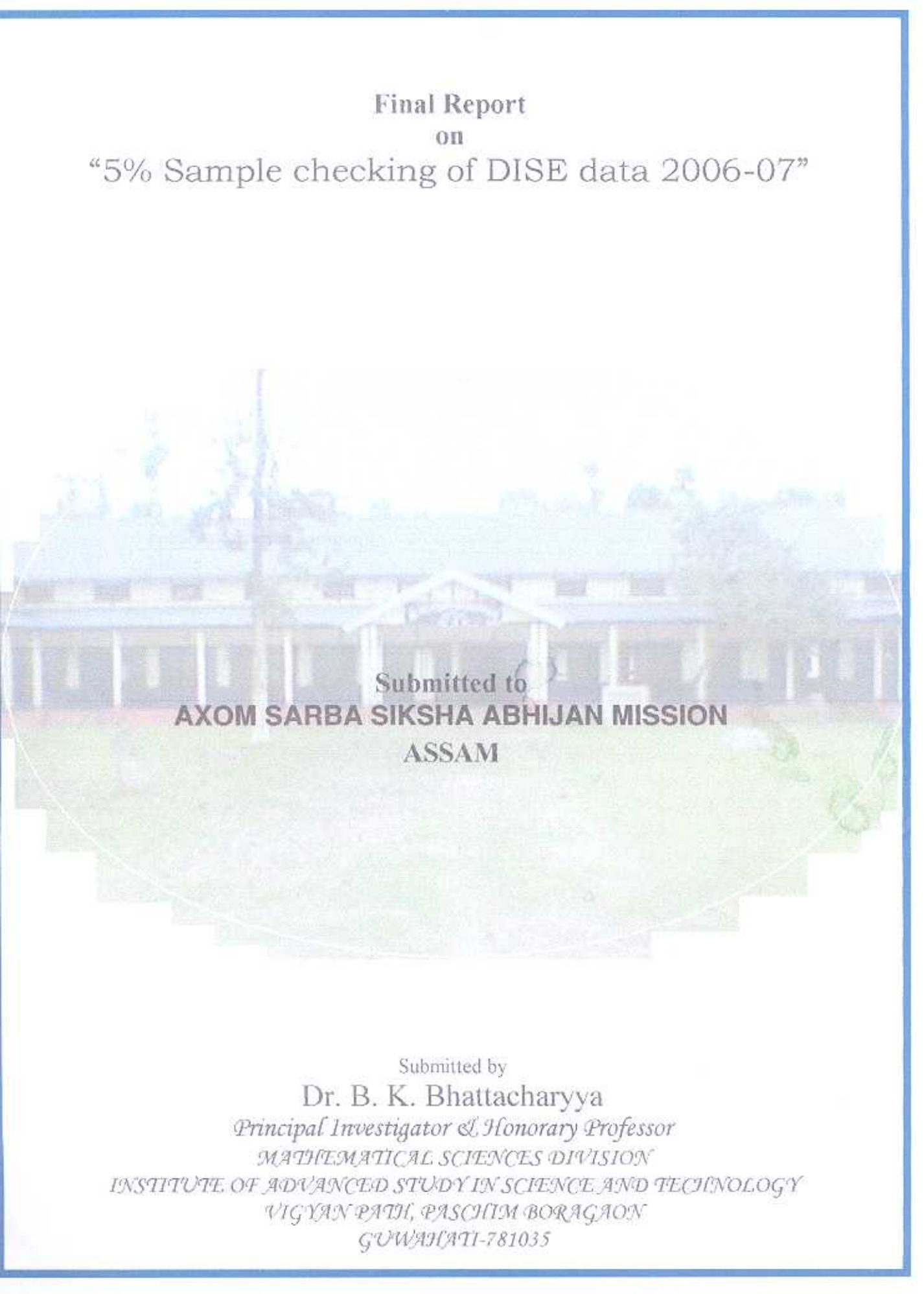


Final Report
on
“5% Sample checking of DISE data 2006-07”



Submitted to
AXOM SARBA SIKSHA ABHIJAN MISSION
ASSAM

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Introduction

Axom Sarba Siksha Abhijan Mission Collect data from schools through 'District Information on school Education (DISE)' on a regular basis. To verify genuineness of DISE data regarding quality, reliability and validity, it has been felt necessary to get the DISE data checked through a sample survey. Such study has already been completed for DISE data 2005-06. That study was confined to three blocks of each of the two districts namely, Nagaon and Kokrajhar.

The current sample survey i.e. "5% Sample Checking Survey of DISE data 2006-07", has been extended over three more districts, namely Lakhimpur, Dhubri and Jorhat. Besides, all the blocks of the districts are to be considered in this study. The selected three districts are having altogether 19 blocks as shown below:

District	No. of blocks	Name of block
Lakhimpur	6	Lakhimpur, Dhakuakhana, Bordoloni, Nowboicha, Narayanpur, Bihpuriya
Dhubri	7	Gauripur, South Salmara, Golakganj, Agomoni, Mankachar, Bilasipara, Chapor
Jorhat	6	Jorhat, East Jorhat, Titabor, Central Jorhat, North West Jorhat, Majuli

Objectives:

The broad objective of the study is :

To ascertain quality, reliability and validity of DISE data 2006-07. Other objectives are to bring out meaningful suggestions based on the feedback from the investigators.

Methodology:

To achieve the objectives of the study the following methodology was adopted :

1. Collection of Information from Secondary Source:

The block-wise lists of Lower primary and Upper primary schools for each of the selected districts were collected from the Directorate of SARBA SIKSHA ABHIJAN MISSION. The list of schools constitute the sampling frame. From the list 5% schools were selected by adopting the technique of simple random sampling without replacement.

2.Collection of Data from Primary Source:

The District Mission Co-ordinators of SARBA SIKSHA ABHIJAN MISSION were contacted and they were requested for issuing necessary instructions to the Head teachers/Head Masters of the selected schools for providing necessary data to the survey team.

The members of the survey team then personally visited the selected schools and collected the necessary data as per the prescribed schedule/ Questionnaire.

3. The collected data have been compiled, processed, tabulated and analyzed by adopting appropriate statistical tools.

4.The survey data then have been compared with corresponding DISE data and the deviations, if any, computed. Further the reliability and validity of DISE data have been examined by computing reliability coefficient and validity measure .

Reference Date: The DISE data 2006-07 are as on 30th September/2006.

Analysis of data

Various data collected as per the prescribed Schedule/Questionnaire have been statistically analyzed for each selected district. Details of the analysis follow:

Lakhimpur District

1. Category of selected schools:

Lakhimpur district consists of 6 (Six) blocks namely **Lakhimpur**, **Dhakuakhana**, **Bordoloni**, **Nowboicha**, **Narayanpur** and **Bihpuriya**. The names of blocks with selected number of schools are being shown in Table 1(a).

From the Table No.1(a), it is observed that the 102 sample schools in the district included 80 LP, 17UP and 5 LP+UP schools. Out of this Lakhimpur Block consists of the highest no. of LP schools numbering 19, while Narayanpur Block consists of the highest no. of UP schools numbering 8. Out of the 7 blocks, only in Lakhimpur blocks, Nowboicha block and Bihpuria block, there are 1, 2, and 2 LP+UP schools respectively.

2. Type of selected schools:

Table No. 2(a) shows the no. of schools in the sample according to type in Lakhimpur district. It is observed from the table that in none of the six blocks purely boys or purely girls LP school was in existence. Ofcourse one purely girls UP school was found in Bihpuria block. All the other 101 schools were of co-education type.

3. Furniture for Sitting:

Table No. 3(a) reveals that out of 102 sample schools in Lakhimpur district 56 schools have furniture for sitting of students while the remaining 46 schools have furniture for some students only. It is heartening to note that even as many as 7 out of 17 UP schools also report that they have furniture for some students only.

4. Source of Drinking Water:

Referring to Table No. 4(a), it is noted that in as many as 53 schools out of 102, source of drinking water is hand Pump (Tube well). Only 3 schools have tap water. 12 schools report that they have no drinking water source. *This shows that 12% of the schools are without any source of drinking water.*

5. Type of school building:

Information revealed by the Table No. 5(a) is somewhat encouraging in the sense that out of total 102 schools as many as 71 schools have pucca buildings while the remaining 31 schools have at least partially pucca building. No school reported to have kuccha building or tent or no building at all.

6. Amenities available:

Referring to Table No. 6(a), it is noticed that only 3 schools out of 102 schools have the electricity facility. Also out of these 102 schools, 19 schools have common toilet, 8 schools have separate toilet for girls, 47 schools have playground. *The data reveal that there are a good number schools without toilet facilities and only 3% of the sample schools are having electricity facility.*

7. Boundary wall:

From Table No.7 (a), shows that, out of 102 schools, 3 schools have pucca Boundary wall, 9 schools have pucca Boundary wall but broken, 17 schools have Barbed wire fencing, 1 school has Heges, 72 schools have no boundary wall. *71% of the schools are without boundary wall of any kind.*

8. Enrolment Pattern:

Table No.8(a) shows the enrolment pattern of the schools in Lakhimpur Districts in the year 2006 in different blocks. This table shows that in 80 LP schools there are 5679 students, out of which 2805 are boys and 2874 are girls, in 17 UP schools total enrolment is 1354, out of which 570 are boys and 784 are girls, in 5 LP+UP schools total enrolment is 619 out of which 334 are boys and 285 are girls.

9. Teachers Position:

Table No. 9(a) shows that in Lakhimpur district in 80 LP schools there are 257 teachers in Position against 305 sanctioned posts. In Dhubri district 235 teachers are in position against 268 sanctioned post and in Jorhat district there are 258 teachers in Position against 250 sanctioned posts. It is observed that except Dhubri district, the other two districts have more Teachers in position than the sanctioned ones. In up schools also Teachers position is similar i.e. higher number of teachers than the sanctioned ones are in Lakhimpur and Jorhat districts. Of course, in the LP+UP and HS+UP categories number of teachers in position is lower than the number of sanctioned posts in all the three districts.

Dhubri District

1. Category of Selected schools:

Dhubri District consists of 7 blocks namely **Gauripur, South Salmara, Golakganj, Agomoni, Mankachar, Bilasipara** and **Chapor**. The name of blocks with selected no. of schools are being shown in Table 1(b).

From Table No.1 (b), it is observed that the 99 sample schools included 77 LP, 18 UP 2 LP+UP and 2 UP+HS schools. Out of these, Bilasipara block consists of the highest no. of LP schools numbering 23 , while South Salmara block consists of highest no. of UP schools numbering 5. Out of the 7 blocks only in Gauripur, Agomoni and Chapor block, there are 1 LP+UP and 1 UP+HS, 1 LP+UP and 1 UP+HS schools respectively.

2. Type of Selected schools:

Table 2(b) shows the no. of schools in the sample according to type in Dhubri District. It is observed from the table that there is one boys school and seven girls schools containing 1 LP, 5 UP and 1 HS school. All the other 91 schools are of co-educational type with 76 LP, 13 UP and 2 LP+UP schools.

3. Furniture for sitting:

Table 3(b) reveals that out of 99 sample schools in Dhubri District 24 schools have furniture for sitting of students while 71 schools have furniture for some students only. It may be mentioned that 4 schools have reported as having no furniture for students to sit. *This shows that 4% of the schools are having no furniture for students.*

4. Source of Drinking water:

Referring to Table No. 4(b), it is noticed that regarding drinking water sources in the schools of Dhubri District., there are 78 schools having hand pump 3 schools have well , 2 schools have tap water , 5 schools have other facility for drinking water and 11 schools have no drinking water source at all. *The reveal that 11% schools are without source of drinking water.*

5. Type of School building:

From Table No. 5(b) it is noticed that out of 99 schools , 38 schools are having pucca buildings . Also 45 schools have partially pucca buildings, 15 schools have kuccha buildings and 3 schools have no building. No school reported to have tent.

6. Amenities Available:

Table No. 6(b) reveals that out of 99 schools, 10 schools have electricity facilities , 42 schools have common toilet , 14 schools have separate toilet for girls and 58 schools have playground. *This shows that 10% of the sample schools only nhave electricity facility. A good number of schools are without toilet facility.*

7. Boundary Wall:

Referring to Table No. 7(b), it is noticed that in the sample schools, 10 schools have pucca boundary wall , 10 schools have pucca boundary wall but broken , 4 schools have barbed wire fencing , 1 school has heges . The significant point is that out of 99 sample schools, 74 schools have no boundary wall of any kind. *In other words 74% schools are without boundary wall.*

8. Enrolment pattern:

Table No. 8(b) shows the enrolment pattern in the schools of Dhubri Districts in the year 2006 block wise . This table shows that in 77 LP schools there were 9645 students, out of which 4872 are boys and 4773 are girls. In 18 UP schools there are 2600 students, Out of which 985 are boys and 1615 are girls. In 2 LP+UP schools there are 472 boys and 462 girls & in 2 HS+UP schools there are 204 boys and 181 girls. The highest deviation between the DISE data and sample survey data is found in girls enrolment of LP school and the figure is 205 .

9. Teacher Position:

Table No.9(b) reveals the teacher position of Dhubri Districts . It shows that 235 teachers are in position against 268 Sanctioned post in LP schools , 105 are in position against 117 sanctioned post in UP schools , 12 are in position against 16 sanctioned post in LP+UP schools and 14 are in position against 16 sanctioned post in UP+HS schools . From the data is observed that there are lesser number of teachers in position than the sanctioned number in all categories of schools. *This indicates that some posts of teachers are lying vacant.*

Jorhat District

1. Category of selected schools:

Jorhat District consists of 6 blocks namely **Jorhat, East Jorhat, Titabor, Central Jorhat, North West Jorhat** and **Majuli**. The names of blocks with selected no. of schools are being shown in Table 1(c)

From Table No. 1(c), it is observed that the 100 sample schools included 69 LP, 21 UP, 4 LP+UP and 6UP+HS schools. Out of these Majuli block consists of highest no. of LP schools numbering 24, while Central Jorhat block consists of the highest no. of UP schools numbering 5. Out of the 6 blocks, Jorhat, Titabor and Majuli block consist of 2, 1 and 1 LP+UP schools respectively. Again Jorhat, East Jorhat and Titabor blocks consist of 3, 2 and 1 UP+HS schools respectively.

2. Type of selected schools:

Table 2(c) shows the no. of schools in the sample according to type in Jorhat District. It is observed that only one school is Purely boys school located at Jorhat block. Also 4 schools are pure girls schools located at Jorhat, East Jorhat and Central Jorhat block. All other 95 schools are co-education type.

3. Furniture for sitting:

Table 3(c) reveals that out of 100 sample schools of Jorhat District 55 schools have furniture for sitting of the students while the remaining 45 schools have furniture for some students only. *None of the sample schools has reported to have no furniture for all students.*

4. Source of drinking water:

Referring to Table No. 4(c), it is noticed that in as many as 70 schools out of 100, source of drinking water is hand pump. Only 7 schools have well. 8 schools report that they have tap water as source of drinking water and 2 schools report that they have other facility. 13 schools report that they have no any source of drinking water.

5. Type of School Building:

Information revealed by the Table No. 5(c) is somewhat encouraging in the sense that out of 100 sample schools as many as 65 schools have pucca buildings while the remaining 31 schools have atleast partially pucca building. No school reported to have tent or no building at all. Only 4 schools reported to have Kuccha building.

6. Amenities available:

Referring to Table No. 6(c), it is noticed that 22 LP , 7 Up , 1 LP+UP and 5 UP+HS schools have electricity facility. 37 LP , 12 UP , 2 LP+UP and 4 UP+HS schools have common toilet , 5 LP, 5 UP , 4 UP+HS schools have Separate toilet for girls .13 LP, 13 UP , 2 LP+UP and 1 UP+HS schools have playground.

7. Boundary wall:

Table No. 7(c) shows that 22 schools have Pucca boundary wall, 13 schools have pucca boundary wall but broken, 17 schools have barbed wire fencing , 1 school has Heges, 4 schools have other boundary wall , while 43 schools have no any boundary wall.

8. Enrolment pattern:

Table 8(c) shows the student status of the selected schools of Jorhat District block wise for the year 2006. This table shows that in 69 LP schools there are 4771 students, out of which 2444 are boys and 2327 are girls, in 21 UP schools there are 1655 students out of which 859 are boys and 796 are girls, in 4 LP+UP schools there are 560 students , out of which 294 are boys and 266 are girls, in 6 UP+HS schools there are 1309 students out of which 682 are boys and 627 are girls.

9. Teachers Position:

Table 9(c) reveals the teacher position in schools of Jorhat District. Here we have found the 258 teachers are in position against 250 sanctioned post in LP schools, 118 are in position against 112 sanctioned post in UP schools , 24 are in position against 33 sanctioned post in LP+UP schools and 70 are in position against 94 sanctioned post in UP+HS schools. *The data shows that in LP schools and UP schools , higher number of teachers than the sanctioned ones are in position.*

COMPARATIVE ANALYSIS OF THE THREE DISTRICTS

To have a comparison among the three districts, Tables 10, 11, 12, 13, 14, 15 and 16 are showing the position of parameters, Category of schools, Students Enrolment, Teachers In Position, Types of Amenities, Sitting arrangement, Condition of boundary wall and Source of drinking water respectively.

For these parameters a comparison of the districts is being done. Further corresponding DISE data 2006-07 are being shown in the same table and deviations of the DISE data from the sample survey data are also being computed. Details of comparative study are described below.

1. Categories of Schools:

5% Samples selected from the three districts consists of a total of 301 schools. Table 12 shows the breakup of different categories of schools selected. It is to be noted that number of schools included in the sample were more or less equal from all the three districts, it being 102 schools from Lakhimpur, 99 from Dhubri and 100 from Jorhat. While Lakhimpur district had the highest number of LP schools (80), and LP+UP schools(5). Jorhat district had the highest number of UP(21) and UP+HS (6) schools. [Fig 1]

2. Students Enrolment:

In LP schools enrolment of boys and girls moves side by side. Enrolment in LP schools in Dhubri district is much higher than that in Lakhimpur or Jorhat district. Numbers of selected LP schools were 80 in Lakhimpur, 77 in Dhubri and 69 in Jorhat. Deviation (ignoring sign) in case of boys of DISE data from Sample Survey data is founded to be highest in Jorhat district and in case of girls, it is in Dhubri district.

In UP and LP+UP schools enrolment of both boys and girls are highest in Dhubri district and deviation is highest in Jorhat district for girls and in Lakhimpur district for boys. In LP+UP schools enrolment of both boys and girls and also deviation are found in Dhubri district.

UP+HS schools were in Dhubri and Jorhat districts. For both boys and girls enrolment in Jorhat district and also the deviation were higher in Jorhat district.

The situation has been depicted by bar diagram (fig. 2, fig 3 and fig 4).

Fig 1

Category wise no. of Schools in the 3 districts

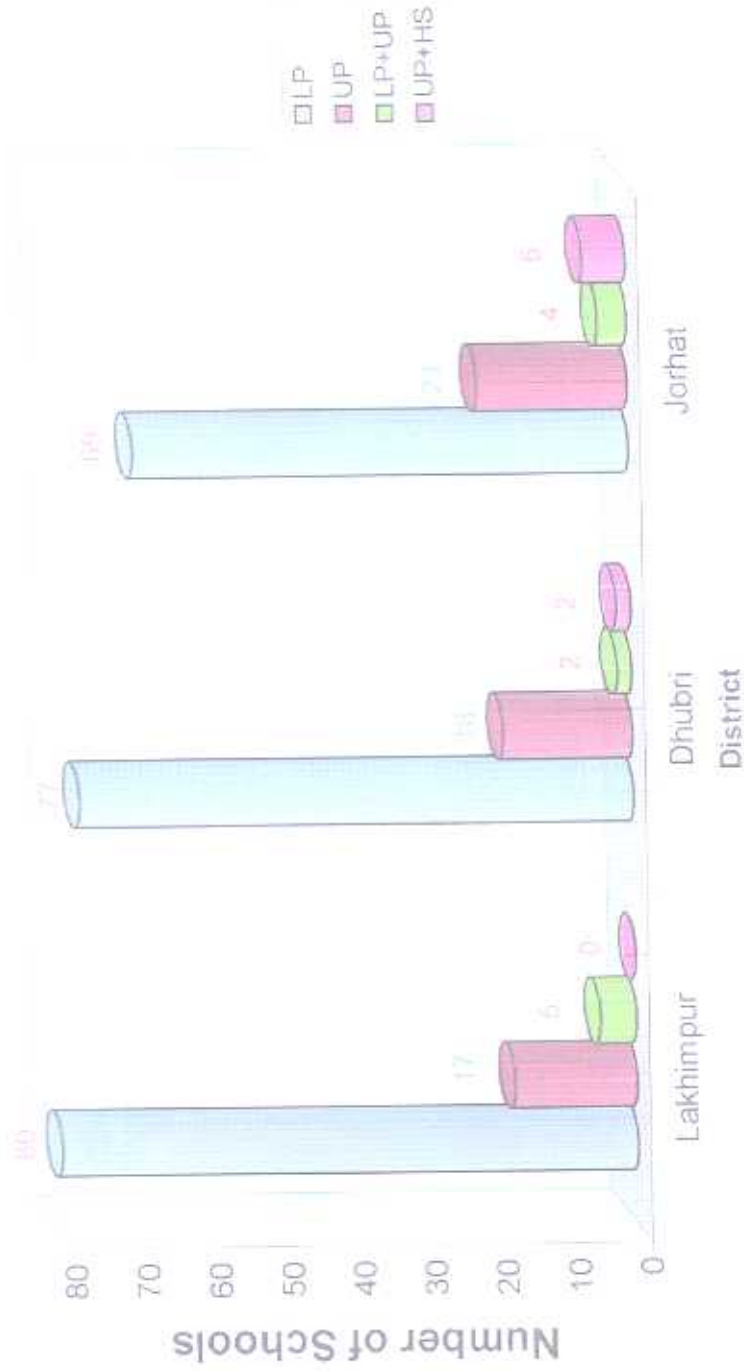


Fig 2

Student Status for the year 2006 in Lakhimpur District

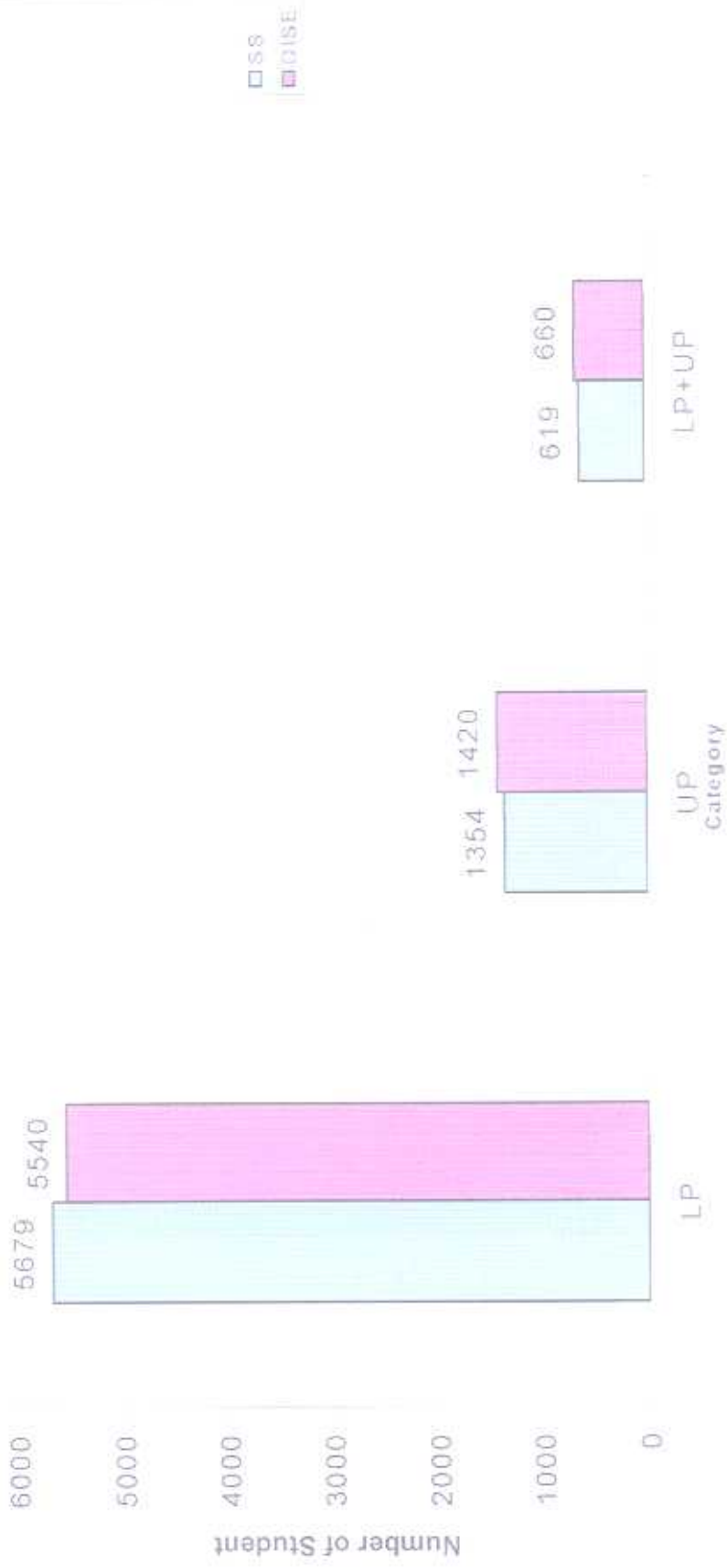


Fig 3

Student Status for the year 2006 in Dhubri District



Fig 4

Student Status for the year 2006 in Jorhat District



3. Teachers In Position:

Table 12 shows the number of teachers in position as recorded in Sample Survey and DISE data 2006-07. The deviations also have been compared. The results reveal that DISE data more or less tally with sample survey data, deviations being not high enough.

4. Types of Amenities:

Tables 13(i) and 13(ii) give the number of schools with different amenities like Electricity, Common Toilet, Separate Toilet for girls and Play Ground. In this category deviations of Sample Survey data from DISE data are negligible.

The data have been diagrammatically represented (Fig 5). It is to be noted that essential amenity, namely electricity is available only to 3% schools in Lakhimpur, 11% in Dhubri and 35% in Jorhat district.

5. Sitting Arrangement:

Tables 14(i) and 14(ii) shows the sitting arrangement with number of schools of different categories as recorded in Sample Survey and DISE data. Deviations of the two sets of values are also being shown. It is somewhat pleasant to note that at least in two districts, namely Dhubri and Jorhat all LP and UP schools in the sample report to have furniture for sitting the students. Ofcourse, DISE data reveal that there are a few LP and UP schools without furniture.

6. Boundary Wall:

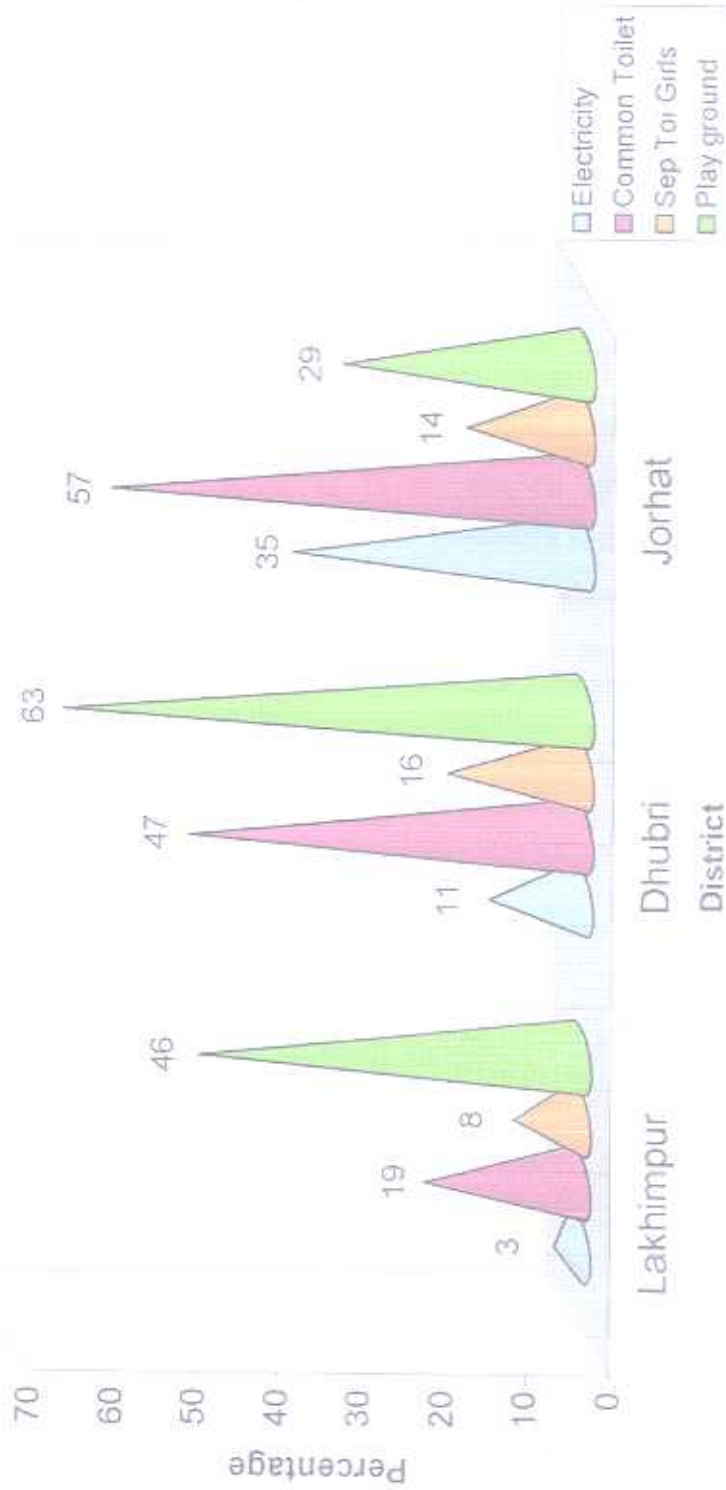
Table 15 reveals that in Dhubri district as high as 74% schools have no boundary wall, while Lakhimpur and Jorhat districts are having 71% and 49% schools without boundary wall.

7. Source of Drinking Water:

Table 16 reveals the position of source of drinking water in the sample schools. It is heartening to note that there is no any source of drinking water in as many as 25 nos. of LP schools out of a total of 226 in the three districts. In other words 11% Sample LP schools in the three districts do not have any source of drinking water. Not only in LP schools, even in 8 UP schools out of 56 in the three districts also are without any source of drinking water. That means 14% of UP schools also do not have any source of drinking water. In Lakhimpur district at least all the LP+UP schools have some source of drinking water, but in Dhubri and Jorhat districts 1 and 2 LP+UP schools respectively are without any source of drinking water.

Fig 5

Percentage of Schools with Amenities available in the 3 districts



Quality, Reliability and Validity of DISE Data 2006-07.

Quality:

So far as Quality of DISE data is concerned, it may be stated that in some cases deviations of DISE data from Sample Survey data are considerable. This might be due to some wrong entry or no entry here and there. Otherwise the DISE data are mostly Quality data.

Reliability:

A test is like a measuring instrument. One of the important characteristics of any measuring instrument is how reliably it measures. In the simplest term reliability means consistency. If the measurement is reliable, it should give consistent results when applied to the same individuals from time to time. Similarly, a reliable test should yield stable and trustworthy results when applied to same subjects on different occasions. Coefficient of reliability is some sort of self-correlation of a test.

In the present study, the DISE data 2006-07 may be said to be reliable if the 5% sample checking shows similar results.

Methods of determining reliability:

The commonly used procedures of determining reliability co-efficients are –

- (1) Test-retest method.
- (2) Alternate or parallel forms method.
- (3) Split-half technique and
- (4) Rational equivalence.

For our study materials, for testing the reliability of DISE data the Test-retest method is appropriate. The questionnaires used for DISE data collection and 5% Sample Checking are the same and the respondents are also the same. As such this method is appropriate.

The Test-retest method:

Repetition of a test is the simplest method of determining agreement between two sets of scores. The test is given and repeated on the same group and the correlation computed between the first and second sets of scores. This correlation coefficient is called the reliability coefficient of the test. Thus, the reliability coefficient of a test in test-retest method is

$$r_n = \frac{\sum XY - \frac{\sum X \sum Y}{n}}{\sqrt{\left\{ \sum X^2 - \frac{(\sum X)^2}{n} \right\} \left\{ \sum Y^2 - \frac{(\sum Y)^2}{n} \right\}}}$$

where X = Score in first test

Y = Score in repeated test

and n = number of observations.

In the present study, X = DISE data

Y = Corresponding 5% sample checking data

If the reliability coefficient thus calculated is high, then we may conclude that the DISE data 2006-07 are reliable.

The square root of the reliability coefficient is known as index of reliability. Thus

Index of reliability, $r_{ix} = \sqrt{r_n}$

Validity of Test Scores:

Besides reliability, another important property of a measuring instrument is its validity. A measuring instrument is valid, if the measurements made by it are accurate and comparable with those made by a standard instrument. Validity of a test is concerned with the accuracy of the test scores.

Calculation of validity:

Validity of a test is determined experimentally by obtaining the coefficient of correlation between the scores of n individuals on the given test (X) and some independent standard test (Y) called criterion. A high correlation coefficient between X and Y is an evidence of validity provided that

- (i) the criterion Y was set up independently and
- (ii) both X and Y are reliable.

Index of reliability is sometimes taken as a measure of validity

In the present study the validity of DISE data is being measured by the Index of reliability i.e.,

Validity = Index of reliability

$$= r_{yx} = \sqrt{r_{xx}}$$

The reliability co-efficient and corresponding validity measures of the DISE data on different parameters of the study are shown bellow. It may be stated that the DISE data and 5% sample checking data tallied in most cases, thus showing reliability and validity of DISE data. Variation was noticed in Students Status. Hence, reliability co-efficients and validity measures have been shown below for this parameter.

Students Status:

Category	Lakhimpur		Dhubri		Jorhat	
	Reliability Co-efficient	Validity	Reliability Co-efficient	Validity	Reliability Co-efficient	Validity
LP Schools	0.9964	0.9982	0.9910	0.9955	0.9759	0.9879
UP Schools	0.9928	0.9964	0.9098	0.9538	0.9555	0.9775
LP+UP Schools	0.9925	0.9962	-	-	-	-

The table reveals that for all the three districts and for the parameter student status Reliability Co-efficient is more than 0.9 indicating thereby DISE data to have high reliability. Similarly, validity measures also are above 0.9 for all the districts. Thus, it may be concluded that DISE data 2006-07 are both reliable and valid.

Suggestion on the basis of feedback from Investigators:

The Investigators after visiting the selected schools and collecting data, felt that there are scope for improvement of the data reporting. In this connection, the following suggestions are forwarded for consideration.

1. The school authority should be instructed to maintain different tabular format as per DCF guidelines.
2. Students' records should be kept sex-wise, ST/SC/OBC wise, etc which is not normally done.
3. Data should be updated at regular intervals.
4. CRC co-ordinators should visit the schools regularly.
5. The Head Teachers should involve other teachers in preserving the data.
6. There should be specific time table for holding examinations and also the number of examinations to be held should be specified.
7. There should be specific academic calendar at the beginning of the session.
8. Precautions should be taken for correct data entry.
9. The reference date being 30th September, arrangement for DISE data collection should follow immediately after. Sample checking may be initiated just after completion of DISE data entry.