

Chapter Six

Reaching the Level of Mastery

6.1 Introduction

During the first half of the 20th century it was the usual practice to categorize students in to five Grades, A, B, C, D, E/F. A is the highest category and E/F is the lowest category and other Grades lie in between. During the second half of the century some new approaches in grading students were seen. Competent, Nearly Competent, In-Competent are

Mastery....

The data obtained from administering the test is used to provide supplementary instruction to the student to help him to overcome his problems.

Lynn, R.N., and Greenland, N.E.,

-Bloom B.S.

some of the gradings that have come into the field of measurement. At the same time, a very similar grading process is been used, categorized as Mastery, Near-Mastery and Non-Mastery. The decision of whether the student has reached the level of mastery and other Grades are taken on the basis of the achievement of the percentage in desired learning outcomes tested in the event or, by the number of learning outcomes tested. In both these approaches students who score (when the total marks is 100) 80-100 marks or in other words more than 80% of the instructional objectives measured are categorized as those who have reached the level of Mastery. Students who have scored 60-79 marks (achieved 60-79 instructional objectives) have been categorized as those who have reached the level of Near Mastery. Students obtaining 59 marks or below (achieving 59% instructional objectives or below) are categorized as those attained Non Mastery. This categorization is applicable when students are Graded as Competent, Nearly Competent and In-competent. This grading process happens to be more useful to the classroom teacher because it paves the way to understanding what sort of remedial intervention or feedback is needed for their students. This grading methodology is more profitable for curriculum developers, because it gives them an opportunity to understand the complexity or, if not the suitability of the content material provided for the grade level when compared with the achievement levels of the students. In this chapter, the achievement levels of students are discussed

based on this three major gradings namely Mastery, Near Mastery and Non - Mastery.

6.2 Categorization of Students According to Their Achievement Levels in First Language

Table: 6.1 - The Percentage of Students Reaching the Level of Mastery in First Language

Grading		2005	2008	Difference
Reaching the level of mastery scoring 80 marks and above		12.2%	13.3%	+1.1%
Reaching the level of near mastery scoring in between 60 marks and 79		41.7%	41.6%	-0.1%
Reaching the level of non mastery scoring 0 marks to	scoring 40-59	29.9%	26.3%	-3.6%
	scoring 20-39	14.9%	14.4%	-0.5%
	scoring 0-19	1.3%	4.4%	+3.1%

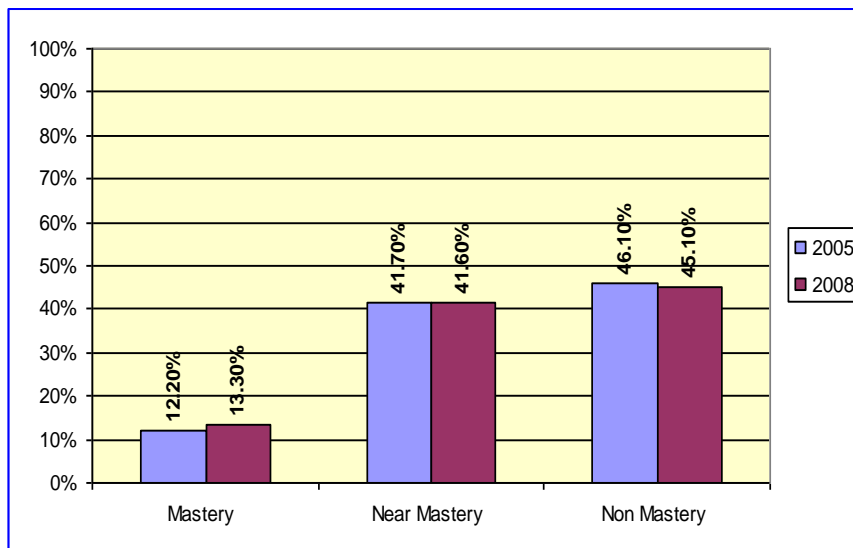


Figure 6.1: The Percentage of Students the Reaching the Level of Mastery in First Language

Percentage values of the number of students in the levels of Mastery, Near Mastery and Non - Mastery in First Language, in the years 2005 and 2008 are given in Table 6.1 and Figure 6.1. In year 2008, the percentage if students in the category of mastery improved by 1.1 percent. As a result, the percentage in the category of non mastery has decreased from 46.1 to 45.1.

Though this is a favorable improvement in First Language, the problem is whether this improvement is adequate, as the percentage of students reaching the level of mastery is around 13.3 percent. It would have been preferable if the percentage in near mastery category were reduced. In both years the percentages of students falling within the category of near mastery have been around 41.6. As students in this category have scored sixty marks and above (up to 79) if the teachers and curriculum developers and the other monitoring personnel has taken a keen interest, those scoring around 60 - 79 marks could have been shifted to the category of mastery. For this, a systematic intervention programme should have been implemented. If this had happened, another larger percentage of students may have reached the level of mastery. Secondly, though the percentage of students in the non-mastery group has come down from 46.1 to 45.1 in year 2008, the percentage of students scoring 0 - 19 marks have increased by 3.1 percent. This problem merits serious consideration, as the lowest scoring group has increased. What really happens in the classroom is that this group generally tends to be repeaters in the same class. When the whole percentage of students in the non-mastery group is taken together, it has to be concluded that they do not possess the entry behavior level in First Language that is needed to proceed with studies in Grade 09 next year. As there is a high positive correlation above 0.6 between First Language and other core subjects; this will affect negatively their studies in other subjects as well. To overcome this problem a diagnostic intervention programme and a better monitoring and supervision programme at internal and external levels has to be launched. The need is to minimize the percentage in the non- mastery and near mastery categories and increase the percentage in the mastery group.

6.3 Categorization of Students According their Achievement Levels in Science and Technology

In science and Technology there is an increase in the mastery group. The percentage has increased from 6.9 up to 11.5. In year 2008, the percentage of the near-mastery group also increased by 2 percent. This total increase in the two groups by 6.6 percent has resulted in a reduction by 6.6 percent of students in the

non- mastery group. Yet, it would have been preferable if the percentage of students in the near mastery group could have been reduced and, promoted to mastery level.

Table 6.2 - The Percentage of Students Reaching the Level of Mastery in Science and Technology

Grading		2005	2008	Difference
Reaching the level of mastery scoring 80 marks and above		6.9%	11.5%	+4.6%
Reaching the level of near mastery scoring in between 60 marks and 79		28.7%	30.7%	+2%
Reaching the level of non mastery scoring 0 marks to	scoring 40-59	35.8%	32.5%	-3.3%
	scoring 20-39	25.9%	22.5%	-3.4%
	scoring 0-19	2.7%	2.8%	+0.1%

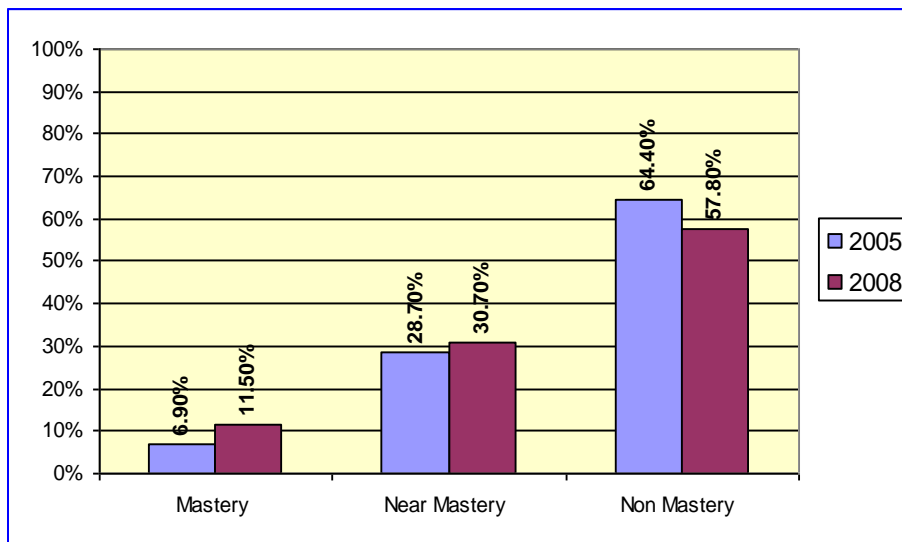


Figure 6.2: The Percentage of Students the Reaching the Level of Mastery in Science and Technology

However, it has to be noted that when compared with First Language, the position of Science and Technology is better. When the near mastery group in First Language is around 41.0 percentage, in Science and Technology only a percent age of around 30.0 has fallen into this group. As happened in First Language, in Mathematics too the percentage scoring 0 - 19 marks increased, in 2008. What can be assumed from these figures is that a large percentage of students around 50.0 percent, had no readiness to learn in Grade 08, which has resulted in a poor

achievement level, end of year. This could have been remedied at Grade 07 level. Paying more attention to diagnostic testing programmes and remedial intervention strategies is therefore an urgent need.

6.4 Categorization of Students According Their Achievement Levels in Mathematics

Data given in Table 6.3 and Figure 6.3 gives the percentages of students falling into the groups of mastery, near-mastery and non-mastery in Mathematics, for the years 2005 and 2008.

Table 6.3 - The Percentage of Students Reaching the Level of Mastery in Mathematics

Grading		2005	2008	Difference
Reaching the level of mastery scoring 80 marks and above		3.8%	6.7%	+2.9%
Reaching the level of near mastery scoring in between 60 marks and 79		15.9%	21.9%	+6%
Reaching the level of non mastery scoring 0 marks to	scoring 40-59	37.6%	35.7%	-1.9%
	scoring 20-39	38.8%	32.8%	-6%
	scoring 0-19	3.9%	2.9%	-1%

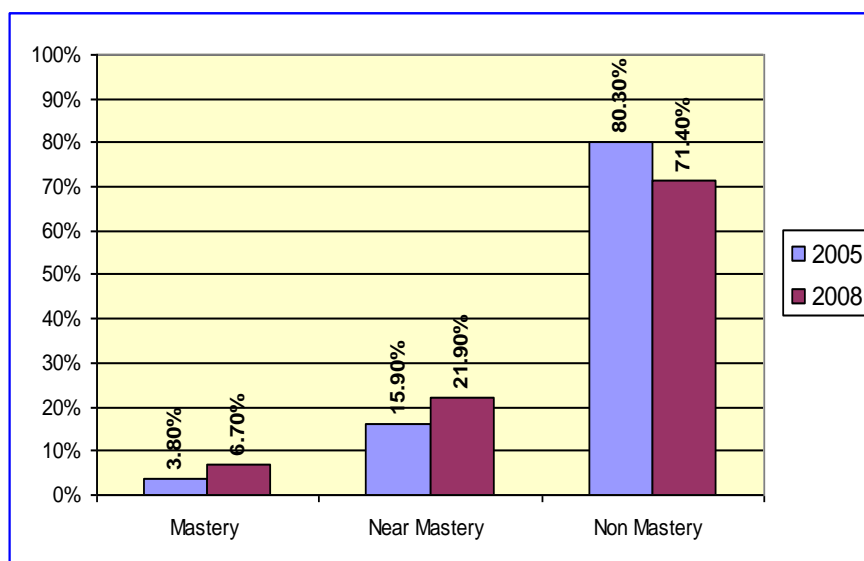


Figure 6.3 : The Percentage of Students Reaching the Level of Mastery in Mathematics

According to the values in Table 6.3 and Figure 6.3 the largest increase in Mathematics is in the group of near mastery. Relative to the performance the other two subjects, the largest reduction (- 8.9) is seen in the non mastery group. This is a favorable condition. This reduction in the non-mastery group is due to the reduction in the percentage of students falling into the class interval of 0-19.

Considering the patterns of achievement, it has to be concluded that there is a problem of suitability of the curriculum content in all three subjects First Language, Science and Technology and Mathematics. If measures have been taken to pre-test the curriculum to establish the grade norms for the whole period of the junior secondary cycle, better achievement levels of students could have been targeted. As the curriculum is organized on a spiral methodology this is not solely a problem of Grade 08 curricular. It is a problem with the whole junior secondary curricula, in which the process of vertical integration (using the spiral methodology) and the horizontal integration (using a balance among the core subjects) have to be revitalized. This should be complemented with a pre-testing programme for the curriculum before its introduction through out the country. A programme to identify the essential learning continuum of the core subjects after one year's implementation is necessary. For the purpose of designing the essential learning continuum the "Rational approach" which is practiced in countries like India or, the "Statistical approach" which is implemented in some of the western countries, may be adopted. The desired learning outcomes and the essential learning continuum has to be printed and made available for students, teachers and parents, so that the three groups may have a dialogue among them in making their children / students reach the level of mastery in the core subjects by end of year, if necessary a progress mapping exercise can be implemented for the students, that will complement the need of for focusing them on the targeted learning achievement level.

6.5 Summary

The grading of students as who have reached the levels of mastery, near mastery and non mastery or, competent, nearly competent and incompetent is more useful for the classroom teacher. It helps understand what sort of intervention or feedback is needed, for their students. This grading methodology is profitable for curriculum developers, for it gives them an opportunity to understand the suitability of the content materials provided for the Grade 08 level. In First Language, more than 45 percent of the students were in the non mastery group, in both years. The mastery group is around 13 percent, which seems insufficient. There is a remarkable improvement in the group reaching the level of mastery in Science and Technology. The percentage in the group in non mastery is too high. Though the percentage of students in the mastery group has increased in Mathematics, what is noteworthy is that the highest percentage falls within the non mastery group. Not only at the learning-teaching stage, but also at the stage of curriculum development, this should be considered more seriously.

Key points

Reaching the Level of Mastery

Mastery, Near Mastery and Non Mastery

- A process of grading students according to the percentage of learning outcomes specified in the curriculum (units or sample tested).
- Similar to the grading of students as Competent, Nearly Competent and Incompetent

First Language

- | | | |
|----------------|---------------|------------|
| • Mastery | - 2005- 12.2% | 2008-13.3% |
| • Near Mastery | -2005- 41.7% | 2008-41.6% |
| • Non Mastery | -2005-46.10% | 2008-45.1% |

Science and Technology

- | | | |
|----------------|--------------|------------|
| • Mastery | - 2005- 6.9% | 2008-11.5% |
| • Near Mastery | -2005-28.7% | 2008-30.7% |
| • Non Mastery | -2005-64.4% | 2008-57.8% |

Mathematics

- | | | |
|----------------|-------------|------------|
| • Mastery | -2005-3.8% | 2008-6.7% |
| • Near Mastery | -2005-15.9% | 2008-21.9% |
| • Non Mastery | -2005-80.3% | 2008-71.4% |
| • | | |

Intervention Needed

- Pre- tested curriculum
- Distribution of desired and essential learning objectives in printed form
- Progress mapping of students.