New Horizons for Primary Schools/Jamaica

FORMATIVE EVALUATION

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EXECUTIVE SUMMARY

Introduction

This document summarizes the results of the 2001 formative evaluation of the New Horizons for Primary Schools (NHP) Project in Jamaica. NHP is a five-year effort to improve the Mathematics and Language arts of Jamaican primary school students, who because of poverty or other factors have had little success in school. The project is a partnership between the Jamaican Ministry of Education, Youth and Culture, USAID, and the NHP technical assistance contractor, Juárez and Associates.

The formative evaluation is conducted yearly near the end of the school year. It is designed to inform the implementation of NHP interventions and thereby permit NHP staff to target interventions in critical areas of the program. The formative evaluation process also serves to measure project results from an established baseline, which will contribute to the measurement of final project results. In 2001, the formative evaluation had the additional purpose of building the capacity of Jamaican Education professionals in systematic qualitative data collection and the integration and interpretation of qualitative and quantitative data.

Evaluation Methodology

A team of 11 Jamaican education professionals carried out the data collection for the evaluation. They employed a multi-method design, consisting of inventories, checklists, classroom observation forms, and focused interviews, to measure the conditions in place for effective learning in NHP classrooms. A stratified sample of 19 schools, or 26% of the 72 NHP schools served as the data source for the evaluation. Observational data were complemented by the results of the third grade diagnostic tests and the sixth grade GSAT results for 2001. Evaluators were trained in two workshops dealing with qualitative data collection and data reduction, analysis and interpretation, respectively. The evaluation took place in May of 2001.

Principal Findings

Language Arts mastery levels among NHP students in the upper primary grades have improved as a result of the project. The percentage of NHP students reaching at least near mastery on the Language Arts GSAT increased 14.8% for girls and 16.7% for boys from the 1998 baseline to 2001. This is greater than the increases of 11.5% for girls and 16.3% for boys in non-NHP schools.

NHP has not performed as well as the primary school system in general in improving mastery levels of sixth grade students in Mathematics. The percentage of NHP students reaching at least near mastery has risen by 24.8% for girls and 20.2% for boys in Mathematics. However, the changes were not as great as those of 28.8% for girls and 24.6% for boys in non-NHP schools.

NHP has had the least success in improving the performance of children in the early primary grades. In Language Arts, NHP third graders have had a decrease in the combined near mastery

and mastery levels of -3.6% for girls and –1.1% for boys, since the 1998 baseline. In Mathematics the increases for both boys (+13.5%) and girls (+16.5) are less than that for girls (20.6%) and boys (20.3%)in non-NHP schools.

Despite positive gains, the percentage of NHP students who master the curriculum is low. This low success rate was exacerbated by poor performance of the entire primary system in 2001. Only about one-third of NHP girls and one-fourth of boys exhibit even near mastery on the GSAT. Less than half of third grade students have mastered the Language Arts curriculum and only about 35% achieve mastery in Mathematics. *In both NHP and non-NHP schools, the percentage of children reaching mastery in Language Arts declined by at least 4.2% from the2000 school year. In Mathematics, the decline was 0.5%, or more.*

NHP has been successful in changing classroom environments so that they are organized to facilitate learning and in providing ancillary learning materials. However, pedagogical approaches that emphasize participation of the child in a variety of learning opportunities have not been implemented. Instructional delivery in NHP schools remains highly traditional. Teachers initiate more than 90% of the interactions with children, allowing little opportunity for self-expression or expansion of ideas. Although there are sufficient reading materials for 90% of the students, and mathematics materials for over half of the students, such materials were actually used by less that 20% of the students.

The concentrated effort by NHP to provide hands-on professional development and other technical assistance at the school level has yet to show an impact on student performance or teacher behavior. No significant correlations were found between the number, type or level of effort of activities carried out by NHP professionals in individual schools and the change in mastery levels for schools.

At the school level, NHP has been successful in creating an environment to support improved learning of Mathematics and Language Arts. Every indicator of system support has had a positive change from the 1999 baseline year and most were 100% or nearly 100% implemented.

Implications

NHP specialists should review their activities to determine interventions that are contributing to improved Language Arts performance in the upper grades and examine the applicability of such strategies to earlier grades, and perhaps to Mathematics. One possibility is that greater use is being made of ancillary reading materials provided by the project.

NHP teachers' lack of use of the participatory, child-centered methodologies, espoused by NHP and the new primary curriculum argues for a change in the professional development strategies employed by the NHP project. More direct demonstration and modeling with teachers when specialists visit the schools may be necessary to change classroom behavior. Given the small number of NHP professional staff, their expertise may have to be supplemented by additional subject matter or pedagogical specialists.

The administrative infrastructure for improvement in learning appears to be in place and is an important achievement of the NHP project. Given the limited improvement in student performance, however, may require special training for teachers and administrators to make diagnosis of student performance and planning of strategies that will enhance student abilities in Mathematics and Language Arts and explicit part pf the administrative process.

The Jamaican primary education system, of which NHP is a part, is not yet producing the types of graduates that the society desires. Although there have been improvements, the percentage of sixth grade students with mastery of the curriculum is less than 35% in Language Arts and fewer than 20% the Mathematics. The monitoring carried out under the formative evaluation has coincided not only with the implementation of NHP but also with the launching of a new primary school curriculum. It may be that when the curriculum is fully implemented in all schools, that improvement in student performance will be accelerated.

I. INTRODUCTION

This document describes the results of the third year of formative evaluation of the New Horizons for Primary Schools (NHP) Project. The evaluation is carried out near the end of the Jamaican school year (May-June) to provide a barometer of the progress of the project on a series of indicators. (A list of indicators and measures used in this evaluation are found in Appendix A of this report). Originally, the formative evaluation had two purposes. First, the formative evaluation results inform the implementation of NHP interventions and permit NHP staff to target interventions in critical areas of the program. The results complement those of ongoing assessments of the implementation process undertaken informally through school visits, feedback on professional development efforts and periodic communication with school administrators and teachers. Second, the formative evaluation process serves to measure project results from an established baseline. As it provides systematic monitoring of performance over time, formative evaluation contributes to the measurement of final project results. (Baseline indicators and projections of change over time derived from the 1999 formative evaluation are found in Appendix B of this report).

In 2001, the formative evaluation had an additional purpose. In order to respond to the capacity building interests of the Ministry of Education, a workshop on evaluation methodology was held for technicians in the Ministry of Education, members of local teachers' colleges, and New Horizon Project personnel. The workshop dealt with observation and interview techniques to measure progress toward NHP objectives. Dr. Ray Chesterfield and Dr. Kjell Enge, who are experienced education evaluators, conducted the workshop. These individuals also carried out the data collection in the first two years of the formative evaluation effort. Following the training, a team of 11 of the workshop participants collected data from a sample of NHP primary schools. A follow-up workshop on data analysis and interpretation was held subsequent to the data collection, entry, and cleaning.

A. Background

The primary objective of New Horizons for Primary Schools (NHP) is to enhance the performance of Jamaican primary school students in numeracy and literacy. The focus of the technical assistance component of the project is on those children who, because of poverty and a lack of other enabling conditions, have had little academic success in school. Increased academic success is to be accomplished through the development of model interventions that, when tested, can be used to improve the performance of low-achieving children throughout Jamaica. Thus, the products of the contractor's work are changes in schools and classrooms that result in individual students having greater academic success in primary school. Such results include measurement of the indicators for the USAID strategic objective.

Systems, such as computerized administrative and student tracking systems, are also being implemented over the life of NHP. These systems are to assist schools in monitoring their own performance. The results of such individual school monitoring can be aggregated to examine project performance. Similarly, NHP is integrating MOEC databases to provide additional data sources for monitoring performance. Until such systems are fully operational,

however, monitoring is being carried out as part of the formative evaluation effort designed to provide feedback to program technicians implementing the interventions. As formative evaluation requires in-depth data collection, a representative sample of NHP schools is selected each year for evaluation purposes.

Many of the indicators for monitoring performance are complex concepts that require the combination of qualitative and quantitative methods to measure accurately. The following pages discuss the procedures used to collect data on NHP indicators. Subsequent chapters present the findings of the formative evaluation, in terms of change from the baseline data, and provide conclusions and implications drawn from these findings.

B. Methodology

1. Indicators

The indicators are taken largely from the U. S. literature on school/classroom effectiveness and on the growing body of international literature on classroom interaction and educational quality (see attached bibliography for examples). Three levels of indicators were used. The first relates to student performance in terms of mastering the curriculum. The second consists of indicators of teacher performance that are generally associated with greater quality in terms of students' academic performance. Third, are there indicators of system support or enabling factors such as efficient school management, professional development opportunities for teachers, and parent participation in the education of their children, that must be in place to improve the performance of individual children?

2. Design

A multi-method design, consisting of inventories, checklists, classroom observation forms, and focused interviews, was employed to measure the conditions in place for effective learning. This design allows for the measurement of the impact of the interventions implemented to improve learning, especially among students who have had limited success in school. Evaluation efforts focused on both females and males. This is important not only to ensure that initiatives are equitable but also to identify initiatives and strategies that are successful regardless of gender.

Sample. A stratified sample of 26% of project schools was drawn from the universe of 72 schools. Schools were stratified by size (small, medium, or large) and type (primary or all age) then randomly selected within strata. As the focus of the project is a "ground-up" approach that begins with needs identified by participating schools, those schools that had been most involved in NHP activities during the year were over-sampled. The final sample consists of 19 schools and 32 classrooms for intensive data collection and analysis.

The focus of the formative evaluation was on third grade. The purpose of the formative evaluation was to obtain in-depth, systematic data, in a limited amount of time. Thus, it concentrated on one grade as an indicator of general progress. Third grade was chosen, because

there are test scores available that allow greater diagnostic ability and permit the monitoring of change in the cohort of third graders serving as the baseline over the life of the project. This is important because both the1998 and 1999 NAP scores suggest that NHP children fall behind principally between third and sixth grade.

In the first two years of the evaluation, first, second, fourth, fifth and sixth grade classrooms were also observed. The data from these classrooms showed the same general patterns as those for the sample as a whole. This suggests that for monitoring purposes, third grade results can be used as a general indicator of progress.

Instruments. Instruments included classroom maps, materials inventories, classroom observation forms, classroom environment assessments, and interviews guides for use with teachers, students and school principals. Maps were employed to identify children and to examine the context in which they interact with teachers. Materials inventories measured both the presence and use of all materials at different times during math and language arts lessons. Observational sweeps were made at three points in time during each academic context. At each sweep, the number of books and ancillary materials available and in use, were counted. Classroom interaction was measured through a teacher-student interaction protocol. This instrument focused on teachers' interactions with individual students and the nature of those interactions in different academic classroom activities. In order to ensure consistency and control for contemporaneous events that might influence behavior patterns, the form was used for ten minutes at four different times during the instructional day in third grade classrooms. Two observations took place during mathematics lessons and two during language arts. Thus, a behavioral sample of 20 minutes for each of the target content areas was created. Researchers used the classroom environment instrument to rate the appropriateness of the classrooms for child-centered learning.

Teachers' perceptions of the interventions, as well as their mastery of and commitment to the new approaches implemented under NHP, were tapped by a teacher interview schedule. Similarly, changes in the school management planning and systems were measured through an interview with the principal. Students were queried about activities in the home and involvement of parents in the children's reading.

Fieldwork Procedures. A schedule of school visits was developed with the field workers, and NHP staff contacted the principals and informed them of the visits. Two of the backstop personnel for the institutional contractor assisted a local researcher coordinator in scheduling and supervising the fieldwork. Fieldworkers synchronized observations through training exercises during the workshop. This training included exercises with the instruments using videotapes of classroom interaction in schools to ensure consistency in observations and interviewing. Parallel observations were conducted with the instruments until an inter-observer agreement coefficient of above .70 was reached for all observational instruments.

The researchers worked in small teams of up to four people and spent up to one full day at each school collecting data. Procedural guides and operational definitions were attached to specific instruments as references to ensure consistency in field procedures during the

investigation. Following each day of fieldwork, the coordinator gathered the instruments from the teams and the backstop personnel monitored the quality of the data collection and entered the information into SPSS spreadsheets. Eighteen schools were visited and complete sets of data were collected from 30 classrooms.

Data Analysis. The principal unit of analysis was the classroom. As the interventions are focused largely on improving teaching, it is changes in classroom-level environments and behaviors that affect student learning. Data analysis consisted of calculating the absolute and relative frequencies of each behavioral indicator and making comparisons across the three evaluation years. Differences by types of schools were also examined. Special indices were created to measure complex issues such as teaching quality. Where appropriate, statistics such as chi-square and correlations were used to examine relationships among the sample.

C. Assumptions

The ongoing formative evaluation is based on several assumptions. First, the school and the class are the key units of analysis in planning and intervening to improve the quality of learning. Second, the school is a social system and the interaction of all of the elements within a school has an influence on student learning beyond that provided individually by inputs to the school. This is not to suggest that the uniqueness of each school makes aggregate measurement impossible, but rather that accurate measurement of the impact of schooling is a complex undertaking requiring the integration of a variety of data collection approaches.

II. FINDINGS

A. Student Performance

Jamaica is promoting pupil-centered "everyone can learn" concept of teaching rather than a norm-based "cream of the crop" approach. Thus, the focus is shifting to all children's mastery of the curricular content. This means that the array of individual scores will shift from the normal distribution or "bell shaped curve" associated with a norm-based assessment and mean scores, toward a "J-curve" with a few students falling at the low end and the middle and most scores reflecting a high degree of learning. However, with the current inverse J-curve, the first step is to move students to "near mastery" levels. The formative evaluation originally examined both third and sixth grade mastery. Thus, the NAP and Student Assessment Unit criteria of less than 50% of the items in each domain correct as "no mastery" level, was used in the evaluation. Although NAP does not designate mastery levels for the sixth grade GSAT, the criteria used at the third grade level was employed in determining student progress (less than 50% correct = "no mastery," 50% to 75% correct = "near mastery" and above 75% = "mastery".

It has proved somewhat difficult to obtain complete data sets of either NHP or non-NHP third grade tests, owing to their diagnostic purpose, which leads schools not to report results. Thus, the USAID strategic objective team will use only sixth grade in their reporting. The formative evaluation will continue to include third grade tests when they become available, through update reports. Both third grade and results and sixth grade results for 2001 are included in this report. All test results are reported in relation to 1998, the baseline year.

1. Mathematics

a. Third Grade

Table 1 shows the change in the percentage of children reaching near mastery of the third grade mathematics curriculum, as measured on the diagnostic test for that subject. Changes in student performance in NHP schools are compared to all primary schools not participating in the NHP program. Both yearly change and total change from the baseline are provided. As can be seen, there is a small overall change for NHP from 1998 to 2001. NHP children have made relatively greater gains in test performance in reaching near mastery than Jamaican third grade school children as a whole, and this is true for both boys and girls. However, in the 2000 school year, there was a decline in third grade near mastery performance for all groups of children and NHP children had greater declines than their counterparts. Girls in the 2001 NHP third grade population made up the gap on the non-NHP population, whereas NHP boys are 1.7% lower than non-NHP boys.

Table 1: Change in Near Mastery on Third Grade Diagnostic Mathematics Test in NHP and non-NHP Schools by Gender and Year

Year	Third Grade Female				Third Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	37.9		43.0		28.8		33.8	
1999	45.1	+7.2	45.0	+2.0	37.0	+8.2	38.5	+4.7
2000	38.0	-7.1	43.0	-2.0	29.0	-8.0	35.0	-3.5
2001	41.8	+3.8	41.0	-2.0	34.8	+5.8	36.5	+1.5
Change from Baseline		+3.9		-2.0		+6.0		+2.7

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

Lower near mastery levels may be the result of greater numbers of the third grade population reaching mastery. This is shown both by the percentage of children in the mastery category in subsequent years and by the total percentage of children in the mastery and near mastery categories. Ideally, all children will be in the mastery category. Table 2 shows that a greater percentage of NHP third graders have mastered the curriculum than in the 1998 baseline year. However, they have made less improvement than non-NHP children of both genders and the gap has increased. Again there is a decline from 1999 to 2000 among all children.

Table 2: Change in Mastery on Third Grade Diagnostic Mathematic Test in NHP and non-NHP Schools by Gender and Year

Year	Third Grade Female				Third Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	9.3		12.7		4.1		7.9	
1999	19.4	+10.1	28.0	+15.3	11.8	+7.7	19.5	+11.6
2000	18.0	-1.4	24.0	-4.0	9.0	-2.8	15.0	-4.5
2001	21.9	+3.9	35.3	+11.3	11.4	+2.4	25.3	+10.3
Change from Baseline		+12.6		+22.6		+7.3		+17.4

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

Table 3 shows that there has been substantial improvement in third grade children's performance in mathematics from the 1998 baseline. However, non-NHP children have had greater success than NHP children. This is largely a result of NHP children failing to overcome the decline from 1999 to 2000. Non-NHP third graders, on the other hand, are at higher levels than similar third graders in 1999.

Table 3: Change in Mastery and Near Mastery on Third Grade Diagnostic Mathematics Test in NHP and non-NHP Schools by Gender and Year

Year	Third Grade Female				Third Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	47.2		55.7		32.9		41.5	
1999	64.5	+17.3	73.0	+17.3	48.8	+15.9	58.0	+16.5
2000	56.0	-8.5	67.0	-6.0	38.0	-10.8	50.0	-8.0
2001	63.7	+7.7	76.3	+9.3	46.2	+8.2	61.8	+11.8
Change from Baseline		+16.5		+20.6		+13.3		+20.3

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

b. Sixth Grade

Table 4 shows the change in the percentage of children reaching near mastery of the sixth grade mathematics curriculum, as measured on the GSAT test for that subject. Changes in student performance in NHP schools are compared to all primary schools not participating in the NHP program. As can be seen, there is significant change from 1998 to 2001. NHP children have made relatively greater gains in reaching near mastery than Jamaican primary school children as a whole, and this is true for both boys and girls. However, in the 2000-2001 school year, NHP children made smaller gains than their counterparts. Neither gender has completely made up the gap on the non-NHP population, as about 5% less NHP children of each gender has reached near mastery. The general decline in mastery levels found for the third grade from 1999 to 2000 did not occur at the near mastery level in sixth grade.

Table 4: Change in Near Mastery on GSAT Mathematics in NHP and non-NHP Schools by Gender and Year

Year	Sixth Grade Female				Sixth Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	13.9		26.5		5.5		13.8	
1999	22.2	+8.3	31.9	+5.4	8.8	+3.3	17.3	+3.5
2000	30.0	+7.8	31.8	-0.1	19.2	+10.4	22.9	+5.6
2001	32.2	+2.2	36.8	+5.0	20.6	+1.4	25.9	+3.0
Change from Baseline		+18.3		+10.3		+15.1		+12.1

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

NHP has been less successful in moving children to mastery than to near mastery. Although there has been a positive increase among NHP children of both genders in each year of

monitoring test performance, gains in the number of children reaching mastery have been lower than those of other Jamaican sixth graders. The increase in the percentage of children reaching mastery in non-NHP schools is double that in NHP schools. There is a slight decline in for all groups from 2000 to 2001.

Table 5: Change in Mastery on GSAT Mathematics in NHP and non-NHP Schools by Gender and Year

Year	Sixth Grade Female				Sixth Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	0.3		2.9		0.2		2.3	
1999	1.7	+1.4	6.9	+4	0.8	+0.6	4.0	+1.7
2000	10.9	+9.2	22.8	+15.9	5.7	+4.9	15.5	+11.5.
2001	9.8	-1.1	21.5	-1.3	5.2	-0.5	14.8	-0.7
Change from Baseline		+9.5		+18.6		+5.0		+12.5

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

The change in children at near mastery and mastery has been more than a fourth of the sixth grade primary school population, if it is assumed that all sixth graders take the GSAT. The general population has shown greater relative change in the percentage of children in the combined near-mastery/mastery group because of the greater number of children moving to mastery. The relative difference in NHP girls and the general sixth grade population has decreased from 15.2% in 1998 to 1% in 2001 and among boys from 10.4% to 4.4%. It should be noted, however, that only a quarter of NHP boys are above the near mastery level, despite these gains.

Table 6: Change in Near Mastery and Mastery on GSAT Mathematics in NHP and non-NHP Schools by Gender and Year

Year	Sixth Grade Female				Sixth Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	14.2		29.4		5.7		16.1	
1999	23.9	+9.7	38.8	+9.4	9.6	+3.9	21.3	+5.2
2000	40.9	+17.0	54.6	+15.8	24.9	+15.3	38.4	+17.1
2001	42.0	+1.1	58.3	+3.7	25.8	+0.9	40.7	+2.3
Change from Baseline		+27.8		+28.9		+20.1		+24.6

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

2. Language Arts

a. Third Grade

Tables 7, 8 and 9 show that improvement in students' mastery of third grade Language Arts curriculum has been difficult for NHP to achieve. The percentage of both NHP and non-NHP children reaching near mastery has declined from 1998. As mentioned, such a decline may be the result of a greater percentage of students reaching mastery. This appears to be the case among non-NHP third graders. As shown in Table 8, the increase in mastery levels is greater overall than the decline in near mastery for non-NHP students. This is also reflected in the combined near mastery and mastery levels, where non-NHP students show a net increase from the 1998 baseline. NHP students, on the other hand, have an increase in mastery levels from the baseline, but this does not surpass the decline in near mastery. Similarly, there is a net decrease in the combined near mastery and mastery levels for NHP students.

Table 7: Change in Near Mastery on Third Grade Diagnostic Language Arts Test in NHP and non-NHP Schools by Gender and Year

Year	Third Grade Female				Third Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	46.9		40.7		37.8		40.0	
1999	42.0	-4.9	34.6	-6.1	37.9	+0.1	34.8	-5.2
2000	42.0	0	39.0	+4.4	34.0	-3.9	37.0	+2.2
2001	36.7	-5.3	32.4	-6.6	33.3	-0.7	32.9	-4.1
Change from Baseline		-10.2		-8.3		-4.5		-7.1

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

Table 8: Change in Mastery on Third Grade Diagnostic Language Arts Test in NHP and non-NHP Schools by Gender and Year

Year	Sixth Grade Female				Sixth Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	26.2		37.7		13.5		21.9	
1999	31.1	+4.9	46.1	+8.4	16.5	+3.0	29.0	+7.1
2000	28.0	-3.1	38.0	-8.1	13.0	-3.5	23.0	-6.0
2001	32.8	+4.8	48.5	+10.5	16.9	+3.9	33.1	+10.1
Change from Baseline		+6.6		+10.8		+3.4		+11.2

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

Table 9: Change in Mastery and Near Mastery on Third Grade Diagnostic Language Arts Test in NHP and non-NHP Schools by Gender and Year

Year	Third Grade Female				Third Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	73.1		78.4		51.3		61.9	
1999	73.1	0	80.7	+2.3	54.4	+3.1	63.8	+1.9
2000	70.0	-3.1	77.0	-3.7	47.0	-7.4	60.0	-3.8
2001	69.5	-0.5	80.9	+3.9	50.2	+3.2	66.0	+6.0
Change from Baseline		-3.6		+2.5		-1.1		+4.1

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

b. Sixth Grade

Change in language arts performance at the near mastery level follows a similar trend to that for mathematics among NHP students. There are consistent gains each year and the relative gain in children reaching near mastery is greater for NHP children than for their counterparts. Boys in the general population follow a pattern similar to NHP children. Non-NHP girls, however, show an overall drop from the baseline year.

Table 10: Change in Near Mastery on GSAT Language Arts in NHP and non-NHP Schools by Gender and Year

Year	Sixth Grade Female				Sixth Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	34.2		39.6		15.2		23.5	
1999	37.3	+3.1	42.3	+2.7	17.3	+2.1	25.3	+1.8
2000	36.8	-0.5	33.7	-8.6	22.4	+5.1	25.0	-0.3
2001	38.7	+1.9	37.8	+4.1	25.6	+3.2	27.8	+2.8
Change from Baseline		+4.5		-1.8		+10.4		+4.3

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

Change in the percentage of students reaching mastery also has a similar overall trend to that found for mathematics. Greater relative numbers of non-NHP students have reached the mastery level than non-NHP students. The overall increases are, however, somewhat lower than for mathematics. This appears to be the result of something occurring in the system, during the 2000-2001 school year, as the drop in children reaching mastery was found across all groups.

This may have been the result of adjustments in the tests or testing procedures, given the consistency in the drop.

Table 11: Change in Mastery on GSAT Language Arts in NHP and non-NHP Schools by Gender and Year

Year	Sixth Grade Female				Sixth Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	8.3		20.4		2.1		8.2	
1999	9.3	+1	18.2	-2.2	1.6	-0.5	7.4	-0.8
2000	26.6	+17.3	39.3	+21.1	12.6	+11.0	24.6	+17.2
2001	18.6	-8.0	33.7	-5.6	8.4	-4.2	20.2	-4.4
Change from Baseline		+10.3		+13.3		+6.3		+12.0

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

As shown in Table 12, NHP children of both genders have had greater overall relative gains in reaching near mastery or mastery than the remaining sixth grade population. However, there has not been the same success in closing the original gap between NHP students and the general population in language arts as was found in mathematics. The difference in the relative combined change goes from 17.5% among girls in 1998 to 14.2% in 2001. Among boys, the gap goes from 14.4% to 14%. The negative change found in children reaching mastery in 2000-2001 is reflected in the relative drops in the combined percentages across all groups.

Table 12: Change in Near Mastery and Mastery on GSAT Language Arts in NHP and non-NHP Schools by Gender and Year

Year	Sixth Grade Female				Sixth Grade Male			
	NHP	Change by Year	Non-NHP	Change by Year	NHP	Change by Year	Non-NHP	Change by Year
1998	42.5		60.0		17.3		31.7	
1999	46.6	+4.1	60.5	+0.5	19.9	+2.6	32.7	+1.0
2000	63.4	+16.8	73.0	+12.5	35.0	+15.1	49.6	+16.9
2001	57.3	-6.1	71.5	-1.5	34.0	-1.0	48.0	-1.6
Change from Baseline		+14.8		+11.5		+16.7		+16.3

Source: NAP 1998 and 1999 database, Student assessment Unit 2000 and 2001 database

In order to examine possible reasons for the decline in mastery, means scores and standard deviations were examined for the four GSAT application years. As can be seen from Table 13, after three years of mean gains, scores decline abruptly in 2001. As the student assessment unit stated that tests were very similar, an explanation for lower scores would be that more children who scored at the lower end took the test in 2001. This is possible since students

are only allowed to take the GSAT once and as parents this fact more children are likely to take the test. As 1000-2000 more children took the test in 2001, and standard deviations are somewhat larger, a greater dispersion of scores may be somewhat responsible for the lower overall mean scores, and decreases in mastery levels.

Table 13: GSAT Means and Standard Deviations 1998-2001

Year/Stats	1998				1999				2000				2001			
	Maths		L. Arts		Maths		L. Arts		Maths		L. Arts		Maths		L. Arts	
NHP	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Mean	33.2	26.4	46.6	34.7	39.1	32.4	48.1	35.5	45.6	37.8	57.8	44.9	46.1	37.6	53.5	41.8
N	1780	1804	1737	1819	1810	1609	1809	1614	1790	1727	1788	1728	1928	2059	1928	2059
SD	14.7	13.0	19.1	15.7	15.3	12.5	19.2	16.0	20.6	19.2	21.1	20.7	21.4	20.1	22.2	21.5
Non-NHP	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Mean	40.7	33.8	55.6	42.4	45.9	38.1	55.2	42.2	53.4	45.4	64.5	52.4	55.1	46.2	62.5	50.1
N	20618	17737	20685	17863	19034	17137	19029	17131	21499	20029	21506	20029	22371	21530	22371	21530
SD	17.0	16.4	20.7	19.8	17.9	16.8	20.2	19.7	22.9	23.3	21.7	23.3	22.9	23.9	23.0	24.9

B. Teaching Quality

Teaching quality was measured through an index made up of three generally accepted standards for determining teacher performance: content knowledge of students; environment for student learning; and teaching for student learning. The first of these dimensions has been discussed in the previous section. Third grade performance, measured as the percentage of NHP children reaching near mastery and mastery over all NHP children taking the third grade diagnostic tests was used as the measure of content knowledge. Both mathematics and language arts performance are used in the index.

Learning environment standards relate to the social and emotional components of learning as prerequisites to and context for academic achievement. Thus, the focus is on the physical setting created by the teacher and the resources available. A six-item scale, dealing with the fostering of a positive self-concept, the creation of a nurturing environment that supports gender equity, and the organization of space and materials to allow a variety of learning opportunities, was used to measure the quality of the environment (See Appendix B: Instruments for copies of all research tools). Researchers used the assessment instrument after a complete series of observations in a classroom. Specific criteria were provided with each item to ground the ratings. Ratings were made on a three-point scale of "not met," "partially met," and "fully met". Thus, scores ranged between a minimum of six and a maximum of 18. Scores were expressed as a ratio of the actual score over the total possible score.

Table 14 compares the classroom environment scores for 1999, 2000 and 2001. There has been and improvement each year. This improvement is likely related to the implementation of the new curriculum in NHP schools, as the new curriculum emphasizes changing the classroom environment. At least a 14% improvement in scores was found for each type of school. This improvement is reflected in the 17% increase for the NHP sample as a whole. Classrooms generally met criteria of lack of physical punishment and interacting with individual children often. Equal lighting, ventilation, and furniture for boys and girls were also generally

met, and there was an increase in displaying children's work. Other criteria such as creating a variety of learning opportunities within the classroom, encouraging children to express themselves with peers and adults, using materials that showed males and females in traditional and non-traditional roles, were usually not met. In many of the classrooms, especially those in larger schools, the lack of space contributed to a less than optimal classroom environment. Children in these classrooms usually were wedged tightly into desks and the only space for displaying materials were blackboards that served as partitions between classrooms.

Table 14: Mean Classroom Environment Scores by School Size

Mean/School Size	1999	2000	2001
Small	.5929	.6389	.7350
Medium	.5900	.6588	.7359
Large	.4867	.5490	.7080
Total	.5464	.6115	.7218

Teaching for student learning is concerned with the act of teaching and its overall goal of helping students understand the content that they are imparting and the ability to present the content in a manner that is consistent with the knowledge, interests and abilities of the students. For the purposes of monitoring, the focus has been on interactions in the classroom between teachers and students. Student-initiated interactions were taken as an indicator; as such interactions show teachers' willingness to recognize student input. Student-initiated were found to be a very low percentage of all interactions in teacher-centered classrooms. As mentioned, a corpus of 40 minutes of observations of academic lessons was collected in each classroom. These observations were divided equally between mathematics lessons and language arts lessons.

Table 15 presents the percentage of observed interactions initiated by teachers and students in the normally occurring contexts of the classroom in 1999, 2000, and 2001. The table shows the percentage of interactions initiated by each actor in the contexts observed taking place in the classroom. The bottom row provides the overall percentage of interactions initiated by teachers, boys, and girls. Teacher-initiated interactions predominate in both years. They make up at least 88.7% of all interactions. Student-initiated interactions increased somewhat from 1999 to 2000, but decreased in 2001. This suggests that there has been little progress in changing the pedagogy employed by NHP teachers, as teaching strategies remain centered on the teacher initiating learning opportunities for children. Little difference is noted by the gender of the students, as both boys and girls initiate interactions with similar frequency.

In 2000, members of USAID and the PIU expressed the hypothesis that there was little change in student-initiated interactions because students were intimidated by observers of a different ethnicity than themselves. In order to test that hypothesis, local researchers, of the same ethnicity as the children, were trained to collect the observational data. Despite this change, the trends are almost identical for all three years, confirming that the data show teacher-centered pedagogical approaches throughout the NHP schools, rather than researcher effects.

Table 15: Interactions Initiated by Teachers and Students

	Interaction Initiator		
	Teacher	**Boy**	**Girl**
1999	92.5%	3.8%	3.6%
2000	88.7%	5.2%	6.1%
2001	90.1%	3.6%	4.9%

Table 16 shows the types of contexts in which the interactions occurred. As can be seen there has been very little change in the contexts in which the majority of interactions between students and teachers takes place. The traditional context of a large group in which the teacher works with the entire class is the principal instructional principal change in is in the types of contexts in which the majority of interactions occur. This is followed by seatwork in which children work individually at their desks and the teacher circulates among them or carries out other work at his or her desk.

The two contexts that are indicative of student participation and a decentralization of learning are the small group contexts. As shown in Table 9, these contexts make up a very small total of lessons. In fact, student led learning activities are almost non-existent. As would be expected, the participation in these contexts is very similar for girls and boys.

Table 16: Interactions by Classroom Context

Classroom Context	**1999**	**2000**	**2001**
Teacher-led small group	9.2%	2.4%	7.3%
Student-led small group	2.1%	.3%	.5%
Large group	49.2%	75.5%	65.2%
Seatwork	34.4%	19.4%	23.9%
No instruction	5.1%	2.5%	3.2%

C. Teaching Skills

Several indicators of teaching skill are important to the NHP project. Obviously, the ability to effectively create an environment that instills self-confidence in students and allows them multiple learning opportunities, discussed previously under teaching quality, is related to pedagogical ability. The focus here is on specific behaviors engaged in by teachers that encourage children to participate in the learning process. Included are: the quality of teacher-student interactions and the use of materials by students; teachers' mastery of and commitment to the interventions introduced by NHP; and teachers' strategies for encouraging student participation through regular attendance.

Quality of teacher-student interactions. Teachers' ability to impart information and encourage inquiry rests largely with the types of verbal and non-verbal interactions that they use to engage students. To be effective, such interactions create situations that allow students to

apply their knowledge and not merely memorize facts. Teachers must also monitor learning to make certain that students assimilate information accurately and can use what they have learned. Permitting students to expand ideas together with providing feedback and explanation as needed are generally considered manifestations of these skills.

The structured observations of mathematics and language arts, described previously, were used to collect data on the quality of student-teacher interactions. The percentage of all interactions that involved explanation and feedback was used as the measure of teaching skill. As shown in Table 17, teachers provided relatively little explanation or expansion of ideas. This type of behavior was found in only 13.4% of all interactions in 1999, 7.3% of such interactions in 2000 and 17.1% of the interactions observed in 2001. Feedback in the form of either praise shows a positive increase in each year. Feedback through punishment was similar for the three years, but shows a slight increase in 2001.

Table 17: Quality of Interactions

Context/Interaction	1999	2000	2001
Questions	37.3%	64.1%	48.3%
Expands	13.4%	7.3%	17.1%
Orders	40.6%	30.3%	38.5%
Dictates/Lectures	20.3%	18.1%	9.2%
Reinforces	2.9%	3.3%	8.2%
Punishes	1.5%	1.3%	3.2%

Use of materials. A principal focus of the project is on improving the availability and use of instructional materials. Both texts and supplementary instructional materials provide children with a channel for interacting with academic content on an ongoing basis. Often, however, it is assumed that children have books available and that teachers are trained in using instructional materials effectively. Teachers may lack practical experience in using texts and when working in a development situation may face overcrowded classrooms, children without books and little in alternative instructional resources. Thus, they resort to extensive lecture and use of the chalkboard. The purpose of this indicator is to confirm the provision of sufficient supplementary materials to classrooms of project schools to enrich the teaching and learning of literacy and numeracy. However, availability of materials alone is not an adequate measure, as students must use materials in order to enhance academic achievement.

Use of materials was measured by three visual sweeps of the classroom during both mathematics and language arts lessons. During the sweeps, the number of available books and supplementary instructional materials and manipulatives were counted separately then the number actually in use was noted. The average number of materials available per child, as well as the average number of materials in use was calculated.

As shown in Table 18, both mathematics texts and supplementary materials such as manipulatives, and reading materials increased in the classrooms. This was in part due to the supplementary materials provided by NHP, which were present in a number of sample

classrooms. However, in several schools these materials were found stored in the teacher's office rather than present in classrooms. The availability of reading materials increased to the extent that almost a text per child, on the average, were observed to be readily available in the sample classrooms.

Table 18: Availability and Use of Texts and Other Learning Materials

Subject	Availability			Use		
	1999	2000	2001	1999	2000	2001
Math	.20	.40	.54	.25	.13	.18
Reading	.40	.90	.91	.27	.20	.13

The use of materials had, however, declined somewhat over the three years of study. Only about two children in ten were observed to use math materials, whereas one child in ten used reading materials during the 2001 observations. The decrease in use of materials may be a result of teachers' lack of familiarity with the new materials.

Mastery of the intervention. There is consensus in the international literature on educational innovation that mastery of new instructional approaches by teachers is a critical factor in adoption and sustainability. As NHP interventions were not yet in place when the formative evaluation was initiated in 1999, mastery was measured by asking teachers about the general objectives of the program. A second factor closely associated with mastery of the innovation is commitment to the new approach. This aspect of teaching skill was measured through a series of hypothetical questions in the teacher interview on circumstances that might deter a teacher from using an approach.

Table 19: Teacher Support of NHP

Year/Teacher Response	1999	2000	2001
Knowledge of NHP	36%	52%	72%
Use of Incentives	57%	70%	72%

Teacher mastery has improved each year of the project. In 2000, teachers were able to identify 28% of the major objectives of NHP as compared to an average of 12% in 1999. In 2001, all of the elements were identified. However, the increased understanding of the program appears to be tied to the dual implementation of the NHP innovations and the new national primary curriculum in NHP schools. Most of the teachers identified elements that the programs have in common, whereas only about 20% of the sample teachers were able to identify elements unique to the NHP program such as a focus on less successful children, and strategies of mixed skill and age groupings aimed at increasing the participation of these children. Commitment to combined emphasis of the two programs was strong, with 85% of the teachers in 2000 and 100% of the teacher in 2001, stating that they would continue to use what they had learned even if the program were discontinued.

Strategies for encouraging attendance. The purpose of this indicator is to measure the extent to which project activities impact absenteeism rates among students. Attendance was examined by student gender, as male attendance is traditionally lower than female attendance throughout the country. As official school attendance may run the risk of inflation or deflation, a correction factor of observed attendance recorded by the evaluation team was built into the measure. The key to the success of incentive programs will be their integration with the teaching-learning process; thus, classroom teachers are the appropriate source of information about incentives. Teachers were asked to list all of those incentives that they were using in their classrooms.

There was an increase in the percentage of teachers using incentive strategies. In 1999, half of the teachers interviewed stated that they used incentives to increase attendance. In 2000, 70% of the sample described strategies used to encourage students to come to school. In 2001, 72% of the sample identified the incentives.

D. School Visits by NHP Specialists

In order to examine the impact of working directly at the school level, NHP records on specialists' visits to schools and the activities carried out as part of the NHP site-based technical assistance strategy were incorporated into the analysis. Table 20 shows the activities carried out by the specialists in providing more than 1000 hours of technical assistance in schools. As can be seen, the majority of the specialists' time was spent in observing classes.

Table 20: NHP Schools- Specialists Activities

Activity	Total
Visits to school	227
Number of visitors from NHP	350
Number of Classrooms Observed	777
Number of Demonstration Lessons Given	231
Number of teachers with portfolios	710
Number of man hours spent in schools	1069

Specialists' monitoring of their activities in schools was consistent with the recollection that teachers had of the specialists' work. As shown in Table 21, over 90% of the teachers identified observing teaching as an activity carried out by the NHP specialists. As this was a multi-response question, some teachers also identified training, and demonstration activities.

Table 21: Teachers' Recollection of NHP Specialists' Activities 2001

Activity	Number	Percent
Observe Teaching	29	90.6
Didactic Training	8	24
Demonstrate New Materials	2	6.3
Demonstrate New Teaching Methods	8	24
Other Activities	5	15.6

In order to examine the impact of the visits, the individual activities at the school level were correlated with student performance on the GSAT. As can be seen in Table 22, there was very little relationship between the activities and student performance. In fact, most correlations are near zero. The lack of any significant relationship is similar for the performance of both boys and girls.

This may be a result of relatively few hours spent in each school. On the average, about 15 person hours were spent in each school. Thus, approximately two days of on-site technical assistance during a school year may not be sufficient to have an impact on student performance. The nature of the activities also may have contributed to the lack of impact. The focus on observing classes, may not have provided teachers and resource personnel with the type of hands-on support needed to improve instructional strategies, as appears clear from the lack of change found in teaching quality.

Table 22: Correlations of Changes in the Levels of Mastery—2000-2001 with NHP Specialist Activities in Schools

Gender Subject	Mastery Level	Pearson Correlation	E	F	G	H	I	AMH	REG	JA	JB	JC	L	M	N
Girls Maths	No Mastery	Correlation	0.009	-0.040	0.019	0.028	0.014	-0.043	-0.130	-0.032	-0.044	0.045	0.191	0.118	0.046
		Sig. (2-tailed)	0.938	0.741	0.874	0.814	0.906	0.721	0.279	0.788	0.714	0.708	0.110	0.328	0.702
	Near mastery	Correlation	0.049	0.117	0.129	0.081	0.058	0.125	0.183	0.129	0.108	0.011	-0.173	-0.025	0.014
		Sig. (2-tailed)	0.687	0.329	0.285	0.503	0.629	0.298	0.127	0.282	0.371	0.928	0.149	0.837	0.907
	Mastery	Correlation	-0.032	-0.047	-0.125	-0.086	-0.047	-0.040	-0.051	-0.046	-0.008	-0.014	0.034	0.034	-0.066
		Sig. (2-tailed)	0.788	0.699	0.301	0.475	0.699	0.740	0.671	0.702	0.950	0.911	0.776	0.776	0.584
Girls Language Arts	No Mastery	Correlation	0.030	-0.059	-0.047	0.029	0.022	-0.088	-0.228	-0.155	-0.065	0.066	-0.035	-0.051	-0.212
		Sig. (2-tailed)	0.805	0.628	0.695	0.813	0.853	0.466	0.056	0.196	0.592	0.584	0.770	0.674	0.075
	Near mastery	Correlation	-0.029	0.036	0.131	-0.013	-0.028	0.057	0.243	0.230	0.079	-0.033	0.096	0.124	0.183
		Sig. (2-tailed)	0.813	0.768	0.276	0.913	0.815	0.634	0.041	0.053	0.512	0.784	0.425	0.304	0.128
	Mastery	Correlation	0.057	0.102	-0.013	0.062	0.073	0.122	0.004	-0.010	0.067	0.028	-0.051	0.052	0.041
		Sig. (2-tailed)	0.640	0.397	0.913	0.607	0.544	0.311	0.973	0.937	0.580	0.818	0.671	0.667	0.732
Boys Maths	No Mastery	Correlation	-0.006	0.020	-0.035	-0.071	-0.012	-0.005	-0.036	0.034	-0.093	0.047	-0.060	-0.013	-0.050
		Sig. (2-tailed)	0.959	0.870	0.775	0.559	0.920	0.967	0.763	0.781	0.439	0.696	0.620	0.914	0.678
	Near mastery	Correlation	0.048	0.018	0.116	0.098	0.033	-0.084	0.069	0.045	0.091	-0.030	-0.018	0.091	0.084
		Sig. (2-tailed)	0.692	0.884	0.337	0.418	0.785	0.488	0.565	0.707	0.449	0.802	0.884	0.452	0.486
	Mastery	Correlation	-0.086	-0.079	-0.165	-0.049	-0.042	0.185	-0.065	-0.167	0.013	-0.040	0.167	-0.160	-0.065
		Sig. (2-tailed)	0.478	0.510	0.169	0.683	0.730	0.123	0.591	0.163	0.912	0.744	0.165	0.183	0.588
Boys Language Arts	No Mastery	Correlation	0.092	0.125	-0.033	0.020	0.061	-0.071	0.023	0.048	-0.037	0.111	-0.211	-0.165	-0.112
		Sig. (2-tailed)	0.446	0.299	0.783	0.868	0.611	0.559	0.849	0.691	0.761	0.358	0.078	0.170	0.354
	Near mastery	Correlation	-0.019	-0.065	0.134	0.048	-0.007	0.028	0.090	0.054	0.103	-0.061	0.196	0.228	0.134
		Sig. (2-tailed)	0.876	0.592	0.266	0.690	0.955	0.814	0.453	0.653	0.393	0.613	0.102	0.056	0.264
	Mastery	Correlation	-0.128	-0.113	-0.151	-0.109	-0.094	0.076	-0.180	-0.166	-0.097	-0.094	0.056	-0.072	-0.018
		Sig. (2-tailed)	0.288	0.349	0.209	0.365	0.434	0.527	0.134	0.166	0.421	0.434	0.644	0.550	0.880

Table Key

E Number of visitors from NHP
F Number of classrooms observed (yellow form)
G Number of demonstration lessons given
H Number of teachers with portfolios
I Number of man hours spent in school
AMH Average Man Hours
REG
Ja Reciprocal teaching
Jb Student centred teaching
Jc Classes with students having portfolios or journals
Km MRT(s) has/have had development sessions (Y or N)
Kl LART(s) has/have had development sessions (Y or N)
L Quality of leadership in school – see Likert scale
M Quality of MRT(s) in school – see Likert scale
N Quality of LRT(s) in school – see Likert scale

Likert Scale:
5 – Excellent 4 – Good 3 – Satisfactory 2 – Weak 1 – Poor U – unable to make a judgment

E. System Support

In order to improve the success of children, teachers must be supported by an infrastructure at the school and national level. This includes support for professional development that will contribute to successful teaching and learning, effective management of the local learning institution, to ensure that teachers can focus on teaching, and participation of community members in the education of their children.

1. Professional Development.

Training to upgrade skills and knowledge is one of the main ways that a school system provides support for teachers. Such training can come about through in-service courses and workshops or through interaction with colleagues who have specialized knowledge in a particular subject area such as mathematics or language arts. This indicator establishes the number of teachers that have engaged in professional development activities as a consequence of their participation in New Horizons. The indicator takes into account training in Jamaica and abroad. Schools with resource teachers are also used as an indicator. All professional development activities are coordinated with the Professional Development Unit of the MOEC.

As shown in Table 23, at the time of the initial formative evaluation data collection, no teacher had participated in training offered through the New Horizons project. By the end of the 1999-2000 school year, 85% of sample teachers stated that they had participated in such training. Similarly, the availability of resource teachers had risen from 15% in 1998-1999 to 94% of schools in 1999-2000. In 2001, all teachers had participated in workshops and all had resource teachers.

Table 23: NHP Professional Development

Professional Development/Year	1999	2000	2001
Teachers participate in Workshops	0	85%	100%
Schools with Resource Teachers	15%	94%	100%

2. School Management

Tracking of school resources and students is an important function of school management. Such tracking should be undertaken within a framework of specific objectives and activities. Thus, the utilization of school management plans in regard to NHP activities together with the utilization of the computer and accompanying administrative software, which can speed principals' decision-making and ease reporting burdens, are the indicators of effective school management. Effectiveness of school boards is an additional indicator of school management. Measures for this aspect of management will be developed by the NCE.

As part of the NHP program, principals were asked to design development plans taking into consideration school needs, teacher training, curriculum design and parent/community involvement, especially as related to improving student literacy and numeracy. Among sample principals, 30% had completed this task at the time of 1999 formative evaluation data collection. Since most of those interviewed mentioned progress in completing the plans, it was expected that the number would increase rapidly. As can be seen from Table 24, all principals were implementing their development plans by May of 2000.

Given that all schools had school development plans, a new indicator that was sensitive to implementation of the plan, as related to the objectives of NHP was developed. This indicator was a weighted index that examined if schools were implementing activities in the SDPs related to literacy and numeracy or other activities. The aggregate position of schools on the index was .52 in 2001.

Table 24: NHP School Management

Professional Development/Year	**1999**	**2000**	**2001**
School Development Plan	30%	100%	100%
Computer present	25%	68%	100%
Computer used for administration	0	20%	61%

The percentage of schools with computers increased each year and all NHP schools had computers in 2001. Ninety-four percent of the principals said that they had received a computer from NHP. With the training provided by NHP, the use of computers for administration increased by 41%. However, 39% of the principals do not use their computers for administrative purposes, suggesting that targeted training is needed in these schools to ensure that consistent administrative decision-making and reporting will take place.

NHP staff members hypothesized that the status of a principal might influence the effectiveness of a school's efforts at implementing NHP interventions. In order to partially test this hypothesis, the percentage of children attaining near mastery or mastery on the 2001 GSAT was examined for permanent principals compared to those with other designations. As can be seen from Tables 25 and 26, there is a small but consistent trend favoring permanent principals in Mathematics. The trend also exists for boys in language arts. However, the data must be interpreted with caution owing to the small number of principals with "other" designations.

Table 25: Mathematics Mastery Levels on GSAT by School Principal Designation

Mastery Level/Principal	No Mastery Maths		Near Mastery Maths		Mastery Maths	
	Girls	Boys	Girls	Boys	Girls	Boys
Permanent (14)	55%	69%	32%	24%	13%	7%
Other (4)	63%	75%	26%	20%	11%	5%

Table 26: Language Arts Mastery Levels on GSAT by School Principal Designation

Mastery Level/Principal	No Mastery Maths		Near Mastery Maths		Mastery Maths	
	Girls	Boys	Girls	Boys	Girls	Boys
Permanent (14)	37%	62%	38%	22%	25%	16%
Other (4)	38%	67%	38%	18%	24%	15%

3. Community Involvement

The body of research on parent participation shows positive effects brought about by parental emphasis on literacy and other achievement in the home. As the focus of the project is on improved student learning, parental participation in learning is measured. In addition, parental participation in management is important to assure that schooling is relevant to community interests. Thus, the presence of parent-teacher associations and the frequency of their meetings are other indicators monitored through formative evaluation. Other indicators, such as the number of schools with parent participation programs and training for parent and community leaders, will be monitored in partnership with the NCE.

Samples of NHP students were asked about parental involvement in their studies. In 1999, these interviews were conducted as part of the NHP school survey, whereas in 2000 and 2001, data were collected as part of the formative evaluation. Table 27 shows that there has been a slight increase each year in the number of students who stated that either their father or their mother assisted them in their reading. However, when all family members are considered, 94% of the children who said that they read at home do so with a family member.

Table 27: NHP Community Involvement

Year	**1999**	**2000**	**2001**
Parent Participation in Learning	36%	42%	54%
PTA present	89%	100%	100%
PTA meets regularly	33%	94%	94%

Eighty-nine percent of the NHP schools had PTAs in 1999. However, only 33% meet on a regular monthly schedule. In 2000 and 2001, all of the schools had PTAs and almost all were meeting regularly.

III. CONCLUSIONS AND IMPLICATIONS

The purpose of the study was to assess the progress made by the New Horizons in implementing activities that will lead to increased numeracy and literacy for students who have had limited success in school. The comparisons made from the baseline year of 1998, or in the case of the qualitative data 1999, with the results of the formative evaluation in 2000 and 2001, allow certain conclusions and implications to be drawn that can help to guide further implementation of the program.

A. Conclusions

NHP has been most successful in improving the mastery levels of Language Arts among students in the upper primary grades. NHP students have improved over the baseline in1998 and made progress in reducing the gap in performance between themselves and non-NHP schools in Language Arts.

The percentage of NHP students reaching at least near mastery on the Language Arts GSAT increased 14.8% for girls and 16.7% for boys from the 1998 baseline to 2001. This compares to increases of 11.5% for girls and 16.3% for boys in non-NHP schools. The progress is a result of an increase of the students moving from no mastery to near mastery, where NHP gains were at least 6% greater than non-NHP schools.

NHP has been less successful in improving mastery levels of sixth grade students in Mathematics.

The percentage of NHP students reaching at least near mastery has risen by 24.8% for girls and 20.2% for boys in Mathematics. However, the changes were not as great as those of 28.8% for girls and 24.6% for boys in non-NHP schools. Thus, despite greater relative gains than in Language Arts, the initial gap between NHP schools and other Jamaican primary schools has not been closed. Again, NHP schools had higher percentage change in the near mastery category than did non-NHP schools, but did not decrease the gap in students reaching mastery.

Despite positive gains, the percentage of NHP students who master the curriculum is low. This low success rate was exacerbated by poor performance of the entire primary system in 2001.

Only about one-third of NHP girls and one-fourth of boys exhibit even near mastery on the GSAT. Further, there was a decrease in performance for the system as a whole from 2000 to 2001. In both NHP and non-NHP schools, the percentage of children reaching mastery in Language Arts declined by at least 4.2% from the previous year. In Mathematics, the decline was 0.5%, of more. The decrease is unexplained, as the tests were similar and although more children took the tests in 2001, standard deviations on the mean scores decreased. This suggests that the increase in participants did not skew the distribution of scores to a greater extent than in the previous year.

The first three grades of primary school have been the most difficult for NHP to improve children's performance in Mathematics, and especially Language Arts.

Children in the third grade curriculum in NHP schools, most of who have participated in the three years of NHP program implementation, have lower combined near mastery and mastery levels than non-NHP third graders. Whereas there has been a percentage increase in Mathematics from the 1998 baseline for both boys (+13.5%) and girls (+16.5), these increases are less than the 20.6% increase for girls and the 20.3% increase for boys in non-NHP schools. In Language Arts, NHP third graders have had a decrease in the combined near mastery and mastery levels of -3.6% for girls and –1.1% for boys. Non-NHP schools, on the other hand, have had positive increases.

NHP has been successful in changing classroom environments so that they are organized to facilitate learning.

Classroom environments improved each year in NHP schools. Children's work was displayed to a greater extent, teachers were positive when interacting with students, and in many classrooms, there was an improvement in the organization of space.

The participatory, child-center classroom approaches, emphasized by the NHP program, have generally not been implemented in NHP classrooms.

Instructional delivery in NHP schools remains highly traditional. Teachers initiate more than 90% of the interactions with children, allowing little opportunity for self-expression or expansion of ideas. The majority of instruction takes place in teacher-directed large group or seatwork contexts. Small group work is the context for less than 8% of all interactions, and small groups led by students are almost non-existent.

NHP has been highly successful in providing ancillary learning materials to schools. However, such materials are under-utilized in the classrooms.

In1999, the number of materials observed in the classroom was sufficient for only about 20% of the students. In 2001, there are sufficient reading materials for 90% of the students, and mathematics materials for over half of the students readily observable. During lessons, such materials were actually used by less that 20% of the students.

The concentrated effort by NHP to provide hands-on professional development and other technical assistance at the school level has yet to show an impact on student performance or teacher behavior. This may be a result of the types of activities engaged in by the NHP professionals when making school visits.

The number, type, and level of effort of activities carried out by NHP professionals in individual schools were correlated with the change in mastery levels for each school from 2000 to 2001. No significant correlations were found. This may be the result of the

types of activities engaged in by the professionals. More than 70% of the time was spent in observing classes and providing feedback, rather than demonstration and training.

At the school level, NHP has been successful in creating an environment to support improved learning of Mathematics and Language Arts.

Every indicator of system support has had a positive change from the 1999 baseline year. All schools have school development plans and PTAs that meet regularly. One hundred percent of the teachers have participated in professional development activities and all of the schools have resource teachers. All schools have administrative computers and two-thirds of them are being used to support administrative procedures.

B. Implications

It might be argued that improving children's performance in schools serving those students who have had the least success in school, because of poverty and other factors, is more difficult than improving the success of more fortunate children. However, such improvement is the objective of NHP and measuring NHP students' progress against non-NHP schools is the only way to know that the gains found are the result of the NHP program and not simply general improvement of the Jamaica primary school system. Thus, the clearest case of NHP impact is for Language Arts in the upper grades, as measured by mastery levels on the GSAT. As the same trend is not found for third grade, it is likely that NHP is providing interventions for upper grade Language Arts that are different than for the earlier grades. NHP specialists should review their activities to determine interventions that are contributing to improved Language Arts performance and examine the applicability of such strategies to earlier grades, and perhaps to Mathematics. One possibility is that greater use is being made of ancillary reading materials provided by the project.

NHP teachers' lack of use of the participatory, child-centered methodologies, espoused by NHP and the new primary curriculum argues for a change in the professional development strategies employed by the NHP project. NHP specialists have focused on a "training of trainers" and clinical supervision, focused primarily on resource teachers. More direct demonstration and modeling with teachers when specialists visit the schools may be necessary to change classroom behavior. Given the small number of NHP professional staff, their expertise may have to be supplemented by additional subject matter or pedagogical specialists.

The administrative infrastructure for improvement in learning appears to be in place and is an important achievement of the NHP project. Given the limited improvement in student performance, however, may require special training for teachers and administrators to make diagnosis of student performance and planning of strategies that will enhance student abilities in Mathematics and Language Arts and explicit part pf the administrative process.

The results suggest that Jamaican primary education is not yet producing the types of graduates that the society desires. Although there have been improvements in the percentage of sixth grade students with mastery of the curriculum, less than 35% have mastered the language Arts curriculum and fewer than 20% the Mathematics curriculum. The monitoring carried out under the formative evaluation has coincided not only with the implementation of NHP but also with the launching of a new primary school curriculum. It may be that when the curriculum is fully implemented in all schools, that improvement in student performance will be accelerated.

Appendix A:

Indicators and Measures

INDICATORS AND MEASURES- NHP FORMATIVE EVALUATION

Strategic Objective: Increased Literacy and Numeracy Among Targeted Jamaican Youth

Performance Indicators:

- Language Arts scores- grades 3 and 6
- Mathematics scores- grades 3 and 6

Measures:

- % of students in grades 3 through 6 of NHP schools meeting near mastery criteria in Language Arts
- % of students in grades 3 through 6 of NHP schools meeting near mastery criteria in Mathematics

Intermediate Result 1: Improved Quality of Teaching

Performance Indicator: Index of teacher quality

Measure: Composite of the three basic components of teacher performance, including 1) content knowledge of students (number of students reaching near mastery in math and language arts over all students at a grade level); 2) classroom learning environment (measured on a classroom environment scale); and 3) teaching for learning (percentage of student initiated interactions) aggregated across sample classrooms, expressed as a value between 0 (minimum) and 1(maximum). Scores on these dimensions have been averaged as an overall index:

$(NML_{py} + NMM_{py} + CE + SI) \div 4$ where

NML_{py} = Percent of all third grade students reaching near mastery in language arts in the previous year

NMM_{py} = Percent of students reaching near mastery in mathematics in the previous year

CE = Average score of sample classrooms on classroom environment scale

SI = Percent of student-initiated interactions over the expected frequency of such interactions averaged across sample classrooms.

Lower Level Intermediate Results 1.1: Improved teaching-skills competency

Performance Indicator: Quality of teacher-student interactions

Measure: Number of interactions involving expansion and feedback divided by the total number of observed interactions between teachers and students.

Lower Level Intermediate Result 1.2: Improved knowledge of subject matter

Performance Indicator: Teacher mastery of intervention principles

Measure: Number of teachers who identify the principles of a given intervention divided by the total number of teachers in a sample who are employing the intervention.

Lower Level Intermediate Results 1.1a and 1.2a: Professional development program

Performance Indicator: Professional development program functioning

Measure:

- Number of teachers who have participated in training divided by total number of NHP teachers
- Number of NHP schools with resource teachers divided by all NHP schools

Lower Level Intermediate Result 1.3: Improved instructional materials

Performance Indicator: Utilization of instructional materials

Measure:

- Average number of instructional materials available per student in classrooms
- Average number of students utilizing materials divided by the total number of students present

Intermediate Level Result 2: Increased student attendance

Performance Indicators: Number of enrolled students in project schools attending classes

Measure: Average number of students attending class on a given day, divided by the number of students enrolled in sample schools, corrected for observed attendance, disaggregated by gender.

Lower Level Intermediate Result 2.1 : Special incentives program implemented

Performance Indicator: Special incentive programs functioning in classrooms

Measure: Number of sample teachers identifying incentive programs in their classrooms divided by all teachers in the sample.

Lower Level Intermediate Result 2.2: Improved school/parent/community involvement

***Performance Indicators*: Parents assist students with academic studies**

Measure: Number of students stating that parents assist with reading/math divided by the total sample of students.

Lower Level Intermediate Result 2.2.1: PTAs effectively functioning

Performance Indicators: PTA=s meet regularly

Measure: Number of schools with PTAs adhering to a regular schedule of meetings divided by all NHP schools.

First Level Intermediate Result 3: Improved management of schools

Performance Indicators: Management plans in place

Measure: Number of schools with school development plans divided by all NHP schools

Lower Level Intermediate Result 3.2: Effective School Principals and Administrators

Performance Indicators: School administrators utilizing computer assisted management procedures

Measure: Number of principals using computers for school administration divided by all NHP principals

Appendix B:

USAID Reporting Tables

Performance Monitoring Plan
Fiscal Year FY2003

Strategic Objective: Increased literacy and numeracy among targeted Jamaican youth
Intermediate Result: SO Level 532-004

A. Description
Precise Definition: Percentage of students meeting near mastery in grade 6 of New Horizons schools.
Unit of Measure: Number of grade 6 NHP students meeting the criterion of near mastery/mastery on GSAT divided by all grade 6 NHP students.

Disaggregated By: Gender, grade level and program (NHP; non-NHP)
Management Utility: Project impact on language arts performance, allows comparison with national average. This is important for determining the impact of NHP interventions in relation to overall system improvement, over the life of the project.

B. Plan for Data Collection
Indicator: NHP grade 6 boys' GSAT Language Arts scores
Source: Student test data from Student Assessment Unit
Data Collection: Yearly
Est. Cost of Collection: N/A
Responsible Organization: Institutional contractor's Chief of Party and formative evaluation team

C. Plan for Data Analysis, Reporting, Review
Data Analysis: Manipulate Student Assessment Unit database to separate NHP and non-NHP students by gender and mastery levels on GSAT (50% correct= near mastery; 75% correct=mastery) divide by total number for each group, calculate percentage change from 1998 baseline and by year.
Presentation of Data: Combined percentage of near mastery and mastery in Tables of planned and actual improvement by year.
Review of Data: Review is performed by the institutional contractor, SO team's annual portfolio review, and other stakeholders
Reporting of Data: Annual performance reports and highlighted tables and narrative of R4

D. Data Quality Issues
Initial Data Qual/Assess: The criteria used to designate near mastery and mastery with the third grade diagnostic tests is used. Using these criteria, at the time of establishing the baseline and targets, over 80% of the grade 6 boys were in the "no mastery" group in Language Arts.
Known Data Limitations: The Student Assessment Unit does not designate mastery levels for sixth grade GSAT. Therefore, the third grade criteria of 50% and 75% for near mastery and mastery, respectively are used in determining student progress.
Actions Addressing Limits: The latest available data will be used.

E. Performance Data Table
Method of Calculations: NHP and non-NHP students separated by gender and mastery levels then divided by total number of NHP and non-NHP GSAT scores for each gender.
Key to Table: No key, the table is easily interpreted
Baseline & Target Notes:

Year	Planned	Actual
1998		17.0
1999	19.0	20.0
2000	22.0	35.0
2001	25.0	34.0
2002	30.0	
2003	35.0	

F. Other
Comments: The slight decline is consistent with a decline for the system as a whole. This decline is likely related to an increased number of students, who were formerly held back, taking the GSAT and scoring in the "no mastery" level.

Performance Monitoring Plan
Fiscal Year FY2003

Strategic Objective: Increased literacy and numeracy among targeted Jamaican youth
Intermediate Result: SO Level 532-004

A. Description
Precise Definition: Percentage of students meeting near mastery in grade 6 of New Horizons schools.
Unit of Measure: Number of grade 6 NHP students meeting the criterion of near mastery/mastery on GSAT divided by all grade 6 NHP students.

Disaggregated By: Gender, grade level and program (NHP; non-NHP)
Management Utility: Project impact on language arts performance, allows comparison with national average. Important for determining the impact of NHP interventions in relation to overall system improvement, over the life of the project.

B. Plan for Data Collection
Indicator: NHP grade 6 girls' GSAT Language Arts scores
Source: Student test data from Student Assessment Unit
Data Collection: Yearly
Est. Cost of Collection: N/A
Responsible Organization: Institutional contractor's Chief of Party and formative evaluation team

C. Plan for Data Analysis, Reporting, Review
Data Analysis: Manipulate Student Assessment Unit database to separate NHP and non-NHP students by gender and mastery levels on GSAT (50% correct= near mastery; 75% correct=mastery) divide by total number for each group, calculate percentage change from 1998 baseline and by year.
Presentation of Data: Combined percentage of near mastery and mastery in Tables of planned and actual improvement by year.
Review of Data: Review is performed by the institutional contractor, SO team's annual portfolio review, and other stakeholders
Reporting of Data: Annual performance reports and highlighted tables and narrative of R4

D. Data Quality Issues
Initial Data Qual/Assess: The criteria used to designate near mastery and mastery with the third grade diagnostic tests is used. Using these criteria, at the time of establishing the baseline and targets, over 57% of the grade 6 girls were in the "no mastery" group in Language Arts.
Known Data Limitations: The Student Assessment Unit does not designate mastery levels for sixth grade GSAT. Therefore, the third grade criteria of 50% and 75% for near mastery and mastery, respectively are used in determining student progress.
Actions Addressing Limits: The latest available data will be used.

E. Performance Data Table
Method of Calculations: NHP and non-NHP students separated by gender and mastery levels then divided by total number of NHP and non-NHP GSAT scores for each gender.
Key to Table: No key, the table is easily interpreted
Baseline & Target Notes: Year 2000 actual differs from previously reported percentages because of corrections made in the database

Year	Planned	Actual
1998		43.0
1999	45.0	47.0
2000	48.0	63.0
2001	52.0	57.0
2002	56.0	
2003	60.0	

F. Other
Comments: The slight decline is consistent with a decline for the system as a whole. This decline is likely related to an increased number of students, who were formerly held, taking the GSAT and scoring in the "no mastery" level.

Performance Monitoring Plan
Fiscal Year FY2003

Strategic Objective: Increased literacy and numeracy among targeted Jamaican youth
Intermediate Result: SO Level 532-004

A. Description
Precise Definition: Percentage of students meeting near mastery in grade 6 of New Horizons schools.
Unit of Measure: Number of grade 6 NHP students meeting the criterion of near mastery/mastery on GSAT divided by all grade 6 NHP students.

Disaggregated By: Gender, grade level and program (NHP; non-NHP)
Management Utility: Project impact on mathematics performance, allows comparison with national average. This is important for determining the impact of NHP interventions in relation to overall system improvement, over the life of the project.

B. Plan for Data Collection
Indicator: NHP grade 6 boys' GSAT Mathematics scores
Source: Student test data from Student Assessment Unit
Data Collection: Yearly
Est. Cost of Collection: N/A
Responsible Organization: Institutional contractor's Chief of Party and formative evaluation team

C. Plan for Data Analysis, Reporting, Review
Data Analysis: Manipulate Student Assessment Unit database to separate NHP and non-NHP students by gender and mastery levels on GSAT (50% correct= near mastery; 75% correct=mastery) divide by total number for each group, calculate percentage change from 1998 baseline and by year.
Presentation of Data: Combined percentage of near mastery and mastery in Tables of planned and actual improvement by year.
Review of Data: Review is performed by the institutional contractor, SO team's annual portfolio review, and other stakeholders
Reporting of Data: Annual performance reports and highlighted tables and narrative of R4

D. Data Quality Issues
Initial Data Qual/Assess: The criteria used to designate near mastery and mastery with the third grade diagnostic tests is used. Using these criteria, at the time of establishing the baseline and targets, over 90% of the grade 6 boys were in the "no mastery" group in Mathematics.
Known Data Limitations: The Student Assessment Unit does not designate mastery levels for sixth grade GSAT. Therefore, the third grade criteria of 50% and 75% for near mastery and mastery, respectively, are used in determining student progress.
Actions Addressing Limits: The latest available data will be used.

E. Performance Data Table
Method of Calculations: NHP and non-NHP students separated by gender and mastery levels then divided by total number of NHP and non-NHP GSAT scores for each gender.
Key to Table: No key, the table is easily interpreted
Baseline & Target Notes:

Year	Planned	Actual
1998		6.0
1999	7.0	10.0
2000	10.0	25.0
2001	13.0	26.0
2002	20.0	
2003	30.0	

F. Other
Comments: The slight increase is consistent with that for the system as a whole. This is likely related to an increased number of students, who were formerly held back, taking the GSAT and scoring in the "no mastery" level.

Performance Monitoring Plan
Fiscal Year FY2003

Strategic Objective: Increased literacy and numeracy among targeted Jamaican youth
Intermediate Result: SO Level 532-004

A. Description
Precise Definition: Percentage of students meeting near mastery in grade 6 of New Horizons schools.
Unit of Measure: Number of grade 6 NHP students meeting the criterion of near mastery/mastery on GSAT divided by all grade 6 NHP students.

Disaggregated By: Gender, grade level and program (NHP; non-NHP)
Management Utility: Project impact on mathematics performance, allows comparison with national average. This is important for determining the impact of NHP interventions in relation to overall system improvement, over the life of the project.

B. Plan for Data Collection
Indicator: NHP grade 6 girls' GSAT Mathematics scores
Source: Student test data from Student Assessment Unit
Data Collection: Yearly
Est. Cost of Collection: N/A
Responsible Organization: Institutional contractor's Chief of Party and formative evaluation team

C. Plan for Data Analysis, Reporting, Review
Data Analysis: Manipulate Student Assessment Unit database to separate NHP and non-NHP students by gender and mastery levels on GSAT (50% correct= near mastery; 75% correct=mastery) divide by total number for each group, calculate percentage change from 1998 baseline and by year.
Presentation of Data: Combined percentage of near mastery and mastery in Tables of planned and actual improvement by year.
Review of Data: Review is performed by the institutional contractor, SO team's annual portfolio review, and other stakeholders
Reporting of Data: Annual performance reports and highlighted tables and narrative of R4

D. Data Quality Issues
Initial Data Qual/Assess: The criteria used to designate near mastery and mastery with the third grade diagnostic tests is used. Using these criteria, at the time of establishing the baseline and targets, over 85% of the grade 6 girls were in the "no mastery" group in Mathematics.
Known Data Limitations: The Student Assessment Unit does not designate mastery levels for sixth grade GSAT. Therefore, the third grade criteria of 50% and 75% for near mastery and mastery, respectively, are used in determining student progress.
Actions Addressing Limits: The latest available data will be used.

E. Performance Data Table
Method of Calculations: NHP and non-NHP students separated by gender and mastery levels then divided by total number of NHP and non-NHP GSAT scores for each gender.
Key to Table: No key, the table is easily interpreted
Baseline & Target Notes:

Year	Planned	Actual
1998		14.0
1999	16.0	24.0
2000	18.0	41.0
2001	20.0	42.0
2002	25.0	
2003	30.0	

F. Other
Comments: The slight increase is consistent with that for the system as a whole. This is likely related to an increased number of students, who were formerly held back, taking the GSAT and scoring in the "no mastery" level.

Performance Monitoring Plan
Fiscal Year FY2003

Strategic Objective: Increased literacy and numeracy among targeted Jamaican youth
Intermediate Result: 4.1 532-004 Improved Teaching Quality

A. Description

Precise Definition: Composite of: 1) content knowledge of students; 2) classroom learning environment; and 3) teaching for learning, aggregated across sample classrooms and expressed as values between 0 (minimum) and 1 maximum
Unit of Measure: Index of third grade mastery levels – mathematics and language arts, score on classroom environment scale and percentage of child-initiated interactions, aggregated across sample classrooms.
Disaggregated By: Unnecessary
Management Utility: To track improvement in the quality of teaching over the life of the project.

B. Plan for Data Collection

Indicator: Index of Teacher Quality
Source: Student test data from Student Assessment Unit, observational data from formative evaluation of a stratified, random sample of NHP schools
Data Collection: Yearly
Est. Cost of Collection: N/A
Responsible Organization: Institutional contractor's Chief of Party and formative evaluation team

C. Plan for Data Analysis, Reporting, Review

Data Analysis: Aggregate each measure and average into an overall index of sample schools.
Presentation of Data: Index value between 0 – minimum and 1 – maximum in Tables of planned and actual performance
Review of Data: Review is performed by the SO team, the institutional contractor and other stakeholders
Reporting of Data: Annual performance reports and highlighted tables and narrative of R4

D. Data Quality Issues

Initial Data Qual/Assess: Data collected by trained observers
Known Data Limitations: Diagnostic purposes of third grade tests results leading to lack of full reporting by schools.
Actions Addressing Limits: The COP for the institutional contractor will ensure that adequate data are available prior to the R4.

E. Performance Data Table

Method of Calculations: Scores of three dimensions are averaged as an overall index
Key to Table: No key
Baseline & Target Notes:

Year	Planned	Actual
1999		.43
2000	.50	.44
2001	.58	.48
2002	.65	
2003	.71	
2004		

F. Other

Comments: Planned levels have not been met owing to teachers' continued use of traditional teacher-centered pedagogy.

Performance Monitoring Plan
Fiscal Year FY2003

Strategic Objective: Increased literacy and numeracy among targeted Jamaican youth
Intermediate Result: 4.3 Improved Management of Schools

A. Description

Precise Definition: Number of schools implementing School Development Plan activities in literacy and numeracy; plus schools implementing activities in either literacy or numeracy; plus schools not implementing activities in these areas divided by the total number of schools in the sample
Unit of Measure: Weighted index where (L&N=1;L or N =.5; and other activities = 0)
Disaggregated By: Unnecessary
Management Utility: To measure the integration of project interventions with school activities.

B. Plan for Data Collection

Indicator: NHP schools implement SDP activities in numeracy and literacy
Source: Principals in a stratified, random sample of NHP schools
Data Collection: Yearly
Est. Cost:
Responsible Organization: Institutional contractor's formative evaluation team

C. Plan for Data Analysis, Reporting, Review

Data Analysis: Weight responses, sum response categories, divide by number of sample schools using Excel or SPSS software.
Presentation of Data: Index value between 0 – minimum and 1 – maximum.
Review of Data: Review is performed by the SO team, the formative evaluation team and other stakeholders
Reporting of Data: Annual performance reports and highlighted tables and narrative of R4

D. Data Quality Issues

Initial Data Qual/Assess: Data collected by trained interviewers
Known Data Limitations: None
Actions Addressing Limits: None

E. Performance Data Table

Method of Calculations: Weighted index of SDP implementation
Key to Table: None
Baseline & Target Notes: New indicator with 2001 as baseline year

Year	Planned	Actual
2001		.52
2002	.70	
2003	.90	

F. Other

Comments: This indicator was revised after 5-year targets were reached in 2 years with previous indicator.