

Conclusion and the Way Forward

6.1 Introduction

The purpose of this chapter is to discuss the main findings of the national assessment 2016. These findings will be discussed in relation to the objectives of the study and in accordance with the objectives of a national assessment (Kellaghan and Greaney, 2008) as mentioned in chapter 1.

- How well are students learning in the education system (with reference to general expectations, aims of the curriculum, preparation for further learning, or preparation for life)?
 - Do particular subgroups in the population perform poorly? Do disparities exist, for example, between the achievements of (a) boys and girls, (b) students in urban and rural locations, (c) students from different language or ethnic groups, or (d) students in different regions of the country?
 - Does evidence indicate particular strengths and weaknesses in students' knowledge and skills?
 - Do the achievements of students change over time?
- (Kellaghan and Greaney, 2008, p.9).

In order to find answers to the first question and the first objective of assessing the extent to which, patterns identified in the achievement of learning outcomes 2016 in mathematics, science and English will be discussed at national level

6.2 Patterns identified in the achievement of learning outcomes - 2016

6.2.1 National level performance

The overall performance in **mathematics** can be considered satisfactory with a mean score above 50%, that is 51.11, while the median is 47.50.

However, disparity in achievement prevails with approximately 32.72% of students scoring below 40 and 25% of students scoring above 70. The highest number of students falls within the marks range of 30-39.

The performance in **science** is not very satisfactory with a mean score of 41.76, while the median is 39.00.

Disparity in achievement prevails with approximately 50.86% of students scoring below 40. However, the highest number of students (18.61%) has scored between the marks range of 20-29.

The performance in English is very low with a mean value of 35.81 and a median value of 30. The highest number of students falls within the marks range of 20-29. Sixty eight percent of students have scored below 40 marks.

Therefore, it could be concluded that the majority of the students have scored low marks in science and English. On the other hand there is disparity in all island achievement in all three subjects.

The next objective is to find out whether certain subgroups in the population perform poorly and whether there are disparities in achievement among these sub groups.

6.3 Disparity in achievement among the sub groups

6.3.1 Provincial wise performance

The findings of the present study indicate that there are variations in provincial wise achievement in all three subjects.

Achievement wise the provinces fall into three categories.

With regards to mathematics achievement Southern, Western and Sabaragamuwa, with mean scores above the national mean (51.11) fall into category one.

North Central and North Western Provinces cluster in the middle. While Uva, Eastern, Central and Northern Provinces achievement is very much below the mean value.

When the science achievement is considered similar to the mathematics achievement Southern, Western and Sabaragamuwa have mean scores above the national mean (41.76). In contrast to mathematics in science North Western has also scored above the national mean. While North Central and Central Provinces cluster in the middle.

Uva, Eastern and Northern Provinces performance like in mathematics is quite below the national mean.

Provincial achievement in English is different to the other two subjects. Only Southern, and Western, have scored mean scores above the national mean (35.81) while Sabaragamuwa and Central Provinces cluster in the middle.

The other provinces performance is very much below the national mean.

Therefore, it could be concluded that disparities exist among the provinces with relation to all three subjects.

6.3.2 Achievement according to school types

The gap between the achievement of students in 1AB schools and 1C and Type 2 is wide in all three subjects.

In all three subjects the achievement curve of the 1AB schools is bimodal denoting that there are both high and low achievers. On the other hand, in 1C and Type 2 schools the curves are positively skewed indicating that majority of the students has scored low marks. While in mathematics majority of the students in these schools (Type 1C and Type 2) has scored between 30-39, in science and English the majority has scored between 20-29.

Therefore, it could be concluded that disparity in achievement exists between 1AB schools and 1C and Type 2 schools.

6.3.3 Achievement according to gender

In all subjects females have performed better than their male counterparts.

In all subjects while the male performance is lower than the all island mean score, female performance is above the all island mean.

Therefore, there is a gap between male and female performance in all three subjects.

6.3.4 Achievement according to medium of instruction

There is wide disparity in achievement among students belonging to different medium of instruction in all three subjects.

In all three subjects while the Sinhala medium students mean value is above that national mean, the Tamil medium students mean value is below the national mean.

6.3.5 Achievement according to location

Disparity in achievement can also be seen according to the location where the school is situated. In all three subjects the mean value of the schools located in urban areas is very much higher than that of the rural schools. This gap is eight points in science and nine points in mathematics. On the other hand, in the achievement of English the urban rural disparity is quite high with a difference in mean values of twelve points.

According to the above discussion it could be concluded that disparity in achievement exists among sub groups such as among different provinces, school types, male/ female and students studying in different medium of instruction and urban/rural areas.

Section 6.4 will discuss the identified particular strengths and weaknesses in students' knowledge and skills.

6.4 Strengths and weaknesses in students' knowledge and skills

Achievement in relationships, and reasoning is satisfactory. However, problem solving and majority of the competency levels in knowledge and skills and communication need to be improved.

Achievement of competency levels related to Biology is satisfactory to a certain extent as the average achievement is more than 50%. On the other hand, achievement of competency levels related to chemistry, earth science and physics need to be improved.

English language skill achievement is not satisfactory except for vocabulary. Grammar, and reading skills as well as writing which is the weakest skill have to be improved.

6.5 Trends in achievement 2014 -2016

6.5.1 National level trends

Achievement in mathematics

There is a slight increase in students' performance in 2016. The percentage of low achievers has decreased and the percentage of high achievers has increased. This has resulted in an increase in the mean value from 50.87 to 51.11

Achievement in science

There is a slight improvement in students' achievement in the year 2016. The percentage of low achievers has decreased and the percentage of medium level achievers has increased. This has resulted in an increase in the mean value from 41.16 to 41.76. However, the percentage of high achievers has not changed.

Achievement in English

A slight improvement in students' achievement can be seen in the year 2016. The percentage of low achievers has decreased and the percentage of high achievers has increased slightly. This has resulted in an increase in the mean value from 35.23 to 35.81.

It could be concluded that students' achievement has improved slightly over the period 2014 – 2016 in all three subjects evaluated.

6.5.2 Provincial level trends

There has been significant changes in achievement in certain provinces over the period 2014 -2016.

In the Central Province an increase in achievement is noted in all three subjects and these changes are significant. Similarly North Central and Southern Provinces records significant improvement in mathematics and English. Improvement in science achievement is seen in the Western Province.

On the other hand, a significant decline in achievement is recorded in the Eastern Province in all three subjects. Similar decline is recorded in the Uva Province in mathematics and science.

In all other provinces the changes either positive or negative is insignificant.

6.5.3 Trends according to school types

In mathematics achievement there has been a significant increase in achievement in 1C and Type 2 schools. On the other hand, similar significant increase can be seen in science achievement in Type 2 and 1C schools which is a positive trend. On the other hand, in English achievement there is a significant increase in 1AB and 1C schools.

6.5.4 Trends according to gender

A positive trend is seen in the achievement of English language when compared with 2014. In 2016, male performance has increased significantly. On the other hand, in science, female achievement has increased significantly there by widening the gap between male and female performance. In mathematics there is no significant change in achievement over the two year period.

6.5.5 Trends according to medium of instruction

Even though there are slight changes in the achievement of mathematics both among Sinhala and Tamil medium students during 2014-2016 these changes are not significant. On the other hand in both science and English achievement the Tamil medium students' performance has increased significantly which is a positive sign as it will reduce the gap in disparity.

6.5.6 Trends according to location of the school

The rural performance in all three subjects has increased significantly. In science and mathematics achievement the urban performance has decreased. Therefore, the gap between urban and rural seems to be narrowing.

6.6 What the findings reveal

As discussed in chapter 1, Sri Lanka is also committed to achieve the Sustainable Development Goals, especially Goal 4. That is “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. In other words to “leave no one behind”.

In this context findings of the national assessment of learning outcomes of grade 8 students reveal that much more effort is needed to achieving this target. At national level while mathematics achievement is satisfactory to a certain level, (50%) achievement in science and English is below at least 50% benchmark.

The comparison of achievement between 2014 and 2016 reveals a slight improvement. However, though slight this improvement is a positive sign. The need at present is to find out the factors that contributed to the improvement and sustain it through effective monitoring.

6.7 The way forward

Provincial level contribution

It was revealed that in both science and mathematics achievement at least three provinces and in English, two provinces have achieved mean values above the national mean. Therefore these provinces need to sustain this growth.

On the other hand, there are also provinces that have shown significant decline in achievement. Therefore, the provincial authorities need to have a systematic monitoring and support mechanism in place.

It is recommended that NEREC findings should be disseminated to provincial and zonal levels.

Subject wise discussions on improving the achievement level of students based on NEREC findings should be included in the annual plan.

Bridging disparities

As discussed in section 6.5 disparities in achievement in relation to school type, gender, medium of instruction and location continues.

However, the comparison between the achievements in 2014 -2016 revealed that in the science and English achievement in rural areas and in Tamil medium schools has increased. Similarly, increase in mathematics and science achievement in 1C and Type 2 schools and English in 1C and in male performance indicate that bridging the gap is possible. Therefore, it is necessary to identify best practices that contributed to these increases and disseminate them to other schools.

Achievement of competencies

It was stated in the 2014 report that “majority of the students had not been able to display satisfactory achievement in the competency levels expected to be achieved” p.81.

The same statement is applicable to the 2016 assessment. However, there are some positive changes that had taken place. Percentage of students that has achieved majority of the competency levels pertaining to science and mathematics has increased. They need to improve further. However, from 2014 -2016 there are positive changes.

On the other hand, some of the competencies of which the achievement was not satisfactory continues to be weak and has even declined. With regards to the achievement in the writing skills in English is very unsatisfactory. Therefore, these issues should have been addressed in a curriculum revision and Teacher Development programmes.

Classroom based assessment and the term end assessment should be designed more scientifically to test competency levels and learning outcomes.

Curriculum revision

Under theme 2 of the ESDFP one of the areas identified for improvement is the secondary stage revision of the national curriculum. The subject curriculum committees had already identified certain issues such as content overload, over weight of textbooks and lack of discovery learning through practical projects especially in science. The national Assessment 2016 confirms that student achievement in certain competencies remain weak. Therefore, there is a doubt as to whether the proposals of the ESDFP has been implemented.

It is recommended that the National Institute of Education review whether these competencies and competency levels identified for all three subjects – mathematics, science and English have been addressed in the curriculum revision.

The content of the science curriculum was over burdened and there was an imbalance between subject content. Further, there should be more practical work and activities to enable students to use science in their day to day activities.

English language curriculum should have been revised to provide more opportunities to apply the basic concepts in developing reading and writing skills. Reordering of the competency levels was also necessary as at present competency level for creative

writing precedes writing a brief note. Majority of the students could not write a simple sentence. Hence, the syllabus, the teaching content and the methodology need revision.

Teacher development

Teachers need to identify the students with exceptional abilities as well as learners needing special attention. Further, they should be able to adapt the learning material to provide fast track programmes for the best students and remedial programmes for the low achievers. This teacher development programmes should include these skills as well as to train teachers in the use of strategies such as mixed ability and same ability groupings, action research to find out solutions to context specific problems.

Teachers who pass out of National Colleges of Education should be aware of the National Assessment results and how they can be utilized to improve classroom teaching and learning process.

Research and monitoring

Further research based on the National Assessments should be carried out at provincial and zonal levels. These should be annual events in the year planner.

Research grants given by the Ministry to teachers could be for action research based on NEREC findings to find out best practices.

Conclusion

The purpose of the national assessment was not only to provide information on the state of the achievement of learning outcomes, but also that information should lead to improvement in quality learning and teaching. It is hoped that the findings will provide feedback to the curriculum and teaching learning practices in order to achieve better outcomes for students and to inform policy.