Chapter Six

Summary of Findings and Recommendations

6.0 Introduction

The assessment reported in the present study of learning achievement of students completing Grade 04 in 2002 is the fourth in a series of national level assessments of student achievement at primary level conducted since 1994, the year Sri Lanka joined the Monitoring Learning Achievement Project. Three assessments were conducted on learning achievement, over the decade 1994-2004. The objectives of these periodic assessments at national level, of achievement of learning, particularly in respect of monitoring the achievement of targets set by the Education For All declaration and recommendations of the Framework for Action have been discussed in chapters 1 and 2 of this report. The specific objectives of the present study are detailed in, chapter 3 of this report.

The assessment reported in the study of national level learning achievement of students is significant, for the year 2003 marks the completion of the first cycle of primary education under the education reforms in place on a national level, since 1999. The year 2004 marks the beginning of the second cycle of primary education under the educational reforms. Proposals for a 'National Framework on General Education, *envisioning education for human development*', have been presented, by the National Education Commission (2003). The World Bank has completed an Education Sector Review, and planning for the next five-year sector is in progress.

The policy implications of the findings of the present study, presented in the Technical Report (the present report), in nine Provincial Reports, and a Statistical Report, it is hoped, will inform the on-going and envisaged planning for the future of education, particularly for basic education in Sri Lanka.

6.1 The present study

The present study was conducted in 2003, using a national sample of 16383 students who had completed Grade 04 in 2002. The students were drawn from 939 schools proportionally sampled across provinces, and categorized on the basis of provinces, districts, zones, gender, medium of instruction, school type and location (urban/rural). Along with the sample of students, sub-samples of Principals of schools, Sectional Heads/Deputy Principals, Class Teachers and Parents comprised the total sample of the present study. Written tests in the subjects First Language (Sinhala/Tamil), Mathematics and Second Language (English), each test consisting of 40 questions, were used to measure the learning achievement of students. Additionally, data was collected using five questionnaires on student, home and school background factors that influence learning.

This chapter contains a summary of findings and recommendations based on the findings. The summary, in section 6.2 is presented more from a national level perspective. The achievement of students in the subjects tested, on an all island basis, by composite scores per subject and by the levels of mastery attainment, is followed by a relative assessment of achievement in the three subjects. On the basis of these findings, recommendations have been made in section 6.7 of this chapter.

6.2 Summary of Findings

This section presents a summary of the findings of the national study (2003) on achievement of students completing Grade 04 in the year 2002, in First Language, Mathematics and English Language. The patterns and trends in student achievement have been highlighted, relative to identified variables and previous levels of achievement. This data was presented and analyzed in detail, in chapter four of this report, and the data analyzed in-depth, on a provincial basis, has been presented in nine individual Reports. The nine provincial reports highlight the findings from the perspective of each province and its districts, relative to student achievement at national level.

6.2.1 Achievement in First Language

The all island achievement level in First Language (Sinhala Language / Tamil Language) is relatively high, with approximately 60 percent scoring 60 marks and above, 49 percent scoring above 70 marks thereby pushing the all island mean score in First Language up to 62.32 percent. However, 25 percent of the students have scored below 42 and nearly 9 percent have scored less than 20 marks, the latter falling in the category of non-achievers. The percentage achieving mastery scoring 80 percent of total marks or above is 36.5. In language sub-skills tested, the highest performance has been in vocabulary, and the lowest, in writing. These findings, relative to the findings in the three national level studies conducted previously (Table 1.1) indicate that at the national level, achievement in Mother Language has remained more or less constant, with the mean score in the 61-62 range.

6.2.2 Achievement in Mathematics

The all island achievement level in Mathematics is satisfactory, with approximately 51 percent scoring 60 marks and above. It is noteworthy that 49 percent have scored above 70 marks, thereby pushing the all island mean score up to 60.8 percent. This mean score compares well with that of First Language. The percentage achieving mastery scoring 80 percent of total marks or above is 37.9, and therefore, slightly higher than the percentage achieving mastery in First Language. However, 25 percent of the students have scored below 38 and 8.2 percent have scored less than 20 marks, the latter falling in the category of non-achievers. In mathematics sub-skills tested, the highest performance has been in the element - concepts, which is the easiest of the skills needed to answer the questions, whereas students have scored lowest in the element - problem solving, which is relatively a more complex ability. Relative to the three studies conducted previously (Table 1.1) the mean score in Mathematics, in the present study, shows an improvement.

6.2.3 Achievement in English Language

The all island achievement level in English Language is poor, with approximately 27.6 percent scoring 60 marks and above. Only 17 percent have scored above 70 marks. The all island mean score is 41.9. This mean score compares poorly with those of Mathematics and First Language. The percentage achieving mastery scoring 80 percent of total marks or above is only 9.5 percent. In English Language, 25 percent of the students have scored below 25 and 14.6 per cent have scored less than 20 marks, the latter falling in the category of non-achievers. In English sub-skills tested, the highest performance has been in vocabulary, whereas students have scored lowest in writing.

A comparison of the mean scores of First Language, Mathematics and English Language, 62.32, 60.8, 41.9 percent respectively indicates that the achievement of students in the first two subjects is relatively higher than that in English Language. These scores indicate that on an all-island basis, more students have scored higher marks than lower marks, in First Language and Mathematics. In English Language, more students have scored lower marks than higher marks. Only 36.5, 37.9 and 9.5 percent have reached mastery, in First Language, Mathematics and English Language respectively. This indicates that on an all-island basis, there is a long way to go, to achieve the EFA targets of 80 percent mastery.

6.3 Achievement by Identified Variables

The variables identified for purposes of the present study are; gender, school type, medium of instruction, location (urban/rural) province and district. The findings of student achievement, on a national level, by the variables, are summarized, in this section.

6.3.1 Achievement by Gender

In this sample of students 50.4 percent were boys and 49.6 were girls. There is a gender difference in achievement in all subjects, significant at the level of 95 percent confidence, with girls leading consistently. The range of difference between means is 1.4. In percentages reaching mastery, the findings are similar - while 29.8 percent of the girls

have reached mastery in the three subjects, only 26.2 percent of the boys have been able to reach mastery, a difference of 3.6 percent. However, a previous study, conducted in 1993 and cited in the present study (chapter 2, p.24), on achievement in Mathematics of students completing Grade 11, reports that there was no difference by gender in achievement. In the present study, by completion of Grade 04, a difference in achievement is noted by gender, in all subjects tested, including Mathematics.

6.3.2 Achievement by School Type

Equity in the provision of basic education implies equality of access, equality of outcomes and equivalent experience. The student composition from 1AB, 1C, type 3 and type 2 schools in this sample comprises of 16.3, 30.0, 20.5 and 33.3 percent respectively. The highest percentage of students therefore is from type 2 schools and the lowest, from 1AB schools. In the analysis of data by school type however, a marked disparity in outcomes of learning is evident. Achievement levels are consistently the highest in Type 1AB schools, and lowest in Type 02 schools. The achievement levels of the other two school types, 1C and type 3 lie in between.

A comparison of the means (of the test scores of subjects) by school type indicates that these differences in means by school type are significant at the level of 95 percent confidence. There is a maximum difference of 19.0 in mean values by school type and by subject, which gives a measure of the variation in student achievement by school type. In respect of all subjects, the maximum difference in means is between 1AB and type 2 schools. In percentages reaching mastery by school type, the findings are similar; while 45.5 percent of students have reached mastery in the three subjects in 1AB schools, only 19.2 in type 2 schools have been able to reach mastery, the difference being 26.3 percent. The findings of previous studies (chapter 2) confirm that consistently, there has been a difference in achievement by school type, with the achievement levels of types 2 and 3 schools comparing poorly with those of 1AB schools in particular.

6.3.3 Achievement by Medium of Instruction

In this sample of students, 69.3 percent studied in the Sinhala medium and 30.7 in the Tamil medium. There is a difference in achievement by medium of instruction in all subjects, significant at the level of 95 percent confidence, with those studying in the Sinhala medium leading consistently. The maximum difference in mean values is 9.0, in the three subjects tested. In percentages reaching mastery, the findings are similar; while 32.9 percent students in Sinhala medium classes have reached mastery in the three subjects, only 17.4 percent of the students in Tamil medium classes have been able to reach mastery, a difference of 15.5 percent.

A further analysis was done to identify patterns if any, within Tamil medium schools by location - Eastern Province, Northern Province, 'plantation area' and 'other area' schools. A comparison of mean values in achievement in Tamil Language, by the four groups of schools indicates that the 'other area' schools have the highest mean value, the Northern province has the next higher mean value, followed by the Eastern province and the plantation area schools. In the other two subjects - Mathematics and English Language and in percentages achieving mastery, the pattern is similar.

6.3.4 Achievement by location of school

Schools in this sample have been categorized as urban and rural by location; schools in Municipal and Urban Council areas have been categorized as urban and schools located in the Pradeshiya sabha areas have been categorized as rural schools respectively. According to this categorization, 19 percent of the students in the sample are urban students and 81 percent are rural students. There is a difference in achievement by location of school in all subjects, significant at the 95 percent level of confidence, with those studying in the urban schools leading consistently. The maximum difference in mean values, in the three subjects tested is 11.2 and the minimum, 7.0. In percentages reaching mastery, the findings are similar; while 41.1 percent students in urban schools have reached mastery in the three subjects, only 24.9 percent of the students in rural schools have been able to reach mastery, a difference of 16.2 percent. Findings of

previous research, reported in chapter 2 confirm that achievement in rural schools has consistently been lower relative to urban schools.

6.3.5 Provincial and District level differences in Achievement

The differences among provinces and districts in achievement are considerable, and significant at the level of 95 percent confidence.

Province-wise, the mean values in achievement in First Language range from 53.9 to 72.8. In five of the provinces, the mean values are above the all island mean value of 62.32.

In Mathematics, in the Central, Uva, Northern and Eastern provinces, the mean values are below the all island mean value of 60.8.

In English Language, the North Central, Uva, Northern and Eastern provinces are below the all island mean value of 41.9. The differences in provincial mean values range from 35.6 to 54.3.

The lowest mean values in all three subjects, First Language, Mathematics and English Language have been obtained by 7 districts, Moneragala, Jaffna, Trincomalee, Nuwara Eliya, Mulativu, Batticaloa and Kilinochchi districts. In First Language the mean values of these 7 districts range from 56.48 - 43.09; In Mathematics from 55.11 - 34.76; and in English Language 37.77 - 24.28. In terms mastery attainment, the same 7 districts and Mannar district record the lowest percentages.

In discussing disparities among schools in Sri Lanka, in chapter 2 of this report, it is noted that there are marked inter-regional and intra-regional disparities in student performance within the almost monopolistic common state school system (p.24) and that these disparities are noted in unconscionable proportions (p.25).

6.4 Level of Performance

The results of studies on student achievement at primary level conducted since 1994 indicate that student performance has remained constant over time, and mean values have ranged around 61-64. Since 1994, four national level studies have been conducted on student achievement in Grades 03 and 05 and in 2003 the present study was conducted in Grade 04.

6.5 Percentage Achieving Mastery

The target set out in Education for All – The Year 2000 Assessment, in relation to learning achievement and outcomes, and specified in the technical guidelines, is as follows.

> Improvement of learning achievement such that an agreed percentage of an appropriate age cohort (for example, 80 percent of 14 year olds) attains or surpasses a defined level of necessary learning achievement (p.19).

Further, it is clearly stated that the number of pupils who have mastered a defined level of basic learning competencies by grade 04 (or another higher grade), expressed as a percentage of the total number of pupils in grade 04 is an indicator of success. This indicator seeks to measure learning achievement in respect to the minimum basic knowledge and analytical skills expected of pupils having reached that grade.

Based on the results of this National assessment it is found that the all island percentage achieving mastery in first language is only 36.5 percent, with percentages in provinces ranging from 22.7 to 53.5. The all island gap to be bridged in order to achieve 80 percent mastery is 43.5 percent. Province-wise the gap to be bridged range from 26.5 percent to 57.3 percent.

In Mathematics the all island percentage achieving the level of mastery is only 37.9 percent, and the highest percentage achieving mastery in a province is 52.3. The all

island gap to be bridged is 42.1 percent. Province-wise the gap to be bridged range from 22.7 percent to 54.9 percent.

In English Language, achievement is significantly lower than in the other two subjects. All island value achieving the level of mastery is only 9.5 percent and the gap to be bridged, 70.5 percent. The provincial values reaching the level of mastery in English Language range from 5.0% to 19.5%, the gap to be bridged range from 60.5 percent to 75.0 percent.

These percentage values confirm that in First Language and Mathematics, on the average, only 37 percent of children on an all island basis have reached the mastery level. This level of achievement is far from satisfactory. In English Language, only 9.5 percent of the children, on an all island basis, have reached mastery. The findings in the 1996 study on the performance of Grade 03 students also highlighted the very high percentage of students falling in the category of non-mastery. The low levels of mastery attainment call for comprehensive, systematic, and sustained strategies to accelerate mastery attainment by quality improvement, in particular, by diagnostic and remedial interventions.

6.6 Influence of Background Factors

The effects of background factors on levels of learning achievement of primary school children were assessed, in the present study. Of the three background factors identified - home, school and student, the school background was the most influential factor on learning achievement. The background of the Sectional Head, class teacher interactions, learning process, teaching methods, assessment procedures, monitoring and supervision practices and facilities provided were identified as the most important variables that decide the quality of the school background. The correlation values between the school background and the variables listed were within the range of 0.880 and 0.994. It is evident that the combination of these variables and their interactive nature provides an environment that is conducive to learning.

The findings indicate that home background influences on learning achievement of the child are also substantial. The variables identified as most significant in home background were - place of living, facilities available at home, how the after school hours were spent at home, ability of parents to spend some money to cater to the learning needs of the child, and the position of the parents.

The student background itself influences learning achievement to a considerable degree. Pre-school education, fulfillment of physical and psychological needs at home, additional support given by elders in learning tasks, provision of basic facilities such as text books, a desk and a chair were the more important components identified in a favorable student background that leads to higher learning achievement.

The range of homogeneity (roh) value calculated for the test scores reveal that there are large differences among schools. The average roh value of 0.30 indicates that the variation between schools is 30 percent. The variation between students within the school is 70 percent. When the roh value is high it denotes that differences between schools are high. The level of a student's score will depend largely on the school he attends. In addition, it is to be noted that the roh value in respect of English was higher (0.32) than the roh value of other two subjects. It means that the effect of teaching in school on student achievement is more pronounced in English Language, than in the other two subjects.

6.7 Recommendations

In this section, recommendations based on the findings are presented. The achievement of students as assessed in this study, raise a number of concerns in respect of the delivery of basic education over the primary cycle, by the school system in Sri Lanka. Based on the findings of this study, recommendations to address the concerns identified in each area are presented. The three main areas of concern are

i) student achievement in the subjects tested - intra-subject and inter-subject variations in student achievement and the variation in levels of student achievement that signal the urgent need to track student learning progress

ii) the levels of attainment of mastery in terms of EFA targets

iii) the disparities in achievement by the variables identified.

To address these concerns, comprehensive, systematic, and systemic development interventions are called for, in particular of a diagnostic and remedial nature. Recommendations drawing on the preliminary diagnostic data available in the database of the present study and suggestions for further research are indicated, in this section.

6.7.1 Action Plan for Diagnostic and Remedial Intervention

Based on the data in the present national level assessment of achievement, and on more in-depth data collected at provincial level and ideally on an individual school-level, a national level action plan for diagnostic and remedial intervention must be developed, on a priority basis. This action plan for diagnostic and remedial intervention, in both student learning and classroom teaching, should start in Key Stage 1 and continue up to the completion of the primary cycle. Systematic databases maintained at provincial level and continuously updated, of the status of target attainment in educational Zones and in individual schools, school-based maintenance of records indicating the tracking of individual student achievement is necessary if this development initiative is to be sustained.

6.7.2 National Level Project on Diagnostic and Remedial Teaching

An on-going national level project on diagnostic and remedial teaching, with action-research and periodic assessment built into this project, would provide the support base and services needed to sustain this urgently needed development initiative. The development of diagnostic instruments and tests, training of trainers and classroom teachers for remedial and outcomes based teaching in Language and Mathematics should be given priority, on a system-wide basis. The national teacher education system and all teachers at primary level should be part of this project, in their respective capacities. The National Institute of Education should spearhead this initiative, with collaboration

as appropriate by the National Education Research and Evaluation Centre (NEREC). The sponsorship of funding agencies would facilitate this initiative because this is an area of expertise that needs to be developed in-depth, in substantial numbers of teachers and teacher educators in the system, to service the needs at all levels.

Targets should be set, in national, provincial, Zonal, and school level plans, appropriate strategies identified and training provided, materials development initiated, and incentives provided to take this initiative forward. Parental awareness and active collaboration in the effective implementation of the action plans will be critically important to its success. Monitoring and evaluation processes must be built in, at all levels, reporting and dissemination of findings will provide a competitive edge that will add challenge to all stakeholders responsible and accountable for getting desired results.

6.7.3 Determination of Desired Learning Objectives and Essential Learning Objectives

The National Institute of Education curriculum developers should draw up, print and distribute lists of Desired Learning Objectives and Essential Learning Objectives and indicators of achievement, in each subject for each grade. This will enable the project teams to design and develop appropriate materials, the teachers to facilitate optimum learning in all sub-cohorts of students such as the non-achievers, the high achievers, to challenge those who have already attained mastery to reach further heights, motivate those who are in the near-margin of mastery attainment and those sub-cohorts who need to close a wider gap, to achieve mastery. An all island programme needs to be launched by the National Institute of Education to create awareness in teachers and in service advisors of the critical need for and significance of outcomes based teaching and learning facilitation.

6.7.4 Strengthening of School Based Assessment

The School Based Assessment programme already in place in the system **should be linked to this initiative for outcomes based teaching and learning facilitation**, starting in the primary cycle. The objectives of school based assessment would be achieved, if assessments are used for diagnosis and remedial interventions than merely serve recording purposes. Essential and desirable learning objectives that meet the needs of all sub-cohorts of learners, if specified, will facilitate outcomes based learning and teaching in classrooms. Teachers need intensive training in how to match learning objectives and the needs of learners who are at different points in the continuum of learning, in the different subjects.

6.7.5 Implementation of a Quality Improvement Programme

A **total quality improvement programme** if designed and implemented at school level would complement the initiatives recommended. Individual schools may need assistance to conduct needs analyses, identify targets, decide on priorities, design programmes and implement them. To bring about quality improvement at school level, the necessary guidance and training should be provided, in learner centered teaching, learning for mastery, embedded assessment, quality management, bench marking, internal and external assessment etc.

A consultative group may be formed to guide the total quality improvement initiative. Representatives of the National Institute of Education (NIE), University Education Faculties and Departments, National Education Research and Evaluation Centre (NEREC), Colleges of Education, Teacher Training Colleges, Teacher Centres, Ministry of Education, Provincial Ministries, National Educational Testing Service, other organizations and individuals interested in quality improvement at school level, should come together to support the schools to design and implement their total quality improvement plans. This group may work closely with the Central government Ministry of Education and the Provincial Ministries of Education which should provide the necessary resources and render all assistance necessary in implementing these plans.

6.7.6 Setting up of an Education for All Secretariat

Set up an **Education For All National Secretariat** (E.F.A) in the line Ministry of Education and a network of E.F.A Secretariats in all Provincial Education Departments and the 92 Zonal Education Offices. The National Secretariat should be the coordinating body at the apex, and the Provincial Secretariats should coordinate all activities conducted at the provincial level.

The National and Provincial Secretariats may carry out small-scale studies to identify needs, prioritize areas to be focused on in the short term, and draw up action plans. Ideally, they should work in collaboration with UNESCO, specially the Regional Office located in India, which is responsible for the implementation of the EFA programme in this region. Further, they may seek the assistance of other agencies such as the World Bank, the Asian Development Bank, UNICEF etc., work in collaboration with all categories of stakeholders, and be responsible and accountable as the principal authorities for implementing the EFA master plan.

6.7.7 Declare Emergency Basic Education Zones

Emergency Basic Education Zones may be declared throughout the country, by identifying the provinces, districts, and zones that should be given priority. The elimination of existing disparities in student achievement calls for affirmative action at all levels - national, provincial, divisional, zonal and at school level. The disparities in student achievement by school type, medium of instruction, location and other variables must be progressively reduced and eliminated, by adopting appropriate strategies. There should be a national educational plan to launch special programmes that provide the necessary support, monitor progress and assist in achieving these targets. Declaring Emergency Basic Education Zones may be one strategy to accomplish this.

6.7.8 Special Programme for Type 02 Schools

Initiating a special programme to **transform Type 2 schools enabling** the eventual **upgrading of type 02 schools throughout the country as schools of excellence** may be another strategy. If type 2 schools are provided with the necessary physical, human and financial resources on a priority basis, the primary level in these schools will be strengthened. Type 2 schools cater to one third of the student population in the primary cycle, and the findings indicate that the achievement levels of students attending these schools have consistently been the lowest.

A majority of the type 02 schools are located in isolated, difficult and non-preferred rural areas. If they are to be upgraded as schools of excellence, necessary improvements have to be effected, which will help influence positively the attitudes of parents and teachers. The competition for admission to primary grades in urban 1AB schools may also be reduced eventually. The attitudes of teachers may change and their willingness to serve in these schools enlisted, thus addressing the serious problem in the system of teacher deployment. Type 02 schools are located in every educational zone. Therefore, the most glaring disparities in outcomes, focused on in the findings of this report, by school type (1AB/Type 02), location (urban/rural), medium of instruction (Sinhala/Tamil) - in provision of basic education may be minimized, within the next decade, in accordance with the targets set to achieve Education For All goals by year 2015, as stipulated in the Declaration on Education For All.

6.7.9 A National Symposium on Provision of Basic Education

A **National Symposium on Provision of Basic Education** should be conducted with representation of all categories of national and provincial level stakeholders, the donor community, policy makers, trade unions, non-governmental organizations etc. One of the many outcomes of such a symposium could be the appointment of a task force or a consultative body that guides, monitors and sustains national and provincial level initiatives in the provision of basic education.

6.7.10 Special Media Programmes

Adequate publicity should be provided and the attention of the public drawn to the provision of basic education through special programmes conducted on the electronic as well as the print media, commencing with the state electronic and print media. The media facilities of the NIE can be utilized in the creation and development of programmes to be broadcast over the electronic media. The need to strengthen basic education provision, the objectives, approaches and strategies being adopted can be explained to the general public through this programme and a continuing dialogue maintained with stakeholders enabling the enrichment of programmes by their inputs, enlisting vigilance on their part, and ensuring ownership and sustenance.

6.8 References

UNESCO (1998), Education for All: The Year 2000 Assessment, *Technical Guidelines*.