

# Trends in Achievement -2003 - 2009

### 4.1 Introduction

Patterns of achievement of students, who completed grade four in the year 2008 were discussed in chapter 3.

In this chapter, the trends of learning outcomes for the three subjects, First language, English language and Mathematics over the period 2003 -2009 are discussed. This time trend analysis of learning outcomes will provide useful information for monitoring of the provision of equity and for policy decision making.

However, it should be noted that the time duration between the 2003 and 2007 studies was four years, and between 2007 and the present study is only two years. Therefore, comparison of achievement between the two periods is not possible. The purpose of this chapter is two fold.

- To examine whether the trends observed in learning achievement during 2003 are sustained over the period 2003 2009.
- To compare the performance in 2007 with the performance in 2009.

National level average achievement in the three subjects, in relation to medium of instruction, school type, gender and location would be analysed first.

## 4.2 All Island trends in performance by medium of instruction

### 4.2.1 Trends in First language performance

In the two previous studies, (2003 and 2007) the performance in Sinhala and Tamil were combined to calculate the All Island mean for First language. However, in the present study the two languages were considered separately. The trend in learning outcomes for the two languages are presented in Figure 4.1.



Figure 4.1: The time trend of learning outcomes in the First language by medium of instruction, 2003-2009

As Figure 4.1 indicates, over the period of four years from 2003 - 2009, there are substantial increases in learning achievement in both Sinhala language and Tamil language. However, when considering the magnitude of improvement, it can be seen that in the Tamil language achievement, the magnitude is greater than in the achievement of Sinhala language. In spite of this vast improvement, the performance in Tamil language is lower than that of Sinhala, and its Island mean is also lower than the Island wide mean for the combined First languages.

On the other hand, in 2009 when compared to the mean score in 2007, even though the same positive trend in achievement in the Sinhala language can be seen, the magnitude of the improvement is very little.

In the performance of the Tamil language, the positive trend is sustained with almost similar mean values (64.1 and 63.38). However, there is no increase in the magnitude of the improvement. On the contrary there is a slight decrease.



4.2.2 Trends in English language performance

Figure 4.2: The time trend of learning outcomes in the English language by medium of instruction, 2003-2009

As Figure 4.2 indicates, over the period of four years from 2003 - 2007 there has been substantial increases in learning achievement in English, among Sinhala medium as well as among Tamil medium students. In spite of this vast improvement, the mean achievement of Tamil medium students is lower than that of Sinhala medium students. Further, the mean for the Tamil medium students is also lower than the Island wide mean.

When considering the magnitude of improvement, it can be seen that it is greater for Sinhala medium (45.8 -58.42), when compared with Tamil medium students' mean difference of 37.6 and 48.89.

On the other hand, in 2009, when compared with 2007, even though the same positive trend in achievement is sustained for both mediums, there is hardly any improvement in mean scores (48.3 - 48.89) for Tamil medium students while there is a slight increase for Sinhala medium students (55 - 58.42).



#### 4.2.3 Trends in Mathematics performance



All Island achievement in Mathematics over the period of 2003 to 2007, for both Sinhala and Tamil medium shows a positive trend. Although this trend is sustained between 2007 and 2009, the magnitude of the improvement in performance is very much less during this period.

Both the Tamil medium and the All Island achievement, over the period of 2007 to 2009, show a slight decline in 2009. Therefore, the Tamil medium performance may have had an impact on the Al Island mean achievement.

# 4.2.4 Summary of All Island trends in performance by medium of instruction

According to Figures 4.1, 4.2 and 4.3, the positive trend observed in achievement of learning outcomes in all three subjects during 2003-2007 is sustained over the period of 2003 -2009.

However, in comparison with 2007, the Tamil medium performance is slightly less in Mathematics and Tamil language. Consequently, the All Island trend in these two subjects is also slightly less.

This trend is also observed when considering the data regarding  $25^{th}$ ,  $50^{th}$  and  $75^{th}$  percentiles given in Table 4.1.

	Si	nhala	Langu	ıage	Tamil Language				English Language				Mathematics			
Year	Pe	ercent	ile	Moon	Percentile		Moon	Pe	ercent	centile		Pe	Hoop			
	25	50	75	mean	25 50 75		mean	25	50	75	Mean	25	50	75	mean	
2003	43	68	85	64	43	68	85	64	24	36	59	44	38	68	88	62
2007	58	80	90	72	58	80	90	72	32	52	76	53	63	85	95	74
2009	65	83	93	76	43	70	88	63	35	56	77	56	58	83	93	73

 Table. 4.1: Percentile values in the four subjects 2003 - 2009

In Table 4.1, scores for Tamil language and Sinhala language for the years 2003 and 2007 are the same. This is because in 2003 and 2007 these were combined as First language. However, in the 2009 study, data was analysed separately for the two First languages Sinhala and Tamil. As Table 4.1 displays, Sinhala language scores for all three percentiles are higher than for the Tamil language. Further, the combined mean scores for the First language is less than the mean score for the Sinhala language but higher than the mean score for Tamil language.

Achievement of learning outcomes in relation to the four subjects will be further analysed to identify trends according to school types.

#### 4.3 All Island trends in achievement by school type

#### 4.3.1 Trends in First language performance

The positive trend in achievement of learning outcomes in Sinhala language identified by medium of instruction, can be seen among the performance by school type as well. As Figure 4.4 displays, the positive trend observed during the period 2003-2007 is sustained during 2003 -2009 in all school types.





The most significant finding in relation to the observed trends is that, the high magnitude of the increase in performance during the period 2003-2009, is shown in Type 2 and Type 3 schools. The increases from 55.8 to 70.68 in Type 2 schools and 63.9 to 78.8 in Type 3 schools respectively is substantial.

In comparison with the Sinhala language achievement, the trends observed in the Tamil language performance is different.



Figure 4.5: The time trend of learning outcomes in Tamil language by school type 2003-2009

As Figure 4.5 displays the trend observed during the period 2003-2009 is different among the school types. While Type 2 and 1C schools show a positive trend in achievement, 1AB and Type 3 schools show a negative trend. However, the mean scores of 1AB and 1C schools are above the national average. This is a surprising finding as 1AB schools are considered as better resourced.

However, the low mean scores for 1AB and Type 3 schools may be due to the fact that 1AB and Type 2 schools are not well represented in the sample as annexure 4 indicates. In some provinces, such as the North Western, Sabaragamuwa and Southern province which have performed well in other subjects, 1AB and Type 2 schools are not represented.

The mean achievement in 2009 in all school types, and also the All Island mean is lower than the mean achievement in 2007.

	First Language Year 2009 Proportion of student scoring between												
School Type	0 -	25	26 -	50	51 -	75	76 - 100						
	Sinhala %	Tamil %	Sinhala %	Tamil %	Sinhala %	Tamil %	Sinhala %	Tamil %					
1AB	2.2	4.8	4.8	13.6	17.7	26.7	75.3	54.9					
1C	5.1	10.5	9.7	15.4	25.5	27.3	59.7	46.8					
Туре 2	7.7	13.9	13.8	24.2	26.3	27.1	52.3	34.9					
Туре 3	4.2	14.6	9.1	20.8	17.3	28.4	69.4	36.1					
All Island	5.3	12.1	10.0	19.6	22.7	27.4	62.0	40.8					

Table. 4.2: Trends in achievement of skills in First language (Sinhala and Tamil) - 2009

Since data is not available for the two languages separately for 2003 an 2007, Figure 4.1 indicates only the 2009 data. According to this information, the highest percentage of students falls within the 76 -100 range for Sinhala language achievement. Out of these the highest percentage of students is from the 1AB type schools while the lowest percentage of high scorers is from the Type 2 schools. The same trend could be observed with respect to the Tamil language as well.

#### 4.3.2 Trends in English language performance

There is a positive trend in mean achievement across all types of schools over the period 2003-2009. (Figure 4.6). The magnitude of the trend over time is also quite significant in all four types of schools.



Figure 4.6: The time trend of learning outcomes in English language by school type, 2003-2009

When the performance in 2009 is considered, it can be seen that the mean scores in all four types of schools have increased. The national level performance in English also shows an improvement.

Even though Type 2 schools continue to lag behind the other three types of schools, the improvement in achievement shown over time is quite substantial.

While the mean score of 1C Type schools are quite close to the national average, the mean scores of 1AB and Type 3 schools are above the national mean.

The Table given below is evidence to the fact that Type 2 schools lag behind other schools. The majority of the students in Type 2 schools falls within the category of 26 -50. However, there is a decrease in the percentage of low achievers over the period 2003-2009.

		20	03			20	07		2009				
School Type	Prop Sc	ortion coring E	of Stuc Betwee	dents en:	Prop Sc	ortion coring E	of Stuc Betwee	lents n:	Proportion of Students Scoring Between:				
	0-25 %	26-50 %	51-75 %	76-100 %	0-25 %	26-50 %	51-75 %	76-100 %	0-25 %	26-50 %	51-75 %	76-100 %	
All Island	26	42	19	12	14	38	26	23	11	33	29	27	
Type 1AB	12	31	29	28	7	24	31	39	5	19	28	48	
Type 1C	24	46	20	10	13	39	27	21	11	34	32	23	
Type 2	34	46	14	6	19	46	22	13	14	42	28	17	
Type 3	28	38	20	14	14	35	25	26	11	31	27	31	

Table 4.3:	Trends in	achievement	by differe	ent levels o	f students ir	ו English	language
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#### 4.3.3 Trends in Mathematics performance

There is a positive trend in achievement over time between 2003-2009 in all schools (Figure 4.7). However it is significant that the highest increase over time is shown in Type 2 schools (54.32 - 68.41) even though, they lag behind in achievement, compared to the other three school types.

When the performance in 2009 is considered, the average performance in all school types, except in Type 2 schools is slightly lower than in 2007. In Type 2 schools, the mean score has increased slightly from 68.30 to 68.41. One reason for this increase is shown in Table 4.4.

		20	03			20	07		2009				
School Type	Prop Sc	ortion coring E	of Stud Betwee	dents en:	Prop Sc	ortion coring E	of Stud Betwee	dents n:	Proportion of Students Scoring Between:				
	0-25 %	26-50 %	51-75 %	76-100 %	0-25 %	26-50 %	51-75 %	76-100 %	0-25 %	26-50 %	51-75 %	76-100 %	
All Island	18	18	24	41	8	12	21	59	7	14	20	59	
Type 1AB	8	10	20	62	4	8	15	74	3	9	15	73	
Type 1C	15	17	26	42	7	10	22	60	7	13	20	60	
Type 2	23	22	25	30	11	16	23	50	10	17	23	50	
Туре 3	21	18	21	40	8	13	21	58	7	14	20	59	

As the above Table indicates, in 2009, in Type 2 schools the percentage of students falling within 0 -25 has decreased from 2007. This in turn may have contributed to the increase in the mean scores.



Figure 4.7: The time trend of learning outcomes in Mathematics by school type, 2003-2009

#### 4.3.4 Summary of All Island trends in achievement by school type

In the achievement of learning outcomes for Sinhala language, positive trend in all school types could be observed. Further, the high magnitude of increase in performance is observed in Type 2 and Type 3 schools.

The trend in achievement of learning outcomes for the Tamil language shows both positive and negative trends in achievement over time.

The trends in achievement of learning outcomes for Mathematics shows a positive trend. However, the magnitude of the increase in achievement over time is shown in Type 2 schools. This increase may be due to the interventions at provincial and school level in these schools due to the findings of previous studies.

#### 4.4 All Island trends in achievement by location

#### 4.4.1 Trends in First language performance by location

The trend of achievement in learning outcomes for the First languages- Sinhala and Tamil are presented in Figure 4.8 and 4.9 respectively. Figure 4.8 shows that learning outcomes increased for Sinhala language between 2003-2009. Further, this increase can be seen in both the urban sector and the rural sector.

Even though, the mean score for the rural sector is less than for the urban sector, the magnitude of the increase in mean scores over time is higher in the rural sector than in the urban sector ( 61.6 -74.95 and 71.8 -77.68).

The Figure 4.8 also indicates that with regards to the learning outcomes in Sinhala, there does not appear to be much difference between the urban and the rural sector, by 2009.



Figure 4.8: The time trend of learning outcomes in Sinhala language by location, 2003-2009

In contrast to Figure 4.8, there is a different pattern observed in Figure 4.9. The trend of achievement over the period 2003 -2009 for the Tamil language shows a slightly negative trend. This trend can be seen in both the urban sector as well as in the rural sector.



Figure 4.9: The time trend of learning outcomes in Tamil language by location, 2003-2009

This negative trend is more prominent between 2007 and 2009. The mean scores for urban and rural sectors have declined from 77.4 -71.77 and 70.8 -61.37 respectively, while the national average has decreased from 72 - 63.38. Therefore, there is a decline in the performance of both rural and urban sector students. However, the decline in the rural sector is greater.

#### 4.4.2 Trends in English language performance by location

The trend of achievement of learning outcomes for the English language as presented in Figure 4.10 shows a positive trend. Figure 4.8 shows that learning outcomes increased for Sinhala language between 2003-2009.Further this increase can be seen in both the urban sector and the rural sector.

The performance in the rural sector lags behind the performance in the urban sector. In spite of this, the magnitude of the increase in achievement of learning outcomes for the rural sector is greater than for the urban sector (40.3 -52.23 and 55 -65.8).

Further, the rural sector mean score is closer to the Island mean, where as the urban mean score is higher than the national score. This indicates that there is still disparity in achieving learning outcomes for the English language between the urban and rural sector. However, there is improvement in achieving the learning outcomes which indicates that measures taken to improve the standard of English in the rural primary schools have had an impact.



Figure 4.10: The time trend of learning outcomes in English language by location, 2003-2009

Figure 4.10 also shows that the performance in 2009 is very similar to the performance in 2007. While the Sinhala language achievement is similar in the two years, there is a slight increase in performance in the national level and rural sector mean scores.

#### 4.4.3 Trends in Mathematics performance by location

All Island achievement in Mathematics over the period of 2003 to 2007 for both urban and rural sector students show a positive trend. Although, the rural sector students lag behind the urban students in their achievement, the magnitude of the increase in achievement over the period is higher.



Figure 4.11: The time trend of learning outcomes in Mathematics by location, 2003-2009

#### 4.4.4 Summary of All Island trends in achievement by location

Both English language and Mathematics show positive trends in achievement over time. In both these subjects, though the rural sector lags behind the urban sector in achieving learning outcomes, the improvement shown over the period 2003-2009 is substantial.

Trend in First language performance over time shows a positive direction for the Sinhala language for both the rural and urban sector. On the other hand, there is a slightly negative trend in Tamil language performance, both in the urban and rural sector. The magnitude of the increase in achievement is also higher among females than males.

### 4.5 Trends in achievement by gender



#### 4.5.1 Trends in First language performance by gender

Figure 4.12: The time trend of learning outcomes in Sinhala language by gender, 2003-2009

There is a positive trend in the achievement of learning outcomes over time by the females, with a slightly higher mean value in 2009, (68.3) compared to 2003 (67.7).

On the other hand, there is a negative trend in the performance of boys with a slightly lower mean value in 2009 (58.31 compared to 60.2)

When the 2007 performance is compared with the performance in 2009, irrespective of gender, there is a decrease in mean scores which has resulted in lowering the Island mean score.



Figure 4.13: The time trend of learning outcomes in Tamil language by gender, 2003-2009

#### 4.5.2 Trends in English language performance by gender

There is a positive trend in achievement over time between 2003-2009 among both males and females as well as at national level (Figure 4.14). However, the magnitude of the increase over time is more among females (46.4 -59.78) than males.





When the performance in 2009 is compared with the achievement in 2007, there is a slight increase in All Island mean value.

#### 4.5.3 Trends in Mathematics performance by gender

There is a positive trend in achievement in Mathematics over time between 2003-2009, among both males and females as well as at national level (Figure 4.15). However, the magnitude of the increase over time is slightly higher among females than males. Figure 4.15 also shows that the performance of females in 2009 is very similar to the performance in 2007. However, there is a slight decrease in performance in the national level and in the performance of males (72 -69.39).



Figure 4.15: The time trend of learning outcomes in Mathematics by gender, 2003-2009

# 4.5.4 Summary of National level trends in achievement in the three subjects

Cognitive achievement in First language, English language and Mathematics at national level was discussed in sections 4.1-4.4.

In section 4.6, the trends in achievement at national level of the sub skills pertaining to each subject will be discussed. These sub skills were identified in chapter 2 Table 2.5.

#### 4.6 Trends in achievement of sub skills

#### 4.6.1 Trends in achievement of sub skills in First language

As shown in Figures 4.16 and 4.17, there is a positive trend in achievement of all four sub skills in Sinhala as well as in Tamil over the period 2003-2009. In 2003 and 2007 Sinhala language and Tamil language scores were combined to calculate the First language mean. Hence, in the two figures, the mean values for 2003 and 2007 are the same for both Sinhala and Tamil.



Figure 4.16: All Island trends in achieving sub skills in First language 2003 to 2009

The magnitude of the change over time in all four sub skills, in both Sinhala and Tamil, is substantial.

However, the most significant improvement can be seen in writing skills in both languages. In spite of this improvement, writing skills and syntax are the two sub skills that need further improvement as well.



Figure 4.17: All Island trends in achieving sub skills in Tamil language 2003 to 2009

#### 4.6.2 Trends in achievement of sub skills in English language



Figure 4.18: All Island trends in achieving sub skills in English language

A positive trend over time in the achievement of sub skills in the English language can be seen in Figure 4.18. The magnitude of the increase in performance from 2003 -2009 is quite significant in all four skill areas. However, even though there is an improvement in the writing skills, this is an area that needs to be improved further.

Teaching of English commences only at grade three, and in grades three and four more emphasis is on listening and speaking skills. This could be one reason for the low performance. Yet, as only the basic competencies in writing were assessed, the low performance indicates that writing should be improved.



#### 4.6.3 Trends in achievement of sub skills in Mathematics

Figure 4.19: All Island trends in achieving sub skills in Mathematics

A positive trend in achievement over time can be seen in the performance in the sub skills of Mathematics. The magnitude of the increase over time is quite high in all three sub skills.

The most significant achievement is that students seem to be performing equally well in all three sub skills as the mean scores are almost equal (74.32, 74.80 and 73.79)

## 4.6.4 Summary of All Island achievement of sub skills in the three subjects

As the above discussion reveals, there is a positive trend in the achievement of sub skills in all three subjects. With regards to the sub skills of Mathematics achievement there is a satisfactory improvement in all three skills with mean scores above 70.

In the achievement of language sub skills, even though there is a positive trend in achievement in all sub skills, in both First language and English language, writing skills need to be improved.

In section 4.7 provincial wise trends in achievement for all subjects between 2007 and 2009 will be summarized.

# 4.7 Provincial wise comparison of Sinhala, Tamil, English and Mathematics achievement (2007 and 2009)

## 4.7.1 Provincial wise comparison of Sinhala language achievement - 2007-2009

Figures 4.20 - 4.28 display the trends in achievement in the Sinhala language between 2007 - 2009.

According to these figures only in the North Western, Sabaragamuwa and the Eastern Provinces the percentages of high achievers increased over 2007.



Figure 4.20: Central Province achievement in Sinhala language- 2007 & 2009



Figure 4.21: Eastern Province achievement in Sinhala language - 2007 & 2009



Figure 4.22: North Central Province achievement in Sinhala language - 2007 & 2009



Figure 4.23: North Western Province achievement in Sinhala language - 2007 & 2009



Figure 4.24: Northern Province achievement in Sinhala language - 2007 & 2009



Figure 4.26: Southern Province achievement in Sinhala language - 2007 & 2009



Figure 4.25: Sabaragamuwa Province achievement in Sinhala language - 2007 & 2009



Figure 4.27: Uva Province achievement in Sinhala language - 2007 & 2009



Figure 4.28: Western Province achievement in Sinhala language - 2007 & 2009

Figures 4.29 -4.37 display the provincial wise Tamil language achievement over the period 2007 -2009

4.7.2 Provincial wise comparison of Tamil language achievement (2007 and 2009)



Figure 4.29: Central Province Tamil language achievement- 2007 & 2009



Figure 4.31: North Central Province Tamil language achievement- 2007 & 2009



Figure 4.30: Eastern Province Tamil language achievement- 2007 & 2009



Figure 4.32: North Western Province Tamil language achievement- 2007 & 2009



Figure 4.33: Northern Province Tamil language achievement- 2007 & 2009



Figure 4.35: Southern Province Tamil language achievement- 2007 & 2009



Figure 4.34: Sabaragamuwa Province Tamil language achievement- 2007 & 2009



Figure 4.36: Uva Province Tamil language achievement- 2007 & 2009



Figure 4.37: Western Province Tamil language achievement- 2007 & 2009

The Figures 4.29 - 4.37 reveal that, except in the Northern Province in all other provinces the percentage of high achievers in Tamil language has decreased over the period 2007 - 2009. This may have affected the lowering of the national mean score for the Tamil language as shown in Figure 4.1.

# 4.7.3 Provincial wise comparison of English language achievement (2007 and 2009)



Figure 4.38: Central Province English language achievement - 2007 & 2009



Figure 4.40: North Central Province English language achievement - 2007 & 2009



Figure 4.39: Eastern Province English language achievement - 2007 & 2009



Figure 4.41: North Western Province English language achievement - 2007 & 2009



Figure 4.42: Northern Province English language achievement - 2007 & 2009



Figure 4.44: Southern Province English language achievement - 2007 & 2009



Figure 4.43: Sabaragamuwa Province English language achievement - 2007 & 2009



Figure 4.45: Uva Province English language achievement - 2007 & 2009



Figure 4.46: Western Province English language achievement - 2007 & 2009

As the above Figures (4.38 - 4.46) indicate, there is an increase of high achievers in the English language in the North Central, North Western, Sabaragamuwa, Southern and Uva provinces. This increase over time is significant. On the other hand, while there is relatively no change in the performance in the Western province, in the other provinces there is a decrease in the percentage of high achievers. In the provinces where the percentage of high achievers is low, the percentage of low achievers is also quite high. This could be a reason for the All Island mean score for the English language not to be very high in spite of the positive trend shown in the improvement in some provinces.

### 4.7.4 Provincial wise comparison of Mathematics achievement (2007 and 2009)

Figures 4.47 - 4.55 display the learning achievement in Mathematics in 2007 and 2009



Figure 4.47: Central Province Mathematics achievement - 2007 & 2009



Figure 4.49: North Central Province Mathematics achievement - 2007 & 2009



Figure 4.48: Eastern Province Mathematics achievement - 2007 & 2009



Figure 4.50: North Western Province Mathematics achievement - 2007 & 2009



Figure 4.51: Northern Province Mathematics achievement - 2007 & 2009



Figure 4.52: Sabaragamuwa Province Mathematics achievement - 2007 & 2009



Figure 4.53: Southern Province Mathematics achievement - 2007 & 2009



Figure 4.54: Uva Province Mathematics achievement - 2007 & 2009



Figure 4.55: Western Province Mathematics achievement - 2007 & 2009

As the above figures indicate, there is a decrease in the percentage of high achievers in the year 2009 compared to 2007. This decrease may have affected the all Island mean score to decrease as shown in Figure 4.3.

#### 4.8 Summary

This chapter examined the trends observed in achievement of learning outcomes over the period 2003 -2009, in relation to three main subjects in the grade four curriculum. Further, it compared the performance in the First language, English language and Mathematics in 2007 and 2009. The trends observed show a positive trend over time (2003 -2009) in all the subjects. However, in some subjects in the achievement between 2007 and 2009 there is a negative trend shown.