers and the means for discharging that pressure (specific curriculum, workbooks, ARB and sustained classroom monitoring). After the accountability pressure was removed, there was no accountability pressure from the system itself – besides a few exceptions that prove the rule - and the practices, along with a continuing gain in pupil impact, started to decline.

12. Summary of Causes of Impact in DDSP

In my opinion, the greatly increased level of specification and sequencing of curriculum content for teachers, along with the associated greatly increased level of pupil practice in handling generic test topics and concrete test items, are the central causes of the impact obtained in the DDSP. The RTI/DDSP document spelling out the curriculum, the workbooks produced by the service providers and the assessment resource banks all contributed significantly to this effect. This level of detail and practice was not generally available to teachers in the school system at the time of the DDSP, though the current Revised National Curriculum Statement has improved the current situation in this regard.

Further, the demand for performance in producing instrumental outcomes from service providers and DDSP staff made by USAID and RTI also resulted in an increased level of classroom-level monitoring and support. This, in turn, increased the effects of curriculum specification and test practice by ensuring that the various documents and tools were, in fact, *used* in classrooms by teachers. This factor can really be summed up in the concept of accountability; of service providers to the DDSP and of teachers to the service providers. The argument is strengthened by the improved performance of pupils in the few circuits in which departmental officials became more involved with the DDSP. There is little doubt, in my opinion, that there is generally far too low a level of accountability for the effective and sustained application of educational innovations and interventions at district, circuit, school and classroom levels in South Africa.

It is also probable that the much greater number of exercises/practice routinely done by pupils in classrooms, as a result of the workbooks and the assessment resource banks (and the monitoring of their use), also contributed to improved pupil learning. Drill and practice *is* important to learning and children in DDSP schools did more of both of as a result of the DDSP. It might also be mentioned that it is probable both teachers and children had to do more work as a result of the materials and monitoring! The two factors are mutually reinforcing.

Finally, the example of the Northern Cape indicates that the delivery of interventions must be coordinated with changes in departmental policy. Schools in intervention districts/circuits should remain in them, and their pupil demographics should remain stable; moving schools, teachers and pupils in and out of the programme must, inevitably, reduce its effects.

On the other hand, little can be done about the high levels of teacher and pupil mobility in the majority of our schools. The most immediate implication for

evaluation research in South Africa is that impact measurement is best carried out through the longitudinal tracking of 'true' cohorts, all of which have been exposed to the full range of intervention inputs.

One final implication that can be drawn from the DDSP is that, in circumstances where departmental officials cannot be relied upon to 'internalize' and implement programme inputs after the withdrawal of service providers, pupil impact is most likely to be achieved by an intervention based primarily on the school/classroom-level. The long-term sustainability of impacts achieved in this way is another matter altogether.

Appendix A. Bibliography

1. Report on DDSP Grade 3 Learner Assessment 2003. Human Sciences Research Council, December 2003
2. Report on DDSP Grade 3 Learner Assessment Baseline Study. Joint Education Trust and RTI, undated
3. DDSP Schools Performance Research Project: Research Report. Paul Musker for the Centre for Education Policy Development, Evaluation and Management (CEPD), 4 June 2002
4. District Development Support Project: Final Project Report to USAID. RTI, 30 March 2004
5. DDSP: Improving the Quality of Primary Education. Book produced by DDSP/RTI, January 2003
6. Improving Learning and Learning Achievement in Under Resourced South African Schools: A Study of the Education District in Sustaining School Impact in South Africa. Brian Chinsamy, Unpublished Doctoral Thesis, 2003
7. Doubling the Output of Higher Grade Mathematics Matriculants in Public Schools: A Framework. Nick Taylor for the Centre for Development and Enterprise, October 2005
8. Four Final Project Reports for the DDSP from all of the provincial lead agencies, end-2002. Source: RTI
9. Final Report of the Evaluation of the Learning for Living Project. Eric Schollar and Associates, February 2005
10. Report of the Primary Mathematics Research Project: An Empirical Investigation into the Outcomes of Mathematics Education in South African Primary Schools. Eric Schollar and Associates, November, 2004)

Appendix B. Interviews

1. Richard Cartier RTI/DDSP
2. Anil Khanjee HSRC
3. Penny Smith COUNT
4. Nick Taylor JET Education Services
5. Saeeda Anis DDSP, currently JET Education Services
6. Masennya Dikotla DDSP, currently MOLTENO
7. Deva Govender DDSP, currently IEP
8. Paula Gains MOLTENO
9. Bertus Mathee READ
10. Roy Valentine READ, currently LINK
11. Brian Chinsamy DDSP
12. *Sibuso Sithole USAID, currently DoE (No formal interview – Mr. Sithole attended a presentation of the findings of this analysis and indicated agreement with the findings)*
13. *Penny Vinjevold JET, currently DoE (No formal interview – I discussed the findings briefly with Ms Vinjevold and she indicated agreement with the findings)*