

PNG

Curriculum Reform Implementation Project

CRIP Impact Study 1

EXECUTIVE SUMMARY

Draft Mid Term Review Report

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1 Introduction

The Purpose of Impact Study 1

The purpose of Impact Study 1 is to investigate the impact of the curriculum reform on student learning outcomes and teacher practice. This five-year longitudinal study seeks answers to the following research questions:

First Order Issues

- (i) To what extent has the implementation of the reform curriculum in primary and elementary schools resulted in improvements in student participation in schooling, attitudes to schooling and student learning outcomes – knowledge, skills and understandings with particular focus on literacy and numeracy?
- (ii) What has been the impact of vernacular education in elementary school on student learning, in particular literacy and numeracy, in primary school?
- (iii) To what extent has access to curriculum materials and related teacher inservice affected the impact of curriculum reform?

Second Order Issues

- (iv) To what extent has the implementation of the reform curriculum led to changes in teaching, learning and student assessment practices?
- (v) To what extent do communities perceive the reform curriculum to be more culturally relevant?
- (vi) Has the implementation of the reform curriculum changed community expectations of and attitudes to elementary and primary education?

First order issues provide the major focus for the study. The second order issues were expected to provide initial data which might be used to inform separate studies.

The study commenced in September 2001. Seven milestone reports have so far been submitted, of which the latter five were Six Monthly Reports. Each of these reported on the achievements of the previous six months.

The Purpose of the Mid Term Review Report

The purpose of the Mid Term Review Report is to consolidate the findings of the previous reports and review the course of Impact Study 1 as a whole to date, in light of the First and Second Order Questions. The Report is organised so as to discuss each of the research questions in turn in a separate section.

There are two exceptions to this. Firstly, that the first research question is split into two parts:

- To what extent has the implementation of the reform curriculum in primary and elementary schools resulted in improvements in student participation in schooling and attitudes to schooling? and
- To what extent has the implementation of the reform curriculum in primary and elementary schools resulted in improvements in student learning outcomes –

knowledge, skills and understandings with particular focus on literacy and numeracy?

And secondly, Section 8 contains a review of the case studies to date, both individually and collectively. The final section contains some interim conclusions and recommendations from the study to date.

This Executive Summary will confine itself to a summary introduction; the main findings in relation to each research question; the interim conclusions and recommendations.

2 Design of Impact Study 1

The initial concept for the design of the study envisaged that a comparison could be made of the outcomes and practices in reform schools and pre-reform schools. The qualitative component was to include at least ten case studies in rural and urban schools in at least five selected provinces. The quantitative component was to include the collection of student learning outcomes data in literacy and numeracy from a national sample of students in lower and upper primary grades using existing data collected by various Department of Education (DOE) units.

Definition of the Reform Curriculum

Unless otherwise stated, the term ‘reform curriculum’ refers to the specifically targeted material and support that is provided by the Curriculum Reform Implementation Project (CRIP). These materials were distributed in two phases:

- September 2002: Lower Primary Units 1 – 3;
- October 2003: Lower Primary Units 4 and 5, and Upper Primary Units 1 – 3.¹

However, as early as 1994 curriculum materials were piloted by DOE with a number of schools in various parts of Papua New Guinea (PNG). Two of these schools were selected for inclusion in the case study sites for this Impact Study, as example of ‘early reform’ schools. Elementary education is treated by definition as a ‘reform’ activity.

Although the Impact Study has been in progress for over two and a half years, the impact of Lower Primary Units 4 and 5, and Upper Primary Units 1 – 3 has not yet been possible to assess. The November 2004 assessments in case study schools will provide the first opportunity to do this. This means that the findings presented in this report are still essentially reporting on baseline conditions.

For the first time we can however report on literacy and numeracy assessments made one year apart, reflecting changes that have occurred since November 2002. These changes could be taken to reflect the impact of the distribution of Lower Primary Units 1 – 3 in September 2002. The 7th Six Monthly Report in early 2005 will provide the first opportunity to report more fully on the impact of the reform curriculum.

¹ The distribution of these materials to some of the more remote schools was scheduled to take place in February 2004. At the time of preparation of this report, it was not confirmed whether this had actually occurred.

Selection of Case Study Sites

The selection of case study sites was critical for the qualitative component of the study. The initial selection was made, on advice from DOE personnel, in order to reflect a distinction between reform schools and pre-reform school. Each site comprised one primary school and one elementary school which fed into that primary school. The only exceptions were three community schools, which were included as 'pre-reform' schools. The initial sample of ten sites was considered and approved by the Steering Group in November 2001, subject to the addition of two more sites which were considered to be disadvantaged. The resulting sample of twelve sites is contained in Annex 2. The names of the schools have been replaced by pseudonyms so as to conceal their identity for reasons of confidentiality.

During implementation of the study it became apparent that the distinction between reform schools and pre-reform schools was untenable. Essentially all schools were found to be either reform or in a state of transition to reform. This was reported to the Steering Group, and it was agreed that instead of comparing schools, classes of students should be compared ('cohort classes').

It was agreed that cohort classes would be classified as:

- 1 Those who entered Grade 1 without attending elementary education; or*
- 2 Those who started in elementary schools before the reform curriculum material was introduced and available; or*
- 3 Those who started in elementary schools when or since the reform curriculum material was introduced and available.*

In this report, the terms 'Reform Status 1', Reform Status 2 and 'Reform Status 3' will be used to denote this classification when applied to cohort classes. In particular, 'Reform Status 1' denotes 'pre-reform'.

A consequence of this decision was a substantial increase in the complexity of the design: instead of 12 case studies there were now three times that number of cases.

Instruments for Assessing Student Learning Outcomes

During the initial consultations it became apparent that there were no suitable instruments for assessing student learning outcomes, and that a new Curriculum Standards Monitoring Test instrument was not likely to become available for several years. The study team therefore developed its own instruments for assessing literacy and numeracy.

Selection of Sample Classes

Three cohorts within each of the case study sites were selected for assessment progressively in November 2002, 2003 and 2004: Elementary Prep (EP), Primary Grade 3 (G3) and Primary Grade 5 (G5). A pilot assessment was undertaken in November 2001 in the original ten sites, and some adjustments were made, including replacing EP with Elementary Grade 1 (E1).

In this report the selected classes in each school are described as the ‘cohort classes.’ Reflecting the progression of the cohort classes over a 3 year period, in this report they are denoted:

- E1/G3;
- G3/G5; and
- G5/G7.

When the cohort is referred to as a class in a specific year, it is denoted as a class, eg. E1, E2, G3, G4 and so on.

3 Participation in Schooling and Attitudes to Schooling

This section addresses the following research question ‘To what extent has the implementation of the reform curriculum in primary and elementary schools resulted in improvements in student participation in schooling and attitudes to schooling?’ This question forms part of First Order Question No. 1.

The discussion on student participation in schooling is taken directly from the 5th Six Monthly Report, which forms Volume 2 to the Mid Term Review Report.

The main findings may be summarised as:

- That although enrolments declined overall in the sample schools between Terms 1 and 3 in all three cohorts, attendance rates improved with successive levels of education, particularly that of girls. It appears to be more difficult for girls to attend elementary schools compared to primary schools (this finding is the opposite of what would be expected). There were wide variations between sites;
- Amongst primary school children, pre-reform students demonstrated higher attendance rates than others;
- Much of the non-attendance or early leaving was attributable to unavoidable factors such as illness or parental mobility. However, non-payment of school fees emerged as one of the avoidable factors;
- Students on the whole enjoyed going to school, particularly elementary students. Language work was generally considered enjoyable. Matters relating to discipline, or lack of it, generated less favourable comment by children;
- The types of careers to which children generally aspired did not match well with what they could reasonably expect. Ultimately this mismatch could lead to dissatisfaction amongst children and parents. There was no indication from these data that the reform was leading to a better appreciation of education for the purpose of rural life.

There could be value in future analyses in distinguishing focus groups by rural compared to urban schools.

4 Student Learning Outcomes in Literacy and Numeracy

This section addresses the following research question ‘To what extent has the implementation of the reform curriculum in primary and elementary schools resulted in improvements in student learning outcomes – knowledge, skills and understandings with particular focus on literacy and numeracy? This question forms part of First Order Question No. 1. It relies on the analysis of quantitative data from the mathematics and language assessments undertaken in November 2002 and November 2003.

Two distinct forms of analysis have been made:

- A detailed analysis of the literacy and numeracy data collected in November 2003;
- A comparison of the literacy and numeracy data collected in November 2003 with that collected in November 2002.

The former has been reported fully in the 5th Sixth Monthly Report (Volume 2 to the Mid Term Review Report); the latter in the Mid Term Review Report (Volume 1) itself. Three types of analyses of performance in literacy and numeracy are discussed: by gender; by reform status; and by rural/urban status. Performance by language background is discussed in the subsequent section. The technical discussion of the methods and results of statistical tests is omitted from this Executive Summary.

Literacy and numeracy data collected in November 2003

The 5th Six Monthly Report (see Volume 2 to this report) contains a detailed analysis of the literacy and numeracy data collected in November 2003.

The main findings of that analysis are summarised as follows:

- Males, on average, achieved slightly higher scores than females in both mathematics and language assessments in each of E2, G4 and G6. The differences, however, were not found to be statistically significant;
- Both G4 and G6 who received an elementary education performed better, on average, in both mathematics and language assessments than those who had not (i.e. the pre-reform students). The differences were found to be statistically significant, particularly at the G6 level. This finding was consistent with the objectives of the Reform. It lends strength to the hypothesis that students who receive an extra year of elementary education perform better than those who have not (5th Six Monthly Report, pp. 25-26);
- Urban students were clearly advantaged over rural students in both mathematics and language, except in the case of the elementary students, where rural students had an advantage in language.

Comparison of the literacy and numeracy data collected in November 2003 with that collected in November 2002

The postponement of the Mid Term Review from September 2003 has afforded an opportunity, not previously available, to report on the progress of the three cohort classes since November 2002. For the first time initial time series data are available. In early 2005 time series data for three years will be available, and an examination of trends will be possible.

Two main types of measure were used in the analysis:

- a comparison of average performances; and
- measures of value added since November 2002.

To undertake this comparison it was necessary to adjust the 2002 sample. A baseline sample of 881 students was drawn from E1, G3 and G5 and surveyed in November 2002. According to the study's design, the same individual students were to be surveyed in November 2002, 2003 and 2004. In November 2003 the research team attempted to locate the same students and administer the assessment instruments to them. There was an overall loss of 39 percent of the sample between those who completed the baseline assessment and those who completed the second assessment. The loss was greatest amongst the elementary students, at 46 percent. In a cohort study, some loss is to be expected and is inevitable. Most of this loss is to be explained in terms of the movement of students between locations and between schools, and the non-payment of school fees (see Table 3.1, Appendix 3).

For comparison of performance since November 2002, it was decided to include only those students who had completed both the language and mathematics assessments in both 2002 and 2003.

The main findings of that analysis are summarised as follows:

- overall, the performance of G3/G5 and G5/G7 students significantly improved between 2002 and 2003, in line with expectations;
- generalisations can be made with some confidence from the experience of the G3/G5 cohort; with somewhat less confidence from that of the G5/G7 cohort;
- any conclusions about the performance of the E1/G3 cohort should be avoided because the way the instruments were administered to elementary students in 2002 was different from the way they were administered in 2003. However when a new cohort of E1 students is assessed using current assessment procedures in November 2004, a new set of data will become available to represent the E1 population which might enable a valid comparison.

G3/G5:

- male G3/G5 students derived more benefit than female students in both literacy and numeracy;
- pre-reform students in G3/G5 derived more benefit than students that had experienced a year of elementary education and partially closed the gap between their performance and that of the other group;

- urban G3/G5 students benefited more in numeracy, and rural students more in literacy, although the urban students performed better in absolute terms than the rural students in both learning outcomes.

G5/G7:

- male students in G5/G7 performed better in absolute terms in the mathematics assessment than female students, but that female students benefited more, moving towards closing the gap;
- female G5/G7 students performed better in absolute terms in the language assessment, whereas male students benefited more, moving towards closing the gap;
- students in G5/G7 that had experienced a year of elementary education benefited more than pre-reform students in both numeracy and literacy, performing better in both assessments in 2003;
- urban G5/G7 students performed better than rural students in both assessments, and derived more benefit from an additional year of schooling in terms of both literacy and numeracy outcomes.

The findings for the G5/G7 cohort are generally fairly consistent with those for the G3/G5 cohort.

At the time of this Mid Term Review Report, it is not possible to determine to what extent has the implementation of the reform curriculum in primary and elementary schools resulted in improvements in student learning outcomes – knowledge, skills and understandings with particular focus on literacy and numeracy. The November 2004 and any subsequent annual assessments should demonstrate this impact.

The impact is likely to be experienced differentially by male and female students, by pre-reform and reform students, and by students with differing linguistic backgrounds. Unless measures are taken to address the imbalance, it seems likely that the advantage of urban students compared to rural students is likely to be perpetuated or exaggerated, regardless of the introduction of the reform curriculum.

4 Impact of Vernacular Education

This section addresses the following research question: ‘What has been the impact of vernacular education in elementary school on student learning, in particular literacy and numeracy, in primary school?’ (First Order Question No. 2).

Literacy and Numeracy Assessments 2002 and 2003

The 5th Six Monthly Report (see Volume 2 to this report) contains a detailed analysis of the literacy and numeracy data collected in November 2003.

The following main findings with respect to language background in that report are:

- E2 students who had a vernacular experience in E1 performed better on average in both mathematics and language assessments than those who had a Tok Pisin experience, although the differences were not found to be statistically significant. This finding was consistent with the objectives of the Reform;

- G4 students who had an English and Tok Pisin experience in G3 performed, on average, better in both mathematics and language assessments than those with an English and Vernacular experience. The difference was statistically significant in mathematics. This finding suggests that the transition to English in lower primary may be easier if supported by Tok Pisin as compared to Tok Ples, particularly for the acquisition of numeracy. It may also reflect a lack of vernacular texts in lower primary;
- G6 students with an English and Tok Pisin experience in G5 performed better in both mathematics and language assessments than those with an English only experience, with the difference being statistically significant in mathematics. This finding suggests that supporting English with Tok Pisin in Grade 5 assists learning and performance in Grade 6, particularly in mathematics. It may imply that Tok Pisin is helpful in bridging to English in lower primary.

Performance by Language Status 2003 Compared to 2002

The progress in mathematics and language of students is examined in terms of the language group used in their class in 2002.

The main findings are summarised as follows:

G3/G5 students with an English and Tok Pisin background in G3 benefited more than those with an English and Vernacular background in numeracy, whereas those with an English and Vernacular background benefited more in literacy, as measured by the assessment instruments used for this study. This suggests a trade-off between literacy and numeracy in terms of language background.

G5/G7 Students with an English and Tok Pisin experience in G5 performed better in both assessments in 2003 than those with a 100% English experience. Those with a 100% English experience improved at a faster rate in numeracy, however, than those with an English and Tok Pisin experience, while the converse was true in literacy. As in the case of the G3/G5 cohort, this finding suggests a trade-off between literacy and numeracy in terms of language background. The findings for the G5/G7 cohort are generally fairly consistent with those for the G3/G5 cohort.

Impact of Vernacular Education on 'Cultural Literacy'

The impact on 'cultural literacy' of vernacular education (as part of the reform curriculum) is not stated explicitly as one of the First or Second Order issues to be addressed by this Impact Study. Nevertheless it is implicit in Second Order issue No. 5: 'To what extent do communities perceive the reform curriculum to be more culturally relevant?'

The issue of cultural literacy was identified by the Vernacular Education Specialist (VES) during the first of her two inputs in November 2002. The VES noted that the contribution of vernacular literacy as a form of cultural expression was, for example, not captured by the study's assessment instruments. In her second input, the VES studied the Language curriculum outcomes and other support information in the curriculum documents and developed a set of frameworks, consisting of statements about teaching methodology, learning program content, learning resources and learning products. These statements describe the curriculum intentions. The purpose

of these frameworks was to provide Impact Study researchers with data collection and analytic tools for monitoring in elementary and lower primary schools:

- The school based development of vernacular materials; and
- The types of and levels of vernacular texts being generated by students.

The VES envisaged that these frameworks could later be developed and used by teachers to

- Self-monitor their vernacular literacy program; and
- Plan for and evaluate students' vernacular literacy development.

A fuller discussion of these frameworks is contained in the 5th Six Monthly Report (Volume 2 to this report).

During her two week visit in November 2003, concurrently with developing these frameworks, the VES attempted to apply them in the four case study schools that she visited. Her observations and conclusions are necessarily very tentative.

The VES found that

- E2 teachers are providing vernacular texts to resource their integrated and thematic class programs and are using their own texts as the core of their language program;
- E2 teachers are not, however, producing texts with effective content; (i.e. they are not producing texts that are engaging and purposeful), are not involving students in the development of class texts, and are not providing a range of types of vernacular text models, or supporting students to produce a range of class texts;
- There appear to be very serious problems in lower primary classes both with respect to the development and/or use of vernacular texts (even in classes where the vernacular is English), and in all aspects of vernacular Language programs.

The VES suggests that some of these findings indicate serious non-compliance with the curriculum intentions.

The VES also found

- That teachers in bilingual classes seem to have the language skills to teach the program in these classes. However, it may be that oral texts are not being used by teachers in their Language programs;
- Evidence that elementary teachers are providing and using vernacular texts in their class programs, but are not using a wide range of vernacular text types, and are not using vernacular texts at an appropriate level (language or content). Some E2 teachers are using English texts to teach English literacy. It may be that teachers in multigrade elementary schools are having difficulty in providing enough English in their E2 program;
- No evidence that lower primary teachers were using vernacular written texts, but were using English written texts in their class programs. English texts used by teachers in lower primary classes were usually not generated locally, and the commercial materials used by lower primary teachers have problems. These

include that the content lacks local relevance and the language lacks local purpose (this is true in both 'English as vernacular' and bilingual classes);

- Class programs do not require students to practice or demonstrate oral competence, in both vernacular and English; however those oral and written texts that students are demonstrating in their class programs (a limited range, and only English in lower primary), seem to be at the expected level;
- E2 students are producing vernacular texts of an appropriate standard for that type, but a very limited range of text types;
- Lower primary students are not producing vernacular texts, except where the vernacular is English, (and except in free writing activities). Those English texts being produced by lower primary students are of an appropriate standard for that type, but in a very limited range of English text types;

The VES's conclusions, in completing her input to the study, are very tentative. She has therefore recommended that

- The frameworks be further trialed and refined to ensure that they are suitable instruments for the research team to use, and that they provide reliable data about the state of reform curriculum implementation when used by a number of researchers in different contexts;
- The Impact Study researchers be trained to implement the frameworks, and then implement them in case study schools around May or September in each school year;
- Frameworks for describing the community context and the school context be developed and implemented as well;
- Changes in degree to which the schools are implementing the reform curriculum be recorded, and matched to the student performance data to identify the impact of the reform curriculum;
- That the data obtained through implementation of the frameworks be made readily available for educational planners.

In the context of the planning and implementation of the curriculum reform activities, she has further recommended that:

- A survey of a greater number of lower primary classes be undertaken immediately, (perhaps using adaptations of the frameworks), to establish if they are implementing bilingual programs. If not, research into why they are not needs to be undertaken;
- In all teacher training (inservice and preservice; elementary and lower primary), include also: uses of fictional and factual texts; what is cultural literacy; using texts in the development of cultural literacy; and appropriate learning processes for reform curriculum outcomes;
- Lower primary teachers be inserviced in: the intention of the lower primary Language curriculum, and how to implement it; using oral texts in the class program; developing locally relevant texts for classroom use (in vernacular and in English); and supporting students to produce a range of texts;

- That elementary teachers be inserviced in: using oral texts in the class program; producing texts with engaging and purposeful content; involving students in the development of class texts; providing a range of text types; supporting students to produce a range of class texts; and E2 English in a multigrade class.

In summary, it is clear that, in general terms, language background in elementary school does influence literacy and numeracy outcomes in primary school. It appears that vernacular education in elementary school may be beneficial for literacy; but much less clear that it is beneficial for numeracy. It may even be detrimental for numeracy. It is difficult, however, to distinguish the effect of vernacular education in elementary school from the effect of rural location in terms of educational disadvantage. This distinction may become less difficult with several more annual assessments, when the achievement of children who started in elementary schools when or since the reform curriculum material was introduced and available (Reform Status 3) can be compared with that of pre-reform and Reform Status 2 children.

The VES has drawn attention to a number of areas where lower primary, and to a lesser extent elementary education, appear on present evidence to be falling well short of achieving the ‘cultural literacy’ objectives as implied in the Language curriculum outcomes and other support information in the reform curriculum documents, and as described by the VES. These include some issues that are undoubtedly of concern for the DOE.

As previously noted, the impact on ‘cultural literacy’ of vernacular education (as part of the reform curriculum) is not stated explicitly as one of the First or Second Order issues to be addressed by the Impact Study. The issue has emerged during the course of implementing the study. The implementation of the VES’s recommendations in terms of trialing the frameworks was not on the workplan developed by the previous Research Team Leader, and would require some redirection of effort. It would also require some change to the timing of field visits, as the optimum times for observing classes in normal activity were estimated by the VES to be May and October.

The Mid Term Review provides an opportunity to reflect on present directions of the study, and if appropriate, make some changes. The field visit planned for March/April (prior to the Mid Term Review meeting on 14 April) was rescheduled for April/May, following the meeting, so as to allow for any possible decisions on change of emphasis to be implemented without delay.

The study team would welcome the expression of a view from the Steering Group as to whether the VES’s recommendations on trialing the implementation frameworks should proceed to implementation. If so, the Research Team Leader proposes to pilot their implementation with a visit to two case study schools in the week commencing 19 April. Following this, the implementation process will be reviewed, and if appropriate, the local researchers will be trained to replicate the process. There may, however, be some resourcing implications associated with implementing the full trial of the frameworks.

5 Access to Curriculum Materials and Related Teacher Inservice

This section addresses the following research question: ‘To what extent has access to curriculum materials and related teacher inservice affected the impact of curriculum reform?’ (First Order Question No. 3).

A distinction is made between the specifically targeted material and support that is provided by the Curriculum Reform Implementation Project (CRIP), which will be described as Category A material, also including all material specific to elementary education. All other curriculum material will be denoted as Category B material, including:

- (i) Reform curriculum materials that were piloted with a number of schools in various parts of PNG in the 1990s;
- (ii) Other curriculum materials which have been distributed to schools or obtained from other sources both before and after the piloting of reform curriculum materials.

Category A materials were distributed in two phases:

- September 2002: Lower Primary Units 1 – 3;
- October 2003: Lower Primary Units 4 and 5, and Upper Primary Units 1 – 3.²

The presence and usage of Category A materials is critical to the implementation of the reform curriculum. Data on the presence or absence of Category A materials in schools, their accessibility, and their usage by teachers and students, are the means by which access is measured.

Similarly, ‘Category A inservice’ will be used to refer to inservice specifically targeted to support the Category A materials. All other inservice will be denoted ‘Category B inservice’.

Access to Curriculum Materials

In February 2003 a systematic audit of the curriculum documents and resources available in the elementary, lower primary and upper primary sections in each of the 12 case study sites. This was essentially an inventory of Category B materials. As such, it can be taken to represent the situation existing before the distribution of the new reform curriculum materials supported by CRIP. The documents were classified into the following three broad types: policy documents, curriculum documents and student learning materials. A total of ten elementary schools, ten lower primary and eleven upper primary school sites completed the survey.

The main findings may be summarised as follows:

Elementary schools had fairly comprehensive sets of policy, curricula and student learning materials. The two most remote schools were adequately resourced, whereas a large urban school had the most limited resource base of any surveyed. That

² The distribution of these materials to some of the more remote schools was scheduled to take place in February 2004. At the time of preparation of this report, it was not confirmed whether this had actually occurred.

elementary schools were better resourced with documents than primary schools is to be expected, given that elementary schooling was an innovation introduced with the reform and the materials were initially developed along with the training of the teachers.

Junior primary grades were on the whole poorly resourced to undertake the planning and delivery of the curriculum. While seventy per cent of schools had a range of curriculum documents, many of the policy statements and the related materials were out of date. The curriculum coverage in the three senior primary grades was very discouraging. While some schools have small, very worn sets of Grade 6 Mathematics materials, little else was identified in the majority of the study schools. Compared to the elementary schools the curriculum documentation and the learning materials resource base in the junior primary grades were found to be very limited. The curriculum basis for the planning for effective learning did not appear to exist for the upper primary grades these grades. Furthermore, the policy documentation that describes and explains the structural and curriculum reforms in PNG schools was not available in many of the schools surveyed.

Access to Teacher Inservice

A survey of teachers' professional development was made in February 2003 to reflect the range and frequency of in-service activities as well as to identify the level of pre-service training of each teacher who had taught or was currently teaching one of the cohort classes. It was largely a survey of Category B inservice. As such, it would not capture the self-paced learning materials accompanying the new curriculum materials distributed with support from CRIP. Some of the face-to-face activities run either at the district or school level by inspectors or assessors trained by CRIP may, however, be included. The results were reported in full in the 4th Six Monthly Report of August 2003.

Fifteen types of external courses were identified, with at least 140 courses attended by the 79 respondents over the last eight years. CRIP sponsored courses were only specifically identified in four per cent of the cases. School based activities varied from short one-hour workshops to day courses. Over 235 activities were identified by the 79 teachers. Although many teachers have had an opportunity to upgrade their qualifications, others still work with quite dated qualifications and/or very limited access to external course opportunities.

In summary, the curriculum materials inventory data demonstrate that there would be little if any prospect for the primary schools to implement the reform curriculum without the distribution of materials with CRIP support which were detailed above. The study team has been requested by the CRIP ATL to conduct an inventory in case study school of the receipt of the Category A materials, and to report on how they are being used. This will be undertaken in the field visit which immediately follows this Mid Term Review, using the questionnaire from Impact Study 5 as a checklist. It will enable verification of receipt of the Category A materials. This activity is over and above the original Scope of Services. It was regarded primarily as a means of cross-checking findings from Impact Study 5. This verification will be useful, however, to the present Impact Study as it will allow 'before' and 'after' comparisons to be made of various data sets within the study.

The Professional Development survey as it stands is of limited utility in addressing First Order Question 3 because it remains difficult, without further information, to distinguish and identify attendance at face-to-face activities run either at the district or school level by inspectors or assessors trained by CRIP (Category A inservice). This problem is compounded by the fact that there is no central record of these.

A combination of several approaches may help to address this problem. One approach would be to seek an overview of the funding provided by CRIP for these activities. Another would be to seek information from provincial inservice plans on what activities have been delivered for the case study schools. A third would be to re-survey the same teachers and ask them to specify, for each inservice activity in which they participated, whether these activities were specifically related to the reform curriculum materials that were distributed in September 2002 and October 2003. It would greatly strengthen the survey if it were designed to collect data about usage of the self-paced learning materials, and teachers' views about their usability without additional support.

6 Changes in Teaching, Learning and Student Assessment Practices

This section addresses the following research question: 'To what extent has the implementation of the reform curriculum led to changes in teaching, learning and student assessment practices?' (Second Order Question No. 4).

In this section of the report, the term 'reform curriculum' refers to Category B materials and teacher inservice because of the recency of the distribution of the Category A materials. It discusses teacher perceptions, learner perceptions, provincial level officer perceptions, and community perceptions.

The findings are summarised as follows:

There is clear evidence from teachers that teaching and learning practices have been influenced by early exposure to pilot reform curriculum materials and experiences (i.e. Category B materials and teacher inservice). This suggests that the impact of the distributions of Category A materials and related teacher inservice is likely to be very significant.

There is also evidence from students that the experience of elementary education is enjoyable. At this stage it is not possible to determine how much of this enjoyment is attributable to the elementary curriculum and delivery methods themselves (as reform materials and practices), and how much is merely the greater enjoyment that tends to be experienced in early childhood education compared to later education.

There is clear evidence that upper primary, particularly Grade 6, students have so far derived little benefit from changed teaching practices. They are still heavily dependent on the blackboard and clear teacher explanations to facilitate their learning. The scarcity of resources may well play a part in limiting teachers to black board based methods. This highlights the importance of high quality teaching skills.

7 Community Expectations and Perceptions

This section addresses the following two research questions: ‘To what extent do communities perceive the reform curriculum to be more culturally relevant?’ And ‘Has the implementation of the reform curriculum changed community expectations of and attitudes to elementary and primary education?’ (Second Order Questions Nos. 5 and 6).

Here the term ‘reform curriculum’ is used very loosely to refer to whatever understanding communities have of the reform and the reform curriculum. This would include the innovations of elementary education and vernacular education, the extension of primary education to include Grades 7 and 8, and the use of new materials and teaching methods (these would include mainly Category B materials and teacher inservice).

The findings of the community consultations are described in detail in the 2nd Six Monthly Report.

The main findings are summarised as follows:

Community consultations in 2002 show that there were mixed views about the cultural relevance of the reform curriculum, depending chiefly on rural or urban location and choice of medium of instruction in the early years. These reflect the tension between preparing children for modern sector life on one hand, and for life in the village environment on the other.

Without doubt the introduction of elementary education has changed community expectations of elementary and primary education. Those rural communities with a single vernacular and with key community members involved in the design and/or the delivery of elementary curriculum were the most satisfied about changes associated with the reform. Mixed language communities tended to be divided in their views about the impact of the language used in the elementary grades but were enthusiastic about the increased opportunities for their children to attend a local school. There was a strong view in favour of elementary education overall.

There was a generally limited overall understanding of the reform, however, even amongst some of the early reform communities. This suggests that there is much scope for further change in community expectations of and attitudes towards elementary and, particularly, primary education. Possible ways to achieve this might include greater community involvement, particularly of women, in school activities, and the development of more community-related teaching materials. Further consultations will be held with case study school communities in the field visits which will immediately follow this Mid Term Review. There would be an opportunity, following this Review, to include additional questions to address specific concerns.

8 Case Studies

This Section of the Mid Term Review Report presents a discussion of the twelve case studies to date, both individually and as a set of twelve. This Executive Summary deals only with the set to twelve. Some sites operate as single schools from EP –

Grade 8. Three sites (4, 5 and 8) are not co-located and operate as separate elementary and primary schools. Three sites (2, 10 and 11) are co-located but have separate Boards of Management (BOM) and operate as separate schools.

The case studies have been, and will continue to be, compiled progressively with data collected during each field visit. At this stage they are therefore only partially complete. For the purpose of this section the case studies have been numbered from 1 – 12³ and organised so as to reflect their chronological position relative to the reform. In other words, they are organised by the year in which they commenced elementary education, from earliest to latest. Thus Case Study No. 1 is the earliest to have experienced the Reform, and Case Study No. 12 is a pre-reform case.

As previously stated, the critical dates for measurement of impact are those on which the reform curriculum materials were distributed through CRIP, thus:

- September 2002: Lower Primary Units 1 – 3;
- October 2003: Lower Primary Units 4 and 5, and Upper Primary Units 1 – 3.

Notwithstanding this, it is reasonable to expect that schools that have had an earlier and therefore longer experience of aspects of the reform might reflect some of that experience – in teachers’ and community perceptions, in familiarity with the objectives of the reform, and possibly even in the performance of children with early exposure to the trialing of reform curriculum materials.

An analysis has been made of the value added for each case study site by the additional year of schooling in 2003 relative to its early/late/pre-/reform status. The E1/G3 cohort has been omitted because of doubts about the validity of the data.

Early reform sites, such as case study sites 1, 2 and 3, there was evidence of negative value added in either or both cohort classes, and in either or both subject areas. This finding is surprising, given that it might be assumed that children in these sites had longer exposure to the reform and had been advantaged by that. It implies that other factors, perhaps rural location, may have outweighed reform exposure. Conversely, some of the late reform sites and the pre-reform site (eg. sites 9, 10, 11 and 12) demonstrated substantial value added in either or both cohort classes, and either or both subject areas. One possible interpretation of this is that the late reform/pre-reform sites were starting from a low base and had greater scope for adding value. The fact that they did so, to a greater or lesser extent, seems to suggest that there is scope for some degree of catch-up.

The sites that consistently added value (i.e. in both cohort classes and in both subject areas) were sites 4, 6, 8 and 10. They were a mixture of urban and rural, government and agency schools, and distributed throughout the range of mid to late reform schools. These strong performances and the varied characteristics of schools suggest that other factors probably outweigh reform status as a factor affecting the ability to derive value from schooling.

³ This numbering system does not correspond with the numbering of the schools used in previous reports.

9 Interim Conclusions

This section contains interim conclusions regarding Impact Study 1 based on this Mid Term Review. They are described as ‘interim’ because only about half of the study has been completed, and many of the findings to date still represent baseline conditions. Conclusions are necessarily quite tentative at this stage. A further three collections of data in April/May 2004, October/November 2004 and early 2005 will enable conclusions to be made with more confidence in later reports. The interim conclusions are organised in the order of the sections of the report which also reflect the order of the research questions in the Scope of Services.

Participation in Schooling and Attitudes to Schooling

The study to date has shown that participation in schooling varied widely between case study sites. Attendance rates improved with successive levels of education, particularly that of girls. It appears to be more difficult for girls to attend elementary schools compared to primary schools – a surprising finding. It is recommended that

Recommendation 1

In the forthcoming field visits, Impact Study 1 researchers include in their interviews with Head Teachers and TICs questions aimed at probing whether it is more difficult for girls to attend elementary schools compared to primary schools, and if so, what would explain this difference.

Amongst primary school children, pre-reform students demonstrated higher attendance rates than others. This pattern emerged very clearly, but so far there is no information that would explain it. It is recommended therefore that

Recommendation 2

In the forthcoming field visits, Impact Study 1 researchers

- (a) in their interviews with Head Teachers include questions aimed at probing whether parents of students in pre-reform classes hold different values regarding primary school that might affect attendance rates compared to parents of students in reform classes; and*
- (b) request Head Teachers to mobilise groups of parents of students in pre-reform classes and separate groups of parents of students in reform classes so that any difference in their views on attendance at school could be probed.*

Much of the non-attendance or early leaving was attributable to unavoidable factors such as illness or parental mobility. However, non-payment of school fees emerged as one of the avoidable factors that affected girls more than boys, at elementary level affected urban students more than rural, and at primary level affected rural students more than urban students. It is recommended that

Recommendation 3

The Department of Education give consideration to what policy initiatives it might develop that would help to address the attrition of girls, of urban elementary students, and of rural primary students resulting from non-payment of school fees.

Students on the whole enjoyed going to school, particularly elementary students. Matters relating to discipline, or lack of it, emerged as an issue for students, however. It is recommended that

Recommendation 4

In future field visits, the issue of discipline, or lack of it, be probed more thoroughly with students, teachers, HTs/TICs and community members.

There appeared to be a mismatch between students' career aspirations and the types of careers that they could reasonably expect. This could lead to dissatisfaction amongst children and parents. There was no indication from the data in this report that the reform was leading to a better appreciation of education for the purpose of rural life.

Recommendation 5

In future field visits,

(a) interviews with teachers and HTs/TICs include questions regarding what guidance is given to students about the types of careers that are likely to be available to them on completing Grade 8; and

(b) interviews with community members include questions about what career options they expect for Grade 8 leavers in their community.

Given the mismatch referred to above, it is recommended that

Recommendation 6

Future analyses of student focus group data be broken down by rural compared to urban schools.

Student Learning Outcomes in Literacy and Numeracy

The extent to which the implementation of the reform curriculum in primary and elementary schools has resulted in improvements in student learning outcomes, particularly in literacy and numeracy, cannot be assessed accurately at this stage, as the impact of curriculum materials distributed in late 2003 and early 2004 has yet to be felt. The November 2004 assessment, and any subsequent annual assessments, should demonstrate this impact. It is clear, however, that the impact is likely to be experienced differentially by male and female students, by pre-reform and reform students, and by students with differing linguistic backgrounds. On present indications, unless measures are taken to address the imbalance, it seems likely that the advantage of urban students compared to rural students will be perpetuated or exaggerated, regardless of the introduction of the reform curriculum. It is recommended therefore that

Recommendation 7

The Department of Education consider whether it may be able to target the needs of rural students in future initiatives aimed at promoting the reform curriculum so as to offset, as far as possible, the inherent educational advantage enjoyed by urban students.

Impact of Vernacular Education

It has been shown that, in general terms, language background in elementary school does influence literacy and numeracy outcomes in primary school. Within the limits of present evidence, it appears that vernacular education in elementary school may be beneficial for literacy. It is much less clear, however, that it is beneficial for numeracy. It may even be detrimental for numeracy. The effect of vernacular education in elementary school is difficult, however, to distinguish from the effect of rural location in terms of educational disadvantage. This distinction may become less difficult with the results of the November 2004 assessment, and ideally several more annual assessments, when the achievement of children who started in elementary schools when or since the reform curriculum material was introduced and available (Reform Status 3) can be compared with that of pre-reform and Reform Status 2 children.

Tentative evidence collected by the VES suggests that lower primary, and to a lesser extent elementary education, appear to be falling well short of achieving the ‘cultural literacy’ objectives implied in the Language curriculum outcomes and other support information in the reform curriculum documents. The Mid Term Review provides an opportunity to reflect on present directions of the study, and if appropriate, make some changes. As the issue of ‘cultural literacy’ is somewhat tangential to the Scope of Services of this study, it is recommended that

Recommendation 8

The Steering Group consider and advise the contractor for Impact Study 1 whether any redefinition of the Scope of Services should be made in order to further address the issue of cultural literacy in the remainder of the study.

The field visit now planned for April/May following the Mid Term Review meeting on 14 April would allow for any possible decisions on change of emphasis to be implemented without delay.

Access to Curriculum Materials and Related Teacher Inservice

The study to date has demonstrated that there would be little if any prospect for the primary schools to implement the reform curriculum without the distribution of the Category A materials which occurred in October 2003 and February 2004. The receipt of these materials will be verified by Impact Study 1 researchers during the field visit which immediately follows this Mid Term Review, enabling various ‘before’ and ‘after’ distribution comparisons to be made within the study. This should allow much more confident conclusions to be made in future reports.

The results of the Professional Development survey as they stand are of limited utility in addressing First Order Question 3, for reasons that were explained in Section 5 above. It is recommended that in future a combination of approaches be used by Impact Study 1 researchers to generate more useful, targeted information, as follows:

Recommendation 9

- (a) The CRIP office provide the Impact Study team with an overview of the funding provided by CRIP for inservice activities in which case study schools have participated;*
- (b) During the forthcoming field visit, Impact Study researchers seek to interview appropriate provincial personnel in order to obtain information from provincial inservice plans on what activities have been delivered for the case study schools in their provinces; and*
- (c) During the forthcoming field visit, Impact Study 1 researchers re-survey those teachers who have taught or are teaching cohort classes who participated in the Professional Development survey undertaken in February 2003, and ask them to specify, for each inservice activity in which they participated, whether these activities were specifically related to the reform curriculum materials that were distributed in September 2002 and October 2003.*

Changes in Teaching, Learning and Student Assessment Practices

This report shows that elementary students are generally enjoying their experience of school. As the elementary curriculum is by definition ‘reform curriculum’, it is not likely that the extent to which this enjoyment is attributable to the elementary curriculum and delivery methods themselves can be determined. There is no basis for comparison.

Evidence presented in this report suggests that the impact of the distribution of Category A materials with their related teacher inservice is likely to be very significant for upper primary students. Where teachers are reliant solely on the use of self-paced learning materials for their inservice, the impact will be influenced by the capacity and motivation of teachers to use them. It is recommended therefore that

Recommendation 10

During the forthcoming field visit, Impact Study 1 researchers seek to interview those teachers who have taught or are teaching cohort classes and ask them to comment on their usage of the self-paced learning materials, and their views about the usability of these materials without additional support.

Community Expectations and Perceptions

This report shows that there was a generally limited overall understanding of the reform amongst community members, even amongst some of the early reform communities. Views about the cultural relevance of the reform curriculum were mixed, reflecting the tension between preparing children for modern sector life on one hand, and for life in the village environment on the other. There was a strong view in favour of elementary education overall.

Two further opportunities for community consultations will occur within the present study: in the field visits which will immediately follow this Mid Term Review, and again in early 2005. It is anticipated that community expectations and perceptions may well have changed since the baseline consultations were made in early 2002. At

this stage it would be premature to draw any specific conclusions about the extent to which communities perceive the reform curriculum to be more culturally relevant. It would be equally premature to attribute to the implementation of the reform curriculum (as defined at the start of this report) any of the changed community expectations and attitudes that have so far been recorded. It is recommended, however, that

Recommendation 11

The Steering Group consider and advise the Impact Study research team of any additional questions they would wish the research team to put during forthcoming community consultations which would address specific concerns not so far identified.

Case Studies

It has been shown that in early reform sites, contrary to expectations, the value added in either or both G3/G5 and G5/G7 cohort classes was negative in either or both of mathematics and language subject areas. Conversely, in some of the late reform sites and the pre-reform site substantial value was added. The characteristics of the schools which exhibited strong performance in terms of value added were very varied and did not appear to be related to reform status. These findings suggest that it would be useful to probe the reasons for these surprising results. It is therefore recommended that

Recommendation 12

The Impact Study research team, in its forthcoming field visit,

- (a) provide Head Teachers with information on their own school's performance in terms of value added compared to other schools (without revealing the identities of the schools); and*
- (b) seek the views of Head Teachers as to what they feel might have accounted for their own school's performance (without implying any criticism of that performance).*

A further conclusion should be made in the light of the preceding interim conclusions. With each successive year of implementation of the reform curriculum, it is likely that conclusions from the accumulated data may be made with increasing confidence. It will become clearer what outcomes may be attributed in whole or in part to the impact of the reform curriculum developed and distributed with CRIP support, and what findings are aberrations that should be discarded. With successive years, as a second E1/G3 cohort to be surveyed in November 2004 progresses through elementary and primary school, new and better comparisons between Reform Status 3 students and others will become possible, from which conclusions can be made with much greater confidence.

For example, we should expect that the impact of the reform curriculum materials distributed in October 2003 will strengthen as teachers become more familiar with it, and more skilled and experienced in its delivery. Thus we should expect its impact on the performance of E2 in 2005 to be greater than its impact on E2 in 2003. Similarly, if the performance of G3 in 2006 were shown to be significantly better or worse than the performance in G3 of the original E1/G3 cohort in 2004, it would imply that the reform curriculum is resulting in better or worse achievements in literacy and

numeracy as measured by the instruments developed for this study. It is suggested that this knowledge is of vital importance to the DOE. These comparisons will not be possible if the study concludes, as planned, in mid 2005.

Ideally the study should be taken over and implemented by the DOE in succeeding years. The contractor's tender originally anticipated that this would happen. A number of requests have been made for DOE personnel to accompany research team members on field visits, with a view to familiarisation. So far this has not proved possible due to budgetary and possibly other constraints. It is realised that it may not be possible for DOE to take over the study without external funding support. It is recommended therefore that:

Recommendation 13

The Steering Group consider recommending to SAGRIC and AusAID that the study be extended for a further two years.