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DISTRICT PRIMARY EDUCATION PROGRAMME

DISTRICT PRIMARY EDUCATION PROGRAMME (DPEP)

INTERNAL EFFICIENCY AND COHORT DROP-OUT RATES AT PRIMARY LEVEL OF EDUCATION IN PHASE I DPEP DISTRICTS FOR 1996 & 1997

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*Research, Evaluation and Studies Unit
Technical Support Group for DPEP*



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**Internal Efficiency and Cohort Drop-out Rates at
Primary Level of Education in Phase I DPEP Districts
for 1996 & 1997**

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P R E F A C E

In this study, the problem of internal efficiency and drop-outs from school has been studied for the Phase I DPEP districts, using the data on enrolment and number of repeaters for the years 1996/97, 1997/98 and 1998/99 obtained from the DPEP-EMIS (Educational Management Information System). The study did not cover Phase II DPEP districts due to non-availability of data for all these three years for most of the districts.

Several indicators of internal efficiency have been derived which throw light on different aspects of wastage. Certain assumptions had to be made while computing these indicators, which have to be kept in mind while interpreting the results. These are clearly stated in the study report. While principally the Reconstructed Cohort Method was used for deriving the indicators of internal efficiency, the Apparent Cohort Method which is traditionally used for calculating cohort drop-out rates in the absence of data on repeaters, was also used. This method, though crude, enables us to compare the drop-out rates for the year 1997/98 with those of the pre-DPEP period, by using the grade I enrolment figures of 1993 for these districts from the Sixth All India Educational Survey. The cohort drop-out rate has declined by 4 to 20 percentage points since 1993 in majority of the Phase I districts and is now in the range of 4 to 32 percent in most of them. In addition to the cohort drop-out rates, annual drop-out rates have also been reported in this study for the years 1996 and 1997.

I am grateful to Shri R.S. Pandey, Joint Secretary (DPEP) who took a lot of interest in this study; to Shri M.K. Talukdar, Chief Consultant in-charge of DPEP-EMIS in the Technical Support Group of Ed.CIL, for making all the required data readily available for analysis; and to Dr. R.R. Saxena, Professor & Head, Department of Educational Surveys and Data Processing, NCERT, for providing the class I enrolment data of the DPEP districts for 1993 from the Sixth All India Educational Survey. Also, I am grateful to Shri Amit Dutta for helping in analysis of the data, preparation of various tables and charts and finally typing this report.

- *A.B.L. Srivastava*

EXECUTIVE SUMMARY

This report presents the findings of the study on internal efficiency and drop-out rates for the Phase-I districts of DPEP on the basis of the latest available data. The Phase-II districts are not covered in this study since the enrolment data of three consecutive years needed for the study was not yet available for most of the districts.

The enrolment data of DPEP-EMIS for the years 1996 and 1997 were used to determine the internal efficiency indicators for 1996 and similar data of 1997 and 1998 were used to obtain these indicators for 1997.

The indicators reported and discussed in this report are

- Coefficient of Efficiency
- Cohort Drop-out Rate (derived by Reconstructed cohort method)
- Pupil-years per graduate
- Average duration of study for graduates
- Annual Drop-out Rate
- Crude Cohort Drop-out rate (derived by Apparent Cohort method)

Of these, the *Coefficient of Efficiency (CE)* is an important indicator that gives a measure of the wastage that occurs because of the twin factors, children repeating grades and children dropping out from school. This coefficient (CE) is 100 when there are absolutely no repeaters and drop-outs in the system, and all the children admitted in class I complete primary education in 5 years if the primary cycle comprises classes I to V. When CE is below 100, there is some wastage due to the children repeating grades or dropping out from school. When the value of CE is 80 or more, internal efficiency can be considered as satisfactory. When CE is 80, the input-output ratio is $100/80$ or 1.25 which implies that 25% more pupil-years are required to produce a certain number of primary level completers, compared to the number of pupil-years

required for the same number of completers in the case when no one repeats or drops out.

The *cohort drop-out rate* obtained by the Reconstructed Cohort method is the percentage of children out of a hypothetical cohort entering grade I, who drop-out before reaching grade 5 and who do not complete the primary cycle in 5 or even more than 5 years because of repeating. To calculate the cohort dropout rate (CDR) for any given year, the grade-wise repetition and drop-out rates of that particular year are used to reconstruct the flow of students of the hypothetical cohort. In the analysis, if there is a negative dropout in any grade, it is assumed to be 0.5% dropout rate. Another assumption is that no one repeats the same class for more than 3 years

The *pupil-years/graduates ratio* tells us about the average number of pupil-years required to produce a primary graduate. It is the total number of pupil-years in the system spent by a given cohort of pupils, divided by the total number of graduates produced, irrespective of the number of years taken by them. The graduates, for the purpose of this study, are those who continue in school till the last grade. The *average duration of study for the graduates* is the average number of years taken by them to complete the primary cycle.

Annual drop-out rates reported in this study for the first time show the percentage of pupils who drop-out in any given year out of the total enrolled in all classes of the primary stage. Class-wise repetition and drop-out rates are also given for 1997.

Further, using the Apparent Cohort method, *crude cohort drop-out rates* were obtained for the year 1997. No use is made of the data on repeaters for deriving these rates.

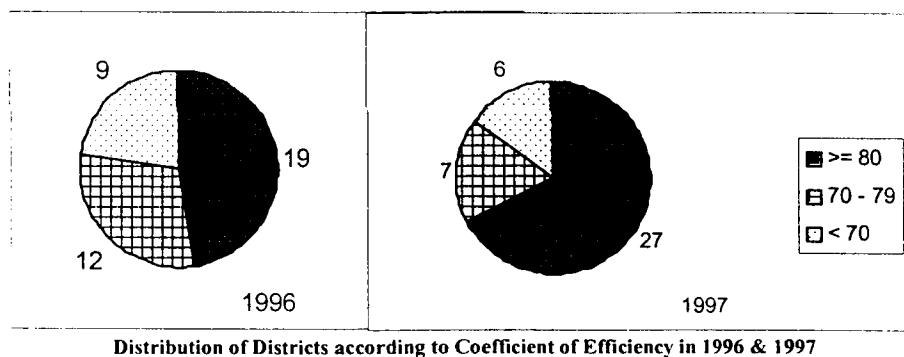
Where possible, the internal efficiency indicators, the cohort drop-out rates and annual drop-out rates of 1997 have been compared with those of 1996.. Also, the crude cohort drop-out rates of 1997 have been compared with those of 1993, which could be considered as indicators of pre-DPEP position on retention. The only point to be kept in mind while comparing with 1993 figures is that it uses grade I enrolment data of 1993 from an entirely different source, namely, the Sixth All India educational

Survey conducted by NCERT. Also the approach is different in the sense that it is based on comparison of 1993 grade I enrolment with grade V enrolment of 1997 (or grade IV enrolment of 1996), whereas the CCDR of 1997 is based on comparison of 1997 class-wise enrolments with those of 1998.

The main findings of the study are as follows :

(1) Coefficient of Efficiency

- Out of the 40 phase-I districts, the number of districts with good internal efficiency (CE 80 or more), increased from 19 in 1996 to 27 in 1997.
- The number of districts with poor internal efficiency (CE below 70) decreased from 9 in 1996 to 6 in 1997.

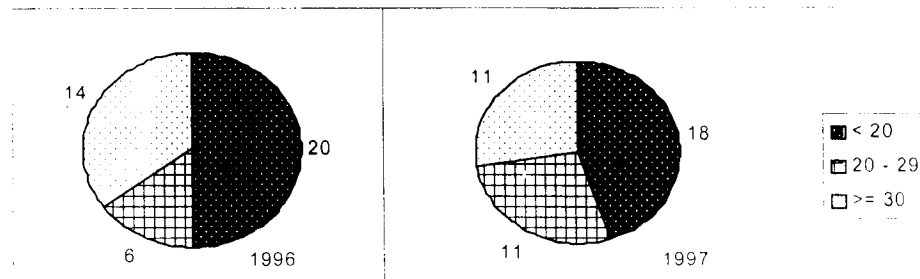


- In 15 districts, the internal efficiency increased substantially between 1996 and 1997 (that is, CE increased by 3 or more percentage points); in another 16 districts, it remained the same (that is, CE increased or decreased by less than 3 percentage points); and in 6 districts, CE decreased by over 3 percentage points. For the remaining districts, no comparison could be made due to lack of relevant data.

(2) Cohort Drop-out Rate

- *Cohort drop-out rate* is between 4 and 32 percent in majority of the districts (about three-fourths of the districts) in 1997. It is less than 20% in 19 districts and less than 10% in 8 districts.

- *Cohort drop-out rate* is 30% or more in 11 districts according to 1997-98 data, whereas it was over 30% in 14 districts according to 1996-97 data.



Distribution of Districts according to Cohort Drop-out Rate in 1996 & 1997

- In the middle range (20 to 29 percent), there were 6 districts in 1996 and 11 districts in 1997.
- In 15 districts, the *cohort drop-out rate* decreased by over 3 percentage points between 1996 and 1997; it remained almost the same in 11 districts (the increase or decrease being less than 3 percentage points), and increased by more than 3 percentage points in 12 districts.

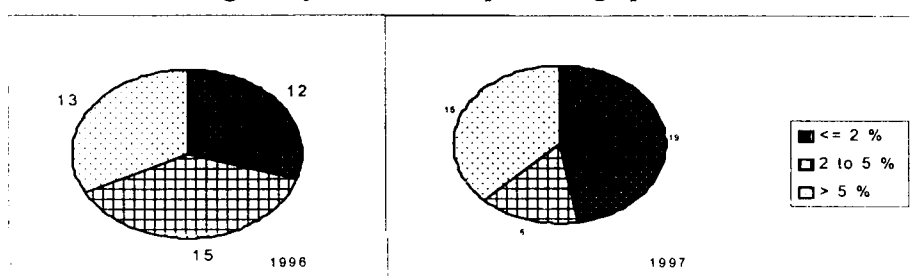
(3) Average Duration of Study (ADS) for Graduates

- So far as the 7 districts of Kerala and Karnataka are concerned, the *average duration of study* for the graduates (children who complete class IV) is in the range of 4.1 to 4.3 years; in the 3 districts of Assam, it is high in the range of 4.6 to 5.1 years.
- In the four states, where the highest primary class is class V, ADS (graduates) has been between 5.1 and 5.7 years in all the 31 districts in 1997. Actually, it was below 5.5 years in 24 districts. Interestingly, in the districts of Haryana and Tamil Nadu, ADS (graduates) is relatively higher compared to that in the districts of Madhya Pradesh and Maharashtra.
- It is noteworthy that ADS (graduates) has either remained the same or has declined slightly in all the districts, including those of Assam and Madhya Pradesh, where the drop-out rate is generally high.
- It shows that there has been decline in repetition rates in almost all the districts between 1996 and 1997, while the drop-out rates have decreased or remained constant in some of the districts but have increased in others between 1996 and 1997.

- The difference between the values of ADS (graduates) for the years 1996 and 1997 is small in most of the districts. However, there is decline in ADS (graduates), even though it is marginal, in over 80% of the districts.

(4) Gender Disparity in Cohort Drop-out Rates (CDR)

- Only in 13 out of 40 districts, *cohort drop-out rate* of girls is greater than that of boys by more than 5 percentage points in 1997. In 25 districts, the gender disparity in CDR is less than 5 percentage points, out of which, there are 19 districts in which it is less than 2 percentage points. In 2 districts, CDR of boys exceeds that of girls by more than 5 percentage points.



Distribution of Districts according to Gender Disparity in Cohort Drop-out Rate in 1996 & 1997

- Comparing the gender disparity in CDR of 1996 with that of 1997, we find that there has been some narrowing of the gender gap between 1996 and 1997. The difference between CDR of boys and girls was less than 2 percentage points in only 12 out of 40 districts in 1996, but in 19 districts, out of 40 districts in 1997. The districts in which gender gap has increased instead of decreasing are Sirsa in Haryana, Kolar in Karnataka and Tikamgarh in Madhya Pradesh.
- Overall, the number of districts in which CDR of boys differs from that of girls by less than 5 percentage points has been almost the same in both the years, 1996 and 1997.

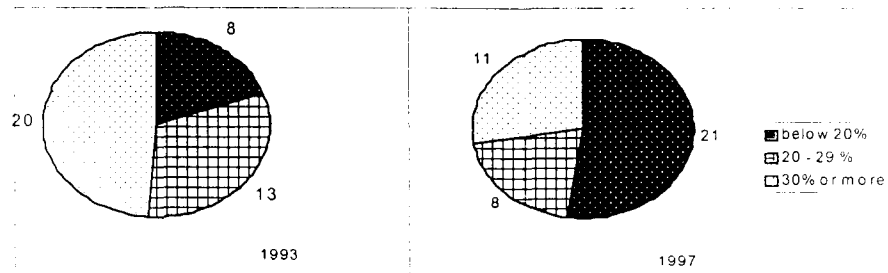
(5) Annual Drop-out Rate (ADR)

- In phase-I districts, the percentage of children who dropped-out out of the total enrolled in classes I to V in 1997, was less than 5% in 22 out of 40 districts. that is, nearly half the districts.

- There are only 5 phase-I districts (that is, 20% districts) in which the annual drop-out rate exceeded 10%. All these high drop-out rate districts are in Assam and Madhya Pradesh.
- The gender disparity is not serious in most of the districts. Only in 10 out of 38 phase-I districts (that is, 23% districts), the annual drop-out rate of girls exceeds that of boys by more than 2 percentage points.

(6) **Crude Cohort Drop-out Rates (CCDR) – comparison with pre-DPEP drop-out rates of 1993 cohort**

- The *crude cohort drop-out rate* is below 20% in 21 out of 40 phase-I districts in 1997. In majority of the cases (60% of the districts, to be exact), it is between 4 and 32 percent. Among the remaining 40% districts, a few have very high and a few very low (negative) drop-out rates, both of which suggest the need for re-checking the data and exploring the causes of such high or low drop-out rates.



Distribution of Districts according to Crude Cohort Drop-out Rate in 1996 & 1997

- Comparing the CCDR of 1997 with the crude cohort drop-out rates derived simply by comparing the grade I enrolment of 1993 with grade 4 enrolment of 1996 or grade 5 enrolment of 1997, we find that there has been significant reduction in drop-out rate in majority of the districts. It has decreased by more than 4 percentage points in 25 out of 40 districts, that is, nearly two-third phase-I districts. The decrease has been in the range of 4 to 20 percentage points in most of these districts. CCDR was below 20% in 8 districts in 1993 but it was below 20% in 21 districts in 1997. It was over 30% in 20 districts in 1993, but it was over 30% in only 11 districts.

INTERNAL EFFICIENCY AND DROP-OUT RATES AT PRIMARY LEVEL OF EDUCATION IN PHASE-I DPEP DISTRICTS FOR 1996 & 1997

CHAPTER I : INTRODUCTION

1.1 CONCEPT OF INTERNAL EFFICIENCY

This report presents the findings of the study on internal efficiency and drop-out rate for primary education in the 42 districts of Phase-I, where the DPEP programme started in 1994/95. The internal efficiency indicators and drop-out rates of phase-II districts are not being reported in this study as the required data for some of the districts was not available. Also, where the data was available, no definite pattern emerged as these rates were still unstable after just 1 or 2 years of DPEP interventions.

An important objective of DPEP was to cut down wastage in primary education by reducing the overall primary drop-out rates to less than 10%, and also to reduce the gender gap in the drop-out to less than 5%. As we all know, the wastage that occurs in primary education is due to (i) children repeating grades, that is, spending more than one year in the same class and (ii) children dropping out from school before completing the full 4 or 5 years cycle of primary education. This study investigates the effect of both these factors by analysing the district-wise EMIS data on enrolment and repeaters for the years 1996/97, 1997/98 and 1998/99 (to be called 1996, 1997 and 1998 respectively for simplicity) to derive the indicators of internal efficiency and drop-out rate. Also in the case of those districts for which data was available, the change in drop-out rate has been studied over the one year period 1996-1997, and also using a crude method which ignores repeaters, for the period 1993 - 1996/1997.

Using the Reconstructed Cohort Method, such indicators as *input-output ratio*, *coefficient of efficiency*, *cohort drop-out rate* and *average duration of study* for

primary 'graduates' have been derived. The *input-output ratio* shows the extent of wastage of resources on account of pupils repeating grades or dropping out. For example, an input-output ratio of 1.30 means that 30% more expenditure is incurred on producing a primary graduate (that is, one who completes the highest primary class) due to grade repetition and dropping out compared to the system in which no one repeats or drops out. The *coefficient of efficiency* is inverse of input-output ratio expressed in the form of percentage; when there is no wastage due to grade repetition or dropping out, it attains its highest value, that is, 100.

In addition to the indicators of internal efficiency, other indicators such as *retention* and *drop-out* rates based on the traditional method which ignores repeaters and simply compares the enrolment in grade I of a base year with that of the last grade in the year in which most pupils of the grade I cohort reach the last grade. For this purpose, the 1993 grade I cohort was taken, since district-wise enrolment figures were available for each district from the Sixth All India Educational Survey for this year.

Also, using the Apparent Cohort Method, district-wise retention and drop-out rates were determined for 1997. In this method, no use is made of the data on repeaters; only the enrolment of each grade is compared with that of the following grade in the successive year to find out the number of those who dropped out. It is assumed that the difference between the enrolment in any given grade in a certain year and the enrolment in the next grade in the following year gives the number of drop-outs from that grade. Sometimes, the number of drop-outs so determined becomes negative due to surfeit of lateral entry cases in grades IV/V or due to other flaws in the data.

In addition to cohort drop-out rates, annual drop-out rates, both class-wise and for the total pupils in grades I to IV/V, have also been calculated for the years 1996 and 1997. These rates show the percentage of children who drop-out in any given year, and hence are more pertinent for monitoring year to year changes in the drop-out rate.

1.2 OBJECTIVES OF THE STUDY

The main objective of this study is to assess the internal efficiency of primary education in the DPEP districts of phase-I on the basis of the latest available EMIS data. The specific objectives are as follows :

- (i) To provide indicators of internal efficiency for primary education in the DPEP districts of phase-I, based on the latest available EMIS data;
- (ii) To compare the internal efficiency and drop-out rates of the years 1996 and 1997 for the districts for which the required data are available;
- (iii) To estimate the drop-out rates by the traditional method and to assess the change in the drop-out rates in the recent years;
- (iv) To determine annual drop-out rates and class-wise repetition and drop-out rates for the years 1996 and 1997, and to comment on the changes, if any.

1.3 COMPUTATION OF PROMOTION, REPETITION AND DROP-OUT RATES

The two important indicators of wastage are *repetition rate* and *dropout rate*, which can be calculated for any grade and any year from the grade-wise data on repeaters and drop-outs. The repetition rate for grade i and year t is defined as :

$$RR(i, t) = \frac{\text{Number of repeaters in grade } i \text{ in year } t + 1}{\text{Enrolment in grade } i \text{ in year } t}$$

The number of children who drop out from a given grade is obtained by subtracting from the total enrolment of that grade in a given year, the number of those who got promoted to the next grade as well as the number of those who repeat the same grade in the following year. Thus the drop-out rate for grade i in year t is :

$$DR(i, t) = \frac{E(i, t) - R(i, t + 1) - P(i + 1, t + 1)}{E(i, t)}$$

where $E(i, t)$ = Enrolment in grade i in year t

$R(i, t + 1)$ = Number of repeaters in grade i in year $t + 1$

$P(i + 1, t + 1)$ = Number of promotees in grade $i + 1$ in year $t + 1$ (i.e. the number of those promoted from grade i of year t to grade $i + 1$ of year $t + 1$).

The repetition and drop-out rates are usually expressed in the form of percentage.

We may define promotion rate as well, which is simply

$$PR(i, t) = \frac{\text{No. of promotees in grade } i + 1 \text{ in year } t + 1}{\text{Enrolment in grade } i \text{ in year } t} \quad \text{or} \quad \frac{P(i + 1, t + 1)}{E(i, t)}$$

Obviously, $PR(i, t) + RR(i, t) + DR(i, t) = 1$.

Apart from the class-wise drop-out rates, it is also of interest to know what percentage of total children enrolled at the primary level drop out in any given year. It is the overall annual drop-out rate for all the primary grades taken together and can be considered as the weighted average of grade-wise drop-out rates, the weights being the enrolments in different grades. It is assumed that those who reach the last grade of the cycle have completed the primary cycle. In other words, the drop-outs from the last grade are not counted as drop-outs.

To calculate the total number of drop-outs from classes I-IV/V, we subtract from the total enrolment of any given year, the total number of children who continue to remain in school in the following year (that is, the number of promotees to the next grade, except in the case of the last grade plus the number of repeaters who remain in the same grade next year). Thus, the *Annual Drop-out Rate* (ADR) in the case of 5-year cycle of primary education for the year t , is given by :

$$ADR(t) = \frac{\left\{ \sum_{i=1}^4 E(i, t) - \sum_{i=2}^5 E(i, t+1) - R(1, t+1) + R(5, t+1) \right\}}{\sum_{i=1}^5 E(i, t)} \times 100$$

For each district for which the required data was available, the grade-wise promotion, repetition and drop-out rates have been calculated for each grade (grades I to IV in Assam, Karnataka and Kerala and grades I to V in other states). Also, the overall

Annual Drop-out Rate (ADR) has been calculated for each district for the years 1996 and 1997. In a few cases, the grade-wise drop-out rates were found to be negative. These were assumed to be zero, while computing ADR.

The following are the possible reasons for the drop-out rates in certain grades being negative :

- (i) *Lateral entry in grades other than grade I* : Some children take admission directly in classes II, III, IV or V.
- (ii) *Late admissions in grade I* : Many schools continue to admit children in grade I even after 30th September.
- (iii) *Faults in the data* : In a few districts, where negative drop-out rates are high, it is possibly due to omissions or errors in the data.

While these factors are mainly responsible for making the drop-out rate negative, it is likely that the drop-out rate even when positive, may have been affected by these factors. In other words, the actual drop-out rates may be higher than those reported because of the incidence of lateral entry and late admissions. To obviate the difficulty in analysis of data arising from negative drop-out rates, it has been assumed that the drop-out rates in all such cases are 0.005 or 0.5%, while computing the coefficient of efficiency and cohort drop-out rate, but not for computing drop-outs based on Apparent Cohort Method.

Another point to be noted is that in our analysis the promotion rates reported for the last grade (IV or V as the case may be) of the primary cycle are actually the proportion of students who do not repeat the grade.

1.4 STUDENT FLOW CHART

If the cohort of children who are admitted in grade I in any year are followed up for the next few years, it will be observed that (a) some would be getting promoted from one grade to the next till they complete the full cycle of primary education successfully without repeating any grade, (b) some would eventually complete the full cycle of primary education after repeating one or more grades and thus taking more

than the minimum 4 or 5 years required for the purpose, and (c) others would be dropping out from school before completing the primary education cycle. If we start with a hypothetical cohort of 1000 grade I pupils, and if the repetition and drop-out rates of the year 1996 hold good, then we can draw a flow chart for this cohort, which would show the position of the cohort from year to year in terms of the number of promotees, repeaters and dropouts. The chart would show how many from this cohort drop-out or repeat grades each year and how many eventually complete the full primary cycle, either in the minimum 4/5 years or in more years than that because of repetition. The method of deriving internal efficiency indicators in this way is known as *Reconstructed Cohort Method*.

The main assumptions made in these flow charts are (1) the repetition and drop-out rates of the particular year (1996 or 1997) hold good for the cohort and (2) no child repeats any grade for more than 3 years. The assumptions made about the repetition and drop-out rates have already been discussed in the previous section. If in the future the repetition and drop-out rates decline, similar flow charts can be drawn using the new rates to find out how the flow of students has improved.

1.5 INDICATORS OF INTERNAL EFFICIENCY - AN EXAMPLE OF DISTRICT SIRSA OF HARYANA

To illustrate how the different indicators of internal efficiency are derived from the flow chart of students by the *Reconstructed Cohort Method* based on the transition rates of any given year, let us consider the example of Sirsa district in Haryana. The transition rates of the year 1996 in Sirsa that have been used to study the flow, are as follows :

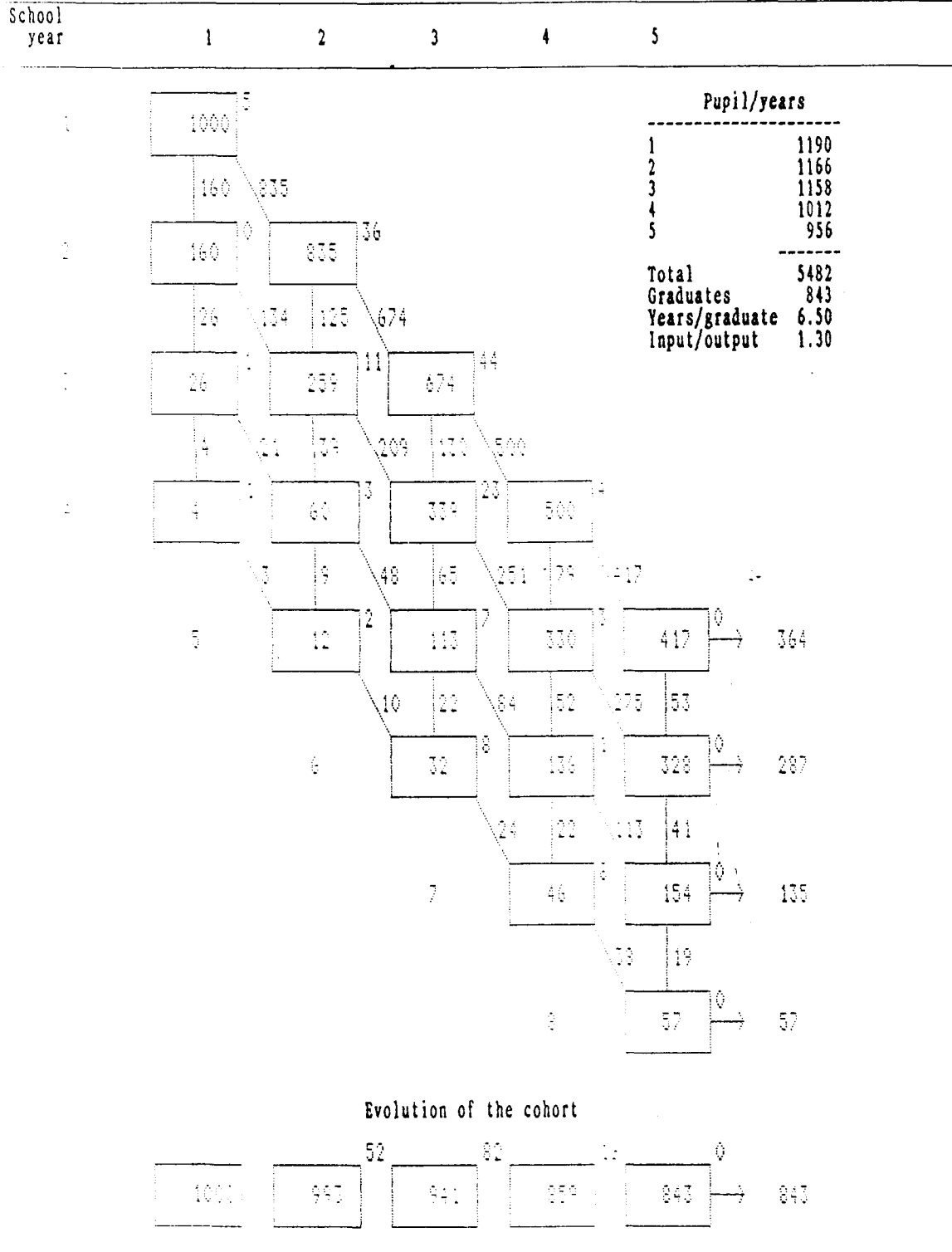
Grade	1	2	3	4	5
Promotion Rate	.835	.808	.742	.833	.874
Repetition Rate	.160	.150	.193	.158	.126
Drop-out Rate	.005	.042	.065	.009	.000

The promotion rate for grade 5 is simply the percentage of pupils of this grade who do not repeat. The flow chart based on the above rates is shown in Chart 1.

CHART 1

District Sirsa (Haryana)
1996/97 - 1997/98

DIAGRAM No 1: HYPOTHETICAL FLOW OF THE COHORT OF 1. PRIMARY EDUCATION
MALE AND FEMALE



(a) Input-Output Ratio and Coefficient of Efficiency

In the case of Sirsa district, we find that the ratio of pupil-years to the number of graduates (which we may call PY/G ratio) is 5482:843 or 6.50:1. When we compare this ratio with the ideal ratio, that is, 5:1, we get an idea of inefficiency of the system. Actually, the ratio of these two ratios is the *input-output ratio* and the inverse of input-output ratio is the *Coefficient of Efficiency*. Generally, it is expressed in the form of percentage, in which case its value will lie between 0 and 100.

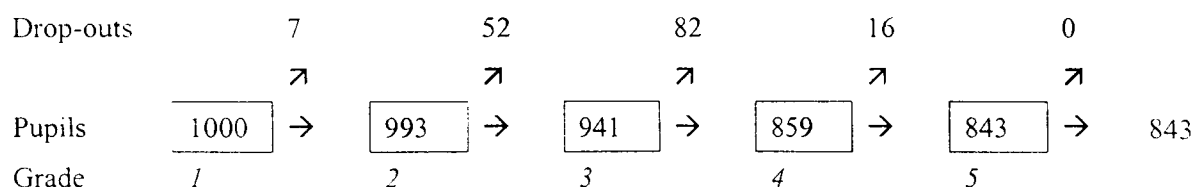
For any educational system, the *input-output ratio* can be calculated from the analysis of student flow data by the following formula

$$\text{Input-output ratio} = \frac{\text{Total number of pupil-years}}{\text{Total number of graduates} \times k}$$

where k = number of grades in the system.

(b) Survival of Cohort by Grade and Average Duration of Study

The flow chart enables us to find out how many pupils out of the cohort of 1000 reach grade 2, 3, 4 and 5, when some of them repeat grades and some drop out. The ‘evolution of cohort’ presented beneath the flow chart provides information about how many drop out from each grade and how many move up the educational ladder from grade to grade out of the cohort of 1000, irrespective of the number of years taken by them to reach any given grade. In the case of Sirsa, we find that evolution of the cohort is as follows :



Out of 1000 pupils in the first grade, 993 continue upto grade 2; 941 upto grade 3; 859 upto grade 4; and 843 upto grade 5. Thus the number of those who drop-out is 157, and the *Cohort Drop-out Rate* (CDR) is 15.7%.

It is of interest to find out the *Average Duration of Study* for the *graduates*. To determine it we have to compute from the figures in the flow chart, the average number of years taken by the graduates to complete the primary cycle. For the example of Sirsa, the *Average Duration of Study* (ADS) for the graduates is :

$$\text{ADS (graduates)} = \frac{364 \times 5 + 287 \times 6 + 135 \times 7 + 57 \times 8}{843} = 5.9 \text{ years}$$

1.6 RETENTION AND DROP-OUT RATES DERIVED BY THE TRADITIONAL METHOD (WITHOUT USING THE DATA ON REPEATERS)

The retention rate derived by the traditional method is simply the ratio of the enrolment in the last grade of primary level to the enrolment in grade I of the year in which most children of the cohort started their primary education. Thus, for the primary cycle of 4 years, the retention rate for the period 1993-96 is the ratio of class IV enrolment of 1996 to class I enrolment of 1993. Similarly, in the case of 5-year cycle of primary education, the retention rate for the period 1993-97 is the ratio of class V enrolment of 1997 to class I enrolment of 1993. This method is often used for estimating retention rate as it is straightforward and easy to understand.

The drop-out rates are obtained simply by subtracting the retention rate from 1 (or from 100, if expressed in the form of percentage). These are also cohort drop-out rates, but since they do not take into account the repeaters, they sometimes give an exaggerated picture of drop-out rates. To distinguish from the cohort drop-out rates obtained by the Reconstructed Cohort Method, we shall call these *Crude Cohort Drop-out Rates*.

The Apparent Cohort Method essentially uses the information on grade-wise enrolment of the different years in the absence of the data on repeaters. It is based on

grade-to-grade *progression rates*, which are simply the ratios of enrolment of two consecutive grades of two consecutive years. To be specific, the *progression rate* for grade i in year t is the ratio of enrolment in grade $i+1$ in year $t+1$ to enrolment in grade i in year t . For a 5-year primary cycle, the *retention rate* for the grade 1 cohort of year t can be written as a product of the progression rates of grades I, II, III and V for the years t , $t+1$, $t+2$ and $t+3$ respectively, since

$$RRc = \frac{E(V,t+4)}{E(I,t)} = \frac{E(II,t+1)}{E(I,t)} \times \frac{E(III,t+2)}{E(II,t+1)} \times \frac{E(IV,t+3)}{E(III,t+2)} \times \frac{E(V,t+4)}{E(IV,t+3)}$$

where $E(i,t)$ denotes the enrolment in grade i in year t .

The retention rate is thus the cumulative effect of the progression rates of grades I, II, III and IV for the years t , $t+1$, $t+2$ and $t+3$ respectively. While this may be termed as *cohort based Retention Rate (RRc)*, we can calculate *Retention Rate (RRp)* based on grade-to-grade progression rates of year t using the enrolment data of only two consecutive years, t and $t+1$, by the formula

$$RRp \text{ for year } t = \frac{E(II,t+1)}{E(I,t)} \times \frac{E(III,t+1)}{E(II,t)} \times \frac{E(IV,t+1)}{E(III,t)} \times \frac{E(V,t+1)}{E(IV,t)}$$

This *RRp* represents the cumulative effect of the progression rates of the different grades for the year t , and can be interpreted as the proportion (or percentage) of students who will reach grade V out of those enrolled in grade I if the grade-to-grade progression rates of the year t hold good. When the values of *RRp* for two different years are compared, it shows the effect of the change in the grade-to-grade progression rates between the two years.

In this study, both types of retention rates and corresponding cohort drop-out rates have been calculated for all the districts for which the required data was available. For *RRc*, the grade I cohort of 1993 has been taken, while *RRp* has been calculated for the year 1997, using enrolment data of 1997 and 1998. For 1993, the enrolment figures were obtained from the Sixth All India Educational Survey conducted by NCERT, while all other enrolment figures are from the DPEP-EMIS data. It may be noted that

the *crude cohort drop-out rates* so obtained are generally higher than the actual drop-out rates.

Calculation of Crude Cohort Drop-out Rate

Let us again consider the example of Sirsa district.

Enrolment in grade I on 30th September in 1993 (6th AIE Survey) : 23162

Enrolment in grade V 30th September in 1997 (EMIS) : 15538

Grade-wise enrolment 30th September in 1996 and 1997 (EMIS) :

<i>Grade :</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>
1996 :	23958	21855	19990	16476	14383
1997 :	29528	24410	21512	17432	15538

(a) *Cohort based Retention Rate for 1993 cohort*

$$RRc \text{ for 1993 cohort} = \frac{15538}{23162} \times 100 = 67.1\%$$

Corresponding *drop-out rate* = 32.9%

(b) *Retention Rate based on progression rates of 1996*

$$\begin{aligned} RRp &= \frac{24410}{23958} \times \frac{21512}{21855} \times \frac{17432}{19990} \times \frac{15538}{16476} \\ &= 1.019 \times .984 \times .872 \times .943 \\ &= .825 \text{ or } 82.5\% \end{aligned}$$

Corresponding *drop-out rate* = 17.5%

We shall call these *Crude Cohort Drop-out Rates* (CCDR) and those derived by the Reconstructed Cohort Method will be called just *Cohort Drop-out Rates* (CDR).

CHAPTER II : INTERNAL EFFICIENCY AND COHORT DROP-OUT RATE IN PHASE-I DISTRICTS

2.1 INTERNAL EFFICIENCY INDICATORS

In this chapter, four internal efficiency indicators, namely,

Coefficient of Efficiency (CE)

Pupil-Years / Grades (PY/G) Ratio

Cohort Drop-out Rate (CDR), and

Average Duration of Study (ADS) for Graduates

are being reported for the 42 phase-I districts of 7 states for both 1996 and 1997. One or two districts for which the required data was either not available or was faulty, have been omitted. The omitted districts are Dhar and Raigarh in Madhya Pradesh for 1996 and Darrang in Assam and Chhatarpur in Madhya Pradesh for 1997.

(a) *Coefficient of Efficiency*

Table 1 gives the Coefficient of Efficiency (CE) and Cohort Drop-out Rate for all the DPEP districts of Phase-I (except those for which the data was either not available or was faulty) for the years 1996 and 1997.

TABLE 1
COEFFICIENT OF EFFICIENCY (CE), PY/G RATIO AND COHORT DROP-OUT RATES (CDR) FOR
PHASE-I DISTRICTS IN 1996 AND 1997

State/District	Coefficient of Efficiency		PY/G Ratio		Cohort Dropout Rate		ADS for Graduates	
	1996	1997	1996	1997	1996	1997	1996	1997
<i>States with class IV as the highest class</i>								
ASSAM								
Darrang	64.9	--	6.1	--	45.5	--	4.83	--
Dhubri	48.8	45.9	8.2	8.7	55.7	60.5	5.23	5.07
Morigaon	56.8	55.9	7.0	7.2	56.6	55.7	4.72	4.67

State/District	Coefficient of Efficiency		PY/G Ratio		Cohort Dropout Rate		ADS for Graduates	
	1996	1997	1996	1997	1996	1997	1996	1997
KARNATAKA								
Belgaum	80.6	85.5	4.9	4.7	10.7	16.0	4.60	4.28
Kolar	90.1	94.3	4.4	4.2	8.0	5.5	4.22	4.12
Mandya	92.6	90.1	4.3	4.4	1.4	17.6	4.30	4.08
Raichur	77.5	80.0	5.1	5.0	25.2	24.0	4.32	4.28
KERALA								
Kasargod	95.2	95.2	4.2	4.2	1.7	3.3	4.16	4.13
Mallapuram	87.7	94.3	4.5	4.3	14.5	1.5	4.21	4.22
Wayanad	95.2	89.3	4.2	4.5	2.1	14.7	4.15	4.14
<i>States with class V as the highest class</i>								
HARYANA								
Hissar	78.1	75.8	6.4	6.6	17.8	26.6	5.70	5.55
Jind	79.4	79.4	6.3	6.3	19.1	22.8	5.57	5.52
Kaithal	80.0	84.0	6.2	5.9	16.9	11.9	5.65	5.62
Sirsa	76.9	69.9	6.5	7.1	15.7	28.9	5.86	5.73
MADHYA PRADESH								
Betul	78.7	80.6	6.3	6.2	17.9	19.9	5.74	5.63
Bilaspur	62.9	94.3	7.9	5.3	52.8	8.8	5.37	5.15
Chhatarpur	89.3	--	5.6	--	8.5	--	5.33	--
Dhar	--	85.5	--	5.9	--	21.5	--	5.11
Guna	65.8	61.3	7.6	8.2	44.4	53.7	5.54	5.35
Mandsaur	74.1	93.5	6.8	5.3	38.0	11.0	5.23	5.09
Panna	64.5	79.4	7.7	6.3	50.1	33.5	5.25	5.21
Raigarh	--	80.6	--	6.2	--	31.9	--	5.21
Raisen	80.0	82.0	6.2	6.1	27.8	30.2	5.17	5.18
Rajgarh	89.3	51.5	5.6	9.7	8.4	65.4	5.29	5.09
Rajnandgaon	76.9	87.7	6.5	5.7	30.4	21.7	5.49	5.16
Ratlam	88.5	61.0	5.7	8.2	15.2	59.2	5.23	5.09
Rewa	62.1	97.1	8.1	5.1	56.7	2.1	5.14	5.08
Sarguja	62.5	71.9	8.0	7.0	58.1	37.6	5.30	5.23
Satna	86.2	93.5	5.8	5.3	19.7	8.7	5.21	5.13
Sehore	82.0	90.1	6.1	5.5	25.4	14.0	5.27	5.14
Shahdol	83.3	64.1	6.0	7.8	32.6	62.5	5.12	5.13
Sidhi	69.4	83.3	7.2	6.0	42.6	23.1	5.33	5.25
Tikamgarh	76.9	89.3	6.5	5.6	30.6	15.3	5.16	5.05

State/District	Coefficient of Efficiency		PY/G Ratio		Cohort Dropout Rate		ADS for Graduates	
	1996	1997	1996	1997	1996	1997	1996	1997
MAHARASHTRA								
Aurangabad	77.5	90.9	6.4	5.5	31.5	7.7	5.29	5.27
Latur	82.6	88.5	6.0	5.6	24.8	16.3	5.18	5.16
Nanded	73.5	75.8	6.8	6.6	33.1	34.3	5.37	5.17
Osmanabad	84.7	85.5	5.9	5.8	23.0	22.8	5.19	5.15
Parbhani	78.7	78.7	6.4	6.3	24.7	25.9	5.41	5.33
TAMIL NADU								
Cuddalore	84.0	84.7	5.9	5.9	9.8	9.5	5.57	5.56
Dharmapuri	78.1	84.0	6.4	6.0	25.3	16.0	5.53	5.50
Thiruvannamalai	84.7	84.0	5.9	6.0	10.0	12.3	5.55	5.52
Villupuram	82.0	80.0	6.1	6.3	17.2	21.0	5.40	5.43

State-wise the findings are as follows :

States in which class IV is the highest primary class

In **Assam**, the problem is most severe as the value of CE is below 60. The *coefficient of efficiency* was about 65 in Darrang, 49 in Dhubri and 57 in Morigaon in 1996. CE remained nearly the same in Dhubri and Morigaon (46 and 56 respectively) in 1997. In Darrang, the data does not appear to be right to give a reliable value of CE for 1997.

In **Karnataka**, the internal efficiency is quite good in all the four districts, the value of CE being 80 or more in 1997. In 1996, CE was 80 or more in 3 districts and 77.5 in one of them (Raichur).

In **Kerala**, the internal efficiency is very good, the value of CE being between 89 and 95 in the three districts in 1997. In 1996 also, CE was between 88 and 95 in these districts.

States with class V as the highest class

In **Haryana**, the *coefficient of efficiency* in 1997 is between 70 and 80 in 3 districts and 84 in one of them (Kaithal). In 1996, CE was between 77 and 80 in all the four districts.

In the districts of **Maharashtra**, the *coefficient of efficiency* lies between 85 and 91 in 3 districts, whereas it is between 75 and 79 in the remaining 2 districts. In 1996, the values of CE were lower, if not the same, in all the 5 districts (ranging between 73 and 85). The situation is relatively better in Latur (83.6) and Osmanabad (84.6).

In **Madhya Pradesh**, the *coefficient of efficiency* in 1997 is over 80 in 12 districts, but in 4 districts (Guna, Rajgarh and Ratlam), it is particularly poor, the value of CE being below 65. In two of them it is between 70 and 80, while for one (Chhatarpur), there was no data. In 1996, CE was 80 or above in only 7 districts. In two districts, Dhar and Rajgarh, there was no reliable data.

In the districts of **Tamil Nadu**, the value of CE in 1997 is 80 or more in all the 4 districts. In 1996, CE was over 80 in 3 districts and 78 in one of them (Dharmapuri).

Table 2 shows the number of districts in which CE was 80 or more, between 70 and 80 and below 70 in each state in both the years 1996 and 1997, and also the number of districts in which CE changes or did not change significantly between 1996 and 1997. The significant findings are as follows :

- The number of districts with good internal efficiency (CE 80 or more) increased from 19 in 1996 to 27 in 1997.
- The number of districts with poor internal efficiency (CE below 70) decreased from 9 in 1996 to 6 in 1997.

TABLE 2
DISTRIBUTION OF PHASE-I DISTRICTS ACCORDING TO COEFFICIENT OF INTERNAL EFFICIENCY
(CE) AND COHORT DROP-OUT RATE (CDR) IN 1996 AND 1997

State	No. of Districts	Year	Number of Districts											
			Value of CE			Change in CE between 1996 & 97			Cohort Dropout Rate			Change in CDR 1996-97		
			≥ 80 (Good)	70-79 (Avg.)	< 70 (Poor)	Inc.	Same	Dec.	< 20	20-29	≥ 30	Dec.	Same	Inc.
<i>States with 4-year primary cycle</i>														
Assam	3	1996	-	-	3	-	2	-	-	-	3	-	1	1
	2	1997	-	-	2				-	-	2			
Karnataka	4	1996	3	1	-	2	2	-	3	1	-	-	2	2
	4	1997	4	-	-				3	1	-			
Kerala	3	1996	3	-	-	1	1	1	3	-	-	1	1	1
	3	1997	3	-	-				3	-	-			
<i>States with 5-year primary cycle</i>														
Haryana	4	1996	1	3	-	1	2	1	4	-	-	1	-	3
	4	1997	1	3	-				1	3	-			
Madhya Pradesh	17	1996	7	4	6	9	2	4	5	2	10	10	2	4
	18	1997	12	2	4				7	3	8			
Maharashtra	5	1996	2	3	-	2	3	-	2	2	1	2	3	-
	5	1997	3	2	-				2	2	1			
Tamil Nadu	4	1996	3	1	-	-	4	-	3	1	-	1	2	1
	4	1997	4	-	-				2	2	-			
Total	40	1996	19	12	9	15	16	6	20	6	14	15	11	12
	40	1997	27	7	6				18	11	11			

Dec. = Decreased by 3 or more percentage points between 1996 & 1997

Same = Remained within ± 3 percentage points over 1996-97

Inc. = Increased by 3 or more percentage points between 1996 & 1997

- In 15 districts, the internal efficiency increased substantially between 1996 and 1997 (that is, CE increased by 3 or more percentage points); in another 16 districts, it remained the same (that is, CE increased or decreased by less than 3 percentage points); and in 6 districts, CE decreased by over 3 percentage points. For the remaining districts, no comparison could be made due to lack of relevant data.
- Whereas in 31 districts, there was either an increase or no change in internal efficiency between 1996 and 1997, in the 6 districts where CE declined by more than 3 points, it is necessary to look into the causes of such decline. In particular, the 3 districts where CE declined drastically by more than 10 points (Rajgarh, Ratlam and Shahdol in Madhya Pradesh), it is possible that the problem is with the data itself since such a decrease in CE is not likely to

occur in one year. By the same token, the 6 districts of Madhya Pradesh in which CE increased by more than 10 points between 1996 and 1997, it is necessary to re-check the data to make sure that all the schools were covered and they had supplied reliable data for the years 1996, 1997 and 1998. It seems in Madhya Pradesh, EMIS was not yet on a sound footing in most of the districts.

(b) Ratio of Pupil-Years to Number of Graduates (PY/G Ratio)

The ratio of number of pupil-years that a cohort of 1000 spends in school to the number of graduates eventually produced out of the cohort, gives an idea of the years required to produce a primary graduate.

We find that among the states with 4-year cycle of primary education, in **Assam**, 7 to 9 pupil-years are required to produce a primary graduate. The change between 1996 and 1997 in the PY/G ratio is insignificant.

In **Karnataka**, the number of pupil-years needed to produce a primary graduate ranges between 4.2 and 5.0. In Kerala, the situation is relatively better since the PY/G ratio is between 4.2 and 4.5. In both these states, not much change has taken place in the PY/G ratio in any of the districts.

Among the states with 5-year primary education cycle, in **Haryana**, the PY/G ratio for 1997 ranges between 6.3 and 7.1. Only in Sirsa, the increase in PY/G ratio from 6.5 in 1996 to 7.1 in 1997 is substantial. In **Maharashtra**, the PY/G ratio lies between 5.5 and 6.6 in 1997. The improvement is substantial in Aurangabad district, where the PY/G ratio decreased from 6.4 to 5.5. In **Tamil Nadu**, PY/G ratio was between 5.9 and 6.3, with hardly any change in the position between 1996 and 1997.

In **Madhya Pradesh**, the variation in the values of PY/G ratio is quite large over the districts. It is as low as 5.1 in Rewa and as high as 9.7 in Rajgarh in 1997. In the remaining districts, it is between 5.3 and 8.2. In some of the districts, the increase or decrease in PY/G ratio between 1996 and 1997 is quite large. It requires scrutiny of the data from which this indicator has been derived.

The median value of PY/G ratio for the 10 districts with 4-year primary cycle was 4.7 years in 1996 and 4.6 in 1997, and for the 31 districts with 5-year primary cycle, it was 6.3 years in 1996 and 6.1 years in 1997.

(c) Cohort Drop-out Rate (CDR)

Table 1 also gives the *cohort drop-out rate* for the cohorts entering grade I for both 1996 and 1997, based on the grade-wise repetition and drop-out rates of 1996 and 1997 respectively. Charts 2 to 5 show these rates for all the districts. The distribution of districts according to CDR is given in Table 2. The assumptions involved in computation of these rates are given in Section 1.3 of Chapter I.

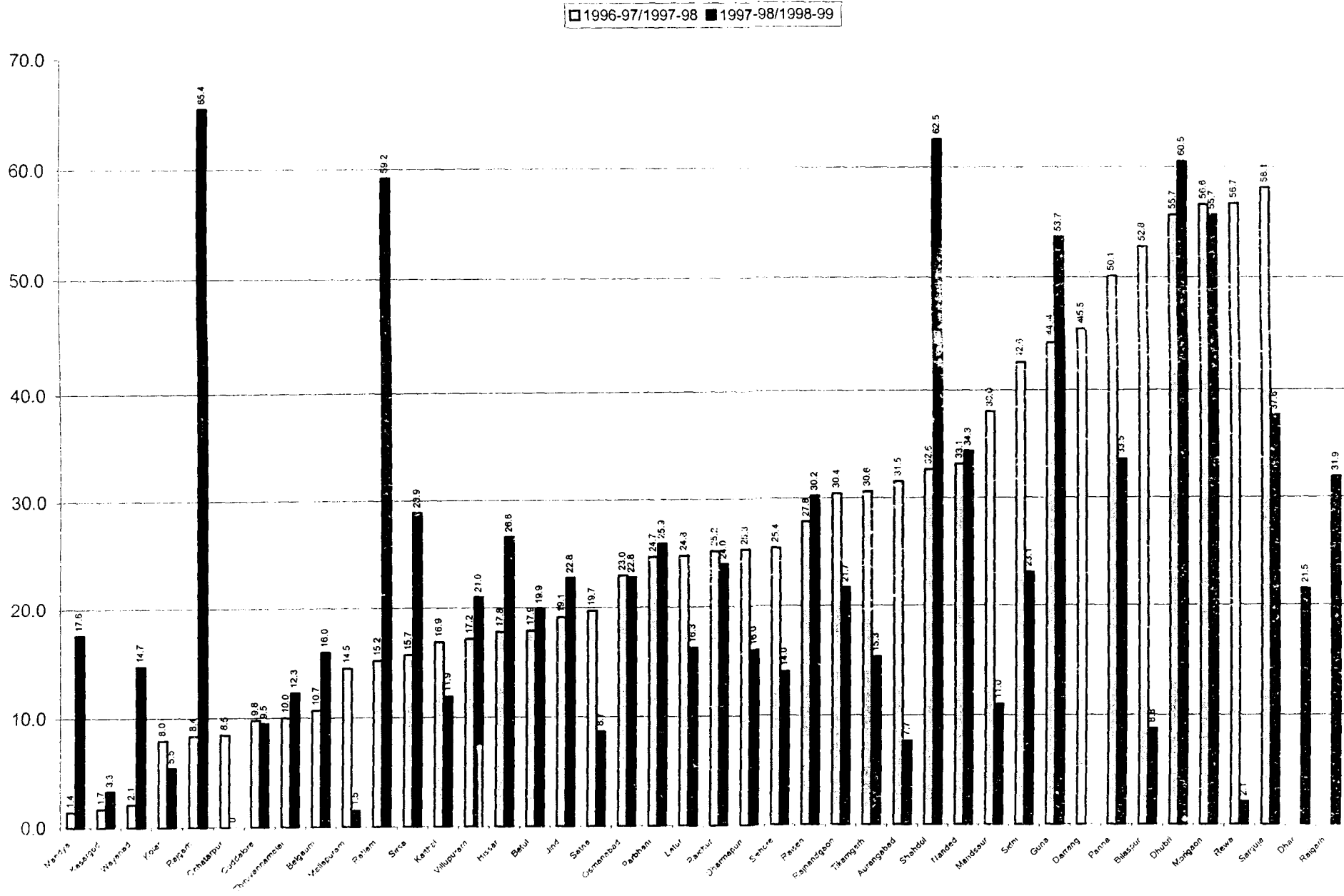
Among the states with class IV as the highest class, **Assam** has the highest drop-out rate as over 55% children drop out before grade IV. In Darrang, the situation is particularly bad as 82 per cent children of grade I drop out before grade IV (according to 1997-98 data) but this percentage was only 45.5 a year earlier (according to 1996-97 data).

In **Karnataka**, only in Raichur, the cohort drop-out rate was 24.0 in 1997. In other districts, it is below 18%, the lowest being 5.5% in Kolar.

In **Kerala**, only in Wayanad, the drop-out rate is somewhat high (14.7%); in the other two districts, it is 3.3% or less. In 1996, CDR was high in Mallapuram (14.5%), which reduced to 1.5% in 1997.

In the states where class V is the highest class, the dropout rate is the percentage of pupils of class I cohort who drop out before grade V. In **Haryana**, this drop-out rate is highest in Sirsa (28.9%) and lowest in Kaithal (11.9%). In the other two districts, it is between 22 and 27 percent. Whereas CDR has increased in 3 districts between 1996 and it has decreased in one (Kaithal).

Chart 2 : Cohort Drop-out Rates, 1996-97/1997-98 : 1997-98/1998-99



In **Maharashtra**, the cohort drop-out rate is lowest (7.7%) in Aurangabad and highest (34.3%) in Nanded. In the other 3 districts, it is between 16 and 26 percent. The change between 1996 and 1997 is significant in two districts (Aurangabad and Latur) and negligible in the other three.

In **Madhya Pradesh**, as the number of districts is large, the variation in cohort drop-out rate is also large, ranging between 2% and 45% in 1997. The districts with very high drop-out rate (between 50 and 65 percent) are Guna, Rajgarh, Ratlam and Shahdol. The districts where the cohort drop-out rate is a little less but still quite high (between 30 and 40 percent) are Panna, Raigarh, Raisen and Sarguja. In the rest of districts, it is 23% or less. The changes (both increase or decrease in CDR) between 1996 and 1997 are quite significant in some of the districts.

In **Tamil Nadu**, only in Dharmapuri and Villupuram, the cohort drop-out rate is somewhat high (between 21 and 25 percent) in 1997. In the other two districts, it is between 9 and 12 percent.

To sum up, the main findings on *cohort drop-out rate* are :

- *Cohort drop-out rate* is between 4 and 32 percent in majority of the districts (about three-fourths of the districts) in 1997. It is less than 20% in 19 districts and less than 10% in 8 districts.
- *Cohort drop-out rate* is 30% or more in 11 districts according to 1997-98 data, whereas it was over 30% in 114 districts according to 1996-97 data.
- In the middle range (20 to 29 percent), there were 6 districts in 1996 and 11 districts in 1997.
- In 15 districts, the *cohort drop-out rate* decreased by over 3 percentage points between 1996 and 1997; it remained almost the same in 11 districts (the increase or decrease being less than 3 percentage points), and increased by more than 3 percentage points in 12 districts.

- There are 6 districts in which the CDR increased by over 10 percentage points between 1996 and 1997. These are Sirsa in Haryana, Mandya in Karnataka, Wayanad in Kerala and Rajgarh, Ratlam and Shahdol in Madhya Pradesh. The data require scrutiny and causes for the increase need to be explored in these districts. By the same token, the 10 districts (one in Kerala, and nine in Madhya Pradesh) where CDR has decreased by more than 10 points, further exploration is needed to find out how far it is genuine improvement and how far it is due to some discrepancy in the data.

(d) Average Duration of Study for Graduates¹

Ideally, a child would require 4 years to complete grade IV and 5 years to complete grade V. For a cohort of 1000 children entering grade I, the average number of years for those completing grade V is generally more than 5 because some children repeat grades. Obviously, when repetition rates are high, the average duration will be more. Table 1, among other things, gives the average duration of study (ADS) in years for the graduates, that is, the pupils who continued to remain in school till they completed the last grade. Here, completion of the last grade simply means that they reach the last grade and repeat it if they fail, but do not drop out. Thus, ADS for graduates is high only if repetition rates are high; it is not affected by the drop-out rate.

Among the three states where the primary level ends in grade IV, we find that in **Assam**, the average duration of study for graduates is between 4.6 and 5.1 years in 1997, whereas it was between 4.7 and 5.2 in 1996. In **Karnataka**, its value ranges between 4.1 and 4.3 years in 1997. In 1996, it was between 4.2 and 4.6 years. In **Kerala**, it is 4.1 or 4.2 years in both 1996 and 1997 in all the three districts.

¹ Graduates, as explained earlier, are those who complete the last grade in 4/5 or more years. It is assumed that they do not drop out from the last grade; they either pass it or repeat it.

Let us now consider the states in which the highest primary grade is V.

In **Haryana**, the average duration of study for a child completing grade V is 5.6 or 5.7 in 1997. It was in the same range in 1996 also, except in Sirsa, where it was 5.9 years. In **Maharashtra**, the average duration of study for those completing grade V is 5.6 or 5.4 years in 1997; it was between 5.2 and 5.4 in 1996. In **Madhya Pradesh**, the lowest ADS for graduates is between 5.1 and 5.4 years, except in Betul where it is 5.6 years in 1997. In 1996 also, it was in the same range. In **Tamil Nadu**, the average duration of study per child completing grade V ranges between 5.4 and 5.6 years in all the four districts in 1997. It was almost the same in 1996 also.

To sum up, the main conclusions on *average duration of study* (ADS) for graduates are as follows.

- So far as the 7 districts of Kerala and Karnataka are concerned, the *average duration of study* for the graduates (children who complete class IV) is in the range of 4.1 to 4.3 years; in the 3 districts of Assam, it is high in the range of 4.6 to 5.1 years.
- In the four states, where the highest primary class is class V, ADS (graduates) has been between 5.1 and 5.7 years in all the 31 districts in 1997. Actually, it was below 5.5 years in 24 districts. Interestingly, in the districts of Haryana and Tamil Nadu, ADS (graduates) is relatively higher compared to that in the districts of Madhya Pradesh and Maharashtra.
- It is noteworthy that ADS (graduates) has either remained the same or has declined slightly in all the districts, including those of Assam and Madhya Pradesh, where the drop-out rate is generally high.
- It shows that there has been decline in repetition rates in almost all the districts between 1996 and 1997, while the drop-out rates have decreased or remained constant in some of the districts but have increased in others between 1996 and 1997.
- The difference between the values of ADS (graduates) for the years 1996 and 1997 is small in most of the districts. There are no sudden changes as have

occurred in the case of *cohort drop-out rate* in some of the districts, particularly of Madhya Pradesh, where the veracity of data was questionable.

- On the whole, it appears that the pupils who can make it to the last grade of the primary cycle do so without repeating for more than a year on the average, whereas most of the other children drop-out either after repeating or even without repeating, thereby inflating the drop-out rate.

2.2 GENDER DIFFERENCES IN INTERNAL EFFICIENCY AND COHORT DROP-OUT RATE

(a) *Coefficient of Efficiency*

Table 3 shows the *coefficient of efficiency* for boys and girls in 1996 and 1997. In general, the gender difference is small in most of the districts. In 1997, in 24 out of the 40 districts, the *coefficient of efficiency* in the case of girls is almost the same as that of boys, the difference between the two being less than 3 points. In 11 districts, this coefficient (CE) for girls is less than that for boys by more than 3 points, whereas just opposite is the case in 5 districts. Of these 16 districts, eight are in Madhya Pradesh. In only two districts (Guna and Rajgarh in Madhya Pradesh), the *coefficient of efficiency* for girls is substantially lower than that for boys. Of the 11 districts in which CE for girls is less than that for boys by more than 3 points, there are 7 in which the difference exceeds 5 points. Of these, one is in Haryana and six are in Madhya Pradesh. It is these districts which require more attention for achieving gender parity in respect of internal efficiency.

TABLE 3
COEFFICIENT OF EFFICIENCY AND COHORT DROP-OUT RATE FOR BOYS AND GIRLS IN 1996 & 1997

District	Coefficient of Efficiency				Cohort Dropout Rate					
	1996		1997		1996			1997		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys-Girls	Boys	Girls	Boys-Girls
<i>States with class IV as the highest class</i>										
ASSAM										
Darrang	65.4	64.9	--	--	44.8	46.0	-1.2	--	--	--
Dhubri	48.3	49.5	46.1	45.5	56.9	54.4	2.5	60.0	61.2	-1.2
Morigaon	55.2	58.1	54.3	57.5	58.2	55.1	3.1	57.6	53.7	3.9
KARNATAKA										
Belgaum	82.0	80.0	85.5	84.7	9.2	12.6	-3.4	15.8	16.4	-0.6
Kolar	90.9	90.1	96.2	91.7	6.8	9.1	-2.3	2.1	9.7	-7.6
Mandya	92.6	92.6	90.9	90.1	1.6	1.7	-0.1	16.9	18.1	-1.2
Raichur	79.4	76.3	82.0	77.5	22.6	28.3	-5.7	20.7	27.9	-7.2
KERALA										
Kasargod	94.3	96.2	95.2	96.2	1.1	2.3	-1.2	2.9	3.6	-0.7
Mallapuram	87.0	89.3	93.5	94.3	15.8	13.4	2.4	1.5	1.4	0.1
Wayanad	95.2	95.2	88.5	90.1	1.5	5.1	-1.6	16.8	12.7	4.1
<i>States with class V as the highest class</i>										
HARYANA										
Hissar	79.4	75.8	74.1	77.5	14.8	21.1	-6.3	28.8	23.9	4.9
Jind	80.6	77.5	82.6	76.3	18.7	20.8	-2.1	17.5	28.3	-10.8
Kaithal	79.4	78.1	84.0	84.7	18.5	19.3	-0.8	11.6	11.4	0.2
Sirsa	76.9	75.8	68.5	71.9	14.7	18.4	-3.7	31.5	26.7	4.8
MADHYA PRADESH										
Betul	79.4	78.7	81.3	79.4	16.9	18.8	-1.9	17.7	23.3	-5.6
Bilaspur	65.4	60.2	95.2	93.5	49.5	56.5	-7.0	7.1	12.1	-5.0
Chhatarpur	92.6	89.3	--	--	7.6	10.1	-2.5	--	--	--
Dhar	--	--	87.0	82.6	--	--	--	19.2	24.7	-5.5
Guna	70.9	57.1	65.4	54.9	38.2	53.9	-15.7	49.9	59.6	-9.7
Marhaur	78.7	67.6	95.2	89.3	31.9	45.5	-13.6	7.8	17.1	-9.3
Panna	69.9	58.1	80.0	78.7	44.2	57.0	-12.8	33.2	34.2	-1.0
Raigarh	--	--	80.6	80.6	--	--	--	31.5	32.2	-0.7
Raisen	78.7	82.0	83.3	76.9	31.7	23.1	8.6	27.4	36.4	-9.0
Rajgarh	93.5	78.1	57.1	41.8	2.9	23.8	-20.9	61.3	72.3	-11.0
Rajmandgaon	77.5	74.6	88.5	87.0	28.5	33.4	-4.9	19.1	24.6	-5.5
Ratlam	90.1	86.2	64.5	56.2	13.0	18.0	-5.0	55.8	63.7	-7.9
Rewa	59.2	65.4	98.0	97.1	60.2	52.2	8.0	1.5	2.0	-0.5

District	Coefficient of Efficiency				Cohort Dropout Rate					
	1996		1997		1996			1997		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys-Girls	Boys	Girls	Boys-Girls
Sarguja	63.7	60.6	72.5	70.4	56.1	60.4	-4.3	35.8	40.4	-4.6
Satna	85.5	87.7	93.5	93.5	21.9	17.0	4.9	9.5	8.0	1.5
Schore	84.0	78.1	90.9	90.1	23.5	28.7	-5.2	14.6	13.3	1.3
Shahdol	84.0	76.3	57.5	73.0	32.3	39.3	-7.0	68.3	54.1	14.2
Sidhi	71.9	65.4	84.0	82.6	39.6	48.0	-8.4	22.2	23.7	-1.5
Tikamgarh	76.3	77.5	91.7	82.6	31.2	30.2	1.0	11.9	23.6	-11.7
MAHARASHTRA										
Aurangabad	78.1	76.9	91.7	90.9	30.9	32.1	-1.2	7.1	7.9	-0.8
Latur	84.0	82.0	88.5	88.5	23.0	26.3	-3.3	16.3	16.5	-0.2
Nanded	75.8	72.5	75.8	75.8	31.1	34.6	-3.5	35.1	33.4	1.7
Osmanabad	86.2	83.3	86.2	85.5	21.2	25.0	-3.8	22.7	23.0	-0.3
Parbhani	78.7	78.1	81.3	76.3	24.5	25.2	-0.7	23.3	28.8	-5.5
TAMIL NADU										
Cuddalore	84.0	84.0	84.7	85.5	10.7	9.3	1.4	9.6	9.2	0.4
Dharmapuri	78.1	78.7	83.3	84.7	25.1	25.2	-0.1	16.0	15.3	0.7
Thiruvannamalai	84.7	84.7	83.3	84.7	10.2	9.2	1.0	12.6	12.0	0.6
Villupuram	83.3	80.6	78.1	82.0	14.6	19.9	-5.3	23.2	17.9	5.3

(b) Cohort Drop-out Rate

In Table 3, the separate *cohort drop-out rates* (CDR) for boys and girls are also given for 1996 and 1997. Of the 40 districts for which these rate are given for 1997, we find that CDR for girls is more than that for boys by more than 5 percentage points in 13 districts. Of these, one is in Haryana, two are in Karnataka, nine are in Madhya Pradesh and one is in Maharashtra. The only district in which CDR for boys exceeded that for girls by over 5 points are Shahdol in Madhya Pradesh and Villupuram in Tamil Nadu. In the remaining 25 districts, CDR in 1997 for girls does not differ from that for boys by more than 5 percentage points. In 1996, the number of districts in this category was 27.

The following are the 13 districts in which the cohort drop-out rate of girls exceeds that of boys by more than 5 percentage points in 1997 (the percentage points by which the drop-out rate of girls exceeds are shown for each district in parenthesis) :

Jind (10.8) in Haryana; Kolar (7.6) and Raichur (7.2) in Karnataka; Betul (5.6), Dhar (5.5), Guna (9.7), Mandsaur (9.3), Raisen (9.0), Rajgarh (1.0), Rajnandgaon (5.5), Ratlam (7.9) and Tikamgarh (11.7) in Madhya Pradesh; and Parbhani (5.5) in Maharashtra.

To sum up the main findings on gender disparity are :

- Only in 13 out of 40 districts, *cohort drop-out rate* of girls is greater than that of boys by more than 5 percentage points. In 25 districts, the gender disparity in CDR is less than 5 percentage points, and in 2 districts, CDR of boys exceeds that of girls by more than 5 percentage points.
- Comparing the gender disparity in CDR of 1996 with that of 1997, we find that it has either remained at the same level or has reduced in most of the districts. The only exceptions are Sirsa in Haryana, Kolar in Karnataka and Tikamgarh in Madhya Pradesh where the disparity has increased instead of decreasing.
- Overall, the number of districts in which CDR of boys differs from that of girls by less than 5 percentage points has been almost the same in both the years, 1996 and 1997.

CHAPTER III: ANNUAL DROP-OUT RATE IN PHASE-I DISTRICTS

3.1 DEFINITION AND ASSUMPTIONS

In this chapter, the *Annual Drop-out Rates* (ADR) are being reported for the phase-I districts for the years 1996 and 1997. ADR is simply the percentage of pupils who drop-out (that is, do not continue schooling in the following year) out of the total pupils enrolled at the primary level in any given year. This indicator is useful for monitoring the year-to-year changes in the overall drop-out rate. In Table 4, the annual (overall) drop out rates are given for the years 1996 and 1997 for phase-I districts. In the Table given in the Appendix, annual class-wise drop-out rates are given for these districts for the year 1997. It may be pointed out that in Table 4, the drop-out rates have been calculated by assuming the number of drop-outs in a particular class to be zero, if the same was negative in that class. However, in Tables I and II given in the Appendix, if the drop-out rate in any class was negative, the same was assumed to be .005 or .5%. Actually the repetition and drop-out rates given in these tables were used for determining the *coefficients of efficiency* and *cohort drop-out rates* for the year 1997 that have been reported in Chapter II.

3.2 ANNUAL DROP-OUT RATE (ADR)

Table 4 shows the values of ADR for phase-I districts for the years 1996 and 1997. Among the states with class IV as the highest primary class, we find that in **Assam**, ADR was between 15 and 21 percent in its three districts in 1996. In 1997, ADR remained close to its 1996 value in Dhubri and Morigaon.

In **Karnataka**, the annual drop-out rate has been quite low in both 1996 and 1997 (below 5%) in all the districts except in Raichur, where it was between 6 and 7 percent. In Mandya, where ADR was zero in 1996 because the number of drop-outs was negative in each class, there is apparently some flaw in the data.

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TABLE 4
ANNUAL DROP-OUT RATES IN PHASE-I DISTRICTS IN THE YEARS 1996 AND 1997

State/District	Annual Drop-out Rate (ADR)						Decrease in (3)-(6)	Gender difference (1997) (4)-(5)
	1996-97			1997-98				
	Boys	Girls	Total	Boys	Girls	Total		
	1	2	3	4	5	6		
<i>States with class IV as the highest class</i>								
ASSAM								
Darrang	16.46	17.52	16.95	--	--	--	--	--
Dhubri	15.58	14.80	15.22	16.13	17.05	16.57	-1.35	-0.92
Morigaon	20.91	20.09	20.51	18.56	17.01	17.80	2.71	1.55
KARNATAKA								
Belgaum	1.94	2.76	2.33	4.07	4.29	4.17	-1.84	-0.22
Kolar	1.45	2.17	1.81	0.43	2.50	1.28	0.53	-2.07
Mandya	0.00	0.13	0.00	3.32	3.77	3.54	-3.54	-0.45
Raichur	5.80	7.73	6.65	5.41	7.70	6.44	0.21	-2.29
KERALA								
Kasargod	0.01	0.28	0.14	0.69	0.83	0.76	-0.62	-0.14
Mallapuram	3.93	3.33	3.64	0.00	0.00	0.00	3.64	0.00
Wayanad	0.00	0.51	0.15	4.29	3.18	3.75	-3.60	1.11
<i>States with class V as the highest class</i>								
HARYANA								
Hisar	2.44	3.65	3.00	6.05	4.90	5.51	-2.51	1.15
Jind	3.83	3.61	3.72	3.40	6.09	4.65	-0.93	-2.69
Kaithal	3.42	3.44	3.08	2.24	2.28	2.24	0.83	-0.04
Sirsa	2.11	3.04	2.45	5.82	4.64	5.20	-2.75	1.18
MAHARASHTRA								
Aurangabad	7.64	8.06	7.84	1.36	1.69	1.51	6.33	-0.33
Latur	4.73	5.89	5.30	3.52	3.51	3.51	1.78	0.01
Nanded	6.67	7.56	7.10	8.33	7.75	8.05	-0.95	0.58
Osmanabad	4.72	5.66	5.17	5.12	5.18	5.15	0.02	-0.05
Prabhani	5.39	5.47	5.43	5.07	6.18	5.60	-0.17	-1.11
MADHYA PRADESH								
Betul	2.42	3.23	2.70	3.41	4.89	4.07	-1.37	-1.47
Bilaspur	12.70	15.76	14.07	1.39	3.14	1.91	12.16	-1.75
Chhatarpur	1.47	1.76	1.59	-	-	-	-	-
Dhar	--	--	--	4.41	5.45	4.85	--	-1.04
Guna	7.50	12.19	9.31	13.22	16.62	14.58	-5.27	-3.40
Mandsaur	7.45	11.24	9.11	1.64	3.94	2.44	6.67	-2.29

State/District	Annual Drop-out Rate (ADR)						Decrease in (3)-(6)	Gender difference (1997) (4)-(5)
	1996-97			1997-98				
	Boys	Girls	Total	Boys	Girls	Total		
	1	2	3	4	5	6		
Panna	11.00	14.97	12.71	7.84	8.31	8.04	4.67	-0.46
Raigarh	-	-	-	7.34	7.76	7.54	-	-0.42
Raisen	9.43	6.78	8.23	6.23	8.85	7.15	1.08	-2.62
Rajgarh	0.22	4.21	1.39	17.11	21.19	18.80	-17.41	-4.08
Rajnandgaon	6.31	8.01	7.07	4.16	6.26	5.11	1.96	-2.09
Ratlam	2.68	3.79	3.15	15.60	19.05	17.06	-13.92	-3.45
Rewa	16.72	13.72	15.42	0.01	0.00	0.00	15.42	0.01
Sarguja	16.38	19.44	17.75	8.35	9.95	9.03	8.72	-1.60
Satna	4.66	3.45	4.13	1.95	1.66	1.82	2.31	0.28
Sehore	4.92	6.26	5.45	3.01	2.76	2.90	2.55	0.25
Shahdol	9.8	9.9	9.9	20.8	15.7	18.6	-8.7	5.1
Sidhi	9.39	11.87	10.30	5.09	5.43	5.21	5.08	-0.34
Tikamgarh	7.76	7.79	7.77	2.26	4.97	3.07	4.70	-2.71
TAMIL NADU								
Cuddalore	1.96	1.57	1.76	1.72	1.72	1.72	0.05	0.00
Dharmapuri	5.27	5.27	5.27	3.22	3.14	3.19	2.08	0.08
Thiruvannamalai	2.26	2.31	2.29	2.33	2.26	2.29	0.00	0.07
Villupuram	2.17	3.24	2.68	4.68	3.51	4.12	-1.44	1.17

In **Kerala**, the annual drop-out rate has been quite low in both 1996 and 1997 (below 5%) in all the districts, except in Mallapuram in 1996 and Wayanad in 1997, where it was between 3 and 4 percent in these years.

Coming to the states in which class V is the highest primary class, we find that in **Haryana**, ADR was between 2 and 4 percent in 1996. But in 1997, the drop-out rate registered a slight increase in three districts (ADR becoming 4 to 6 percent) but a small decrease in one district (ADR reducing from 3.1 to 2.2 percent). In **Maharashtra**, the annual drop-out rate was between 5 and 8 percent in both 1996 and 1997 in all the districts except Aurangabad and Latur where it was 1.5% and 3.5% respectively in 1997. In particular, there was a significant decline in ADR of Aurangabad from 7.8% in 1996 to 1.8% in 1997.

In **Madhya Pradesh**, the annual drop-out rates in its 18 districts vary widely; they range between 2% and 19% in 1997. The drop-out rate (ADR) was very high, over 14% in 4 districts, but in 8 districts, it was very low (below 5%). In the remaining 6 districts, it was between 5 and 10 percent. In 1996, it was between 1 and 18 percent in other districts. Out of the 16 districts in which ADR was available for both 1996 and 1997, in 12 districts, it had declined and in four, it had increased between 1996 and 1997.

In **Tamil Nadu**, ADR has been quite low (4.1% or less) in all the four districts in 1997. Except for a slight increase in ADR of Villupuram and a slight decrease in ADR of Dharmapuri, there has been no change in the values of ADR between 1996 and 1997.

The gender disparity is insignificant in the drop-out rate in most of the districts. Only in 11 out of 40 districts, the annual drop-out rate of boys differed from that of girls by more than 2 percentage points in 1997. In 10 out of the 11 districts (except Shahdol in Madhya Pradesh), the drop-out rate of girls was more than that of boys. But the difference was in the range of 2 to 3 percentage points only, except in Guna and Rajgarh of Madhya Pradesh, where ADR of girls exceeded that of boys by 3 to 4 percentage points.

To sum up, the main findings on the annual drop-out rate are as follows :

- In phase-I districts, the percentage of children who dropped-out out of the total enrolled in classes I to V in 1997, was less than 5% in 22 out of 40 districts, that is, nearly half the districts.
- There are only 5 phase-I districts (that is, 20% districts) in which the annual drop-out rate exceeded 10%. These high drop-out rate districts are in Assam and Madhya Pradesh.
- Among the 38 phase-I districts, in which it was possible to compare the annual drop-out rate of 1996 with that of 1997, we find that in ten (that is, nearly 25%) of them, no change had taken place (the increase or decrease in ADR

being less than 1 percentage point); in 16 of them (that is, 40% of the districts), the drop-out rate had decreased by more than 1 percentage point; and in the remaining 12 districts, ADR had increased by over 1 percentage point. Only in Rajgarh and Ratlam in Madhya Pradesh, the drop-out rate increased by 14 to 17 percentage points between 1996 and 1997. In one district, Rewa in Madhya Pradesh, it decreased by more than 15 percentage points in the same one year. It is possible that the data in these districts are faulty since such large changes normally do not occur in one year.

- The gender disparity is not serious in most of the districts. Only in 10 out of 38 phase-I districts (that is, 23% districts) the annual drop-out rate of girls exceeds that of boys by more than 2 percentage points.

3.3 CLASS-WISE REPETITION AND DROP-OUT RATES IN 1997

The class-wise repetition and drop-out rates (RR and DR) for phase-I districts for 1997 are given in the Appendix. These rates were used for computing the coefficient of internal efficiency and cohort drop-out rate for the year 1997. In these tables, all the negative drop-out rates have been replaced by 0.005.

Both repetition and drop-out rates are very high in all the 3 districts of **Assam**. Both these rates are particularly very high in class I. The most conspicuous are 44.1% repetition rate in class I in Dhubri and 47.6% drop-out rate in class I in Darrang.

In **Karnataka**, class to class variations in RR and DR are not large, though the drop-out rates of class I are somewhat higher than those of other classes. In **Kerala**, all the class-wise repetition and drop-out rates are very low, as a result of which the internal efficiency is very high.

In **Haryana**, the drop-out rates are, in general, lower than repetition rates. Also, there is no conspicuously high drop-out rates in class I. Actually, these are higher in other classes in a few cases.

Among the districts of **Madhya Pradesh**, the variation is quite large. The drop-out rate in class I is generally higher, but in a few districts (e.g., Guna and Rajgarh), it is high in all the classes. The highest drop-out rate in class I is 41.5% in Shahdol. The repetition rates are relatively less.

In **Maharashtra**, the drop-out rates are relatively high in class I, and so are the repetition rates, but the latter are lower than the drop-out rates. However, the drop-out is quite high in all the districts except in Aurangabad.

In **Tamil Nadu**, the drop-out rates are quite low in each class in all the districts. However, the repetition rates are relatively higher than the drop-out rates.

CHAPTER IV : DROP-OUT RATES DERIVED BY APPARENT COHORT METHOD

4.1 DEFINITION AND ASSUMPTIONS

In this chapter, the cohort drop-out rates derived by the Apparent Cohort Method are being reported for phase-I districts for the year 1997. To derive these rates, the data on repeaters is not used; only the 1997 grade-wise progression rates (that is, ratios of enrolment in grade $i+1$ in 1998 to the enrolment in grade i in 1997) have been used as indicators of retention. The method has already been described in Chapter I. For 1997, the retention rate so derived (for primary education comprising grades I to V) is

$$RR_{p, 1997} = \frac{E(II,1998)}{E(I,1997)} \times \frac{E(III,1998)}{E(II,1997)} \times \frac{E(IV,1998)}{E(III,1997)} \times \frac{E(V,1998)}{E(IV,1997)} \times 100$$

where $E(i,t)$ denotes enrolment in grade i in year t .

and the corresponding drop-out rate, which we are calling *Crude Cohort Drop-out Rate* (CCDR), is

$$CCDR_{1997} = 100 - RR_{p, 1997}$$

In order to compare it with a similar drop-out rate of an earlier year, we have used to grade I enrolment of 1993 for the DPEP districts obtained from the Sixth All India Education Survey. Since grade-wise data at the district level was not available for the following year, 1994, we have used the grade V enrolment of 1997 to derive the crude cohort drop-out rate for 1993 as follows :

$$CCDR^*_{1993} = 100 - E(V,1997) \times 100 / E(I, 1993)$$

It may be noted that the CCDR for 1997 is based on the retention rate of each grade for the year 1997, CCDR for 1993 is based on the retention rate of grade I for 1993, of grade II for 1994, of grade III for 1995 and of grade IV for 1996, and hence it is being

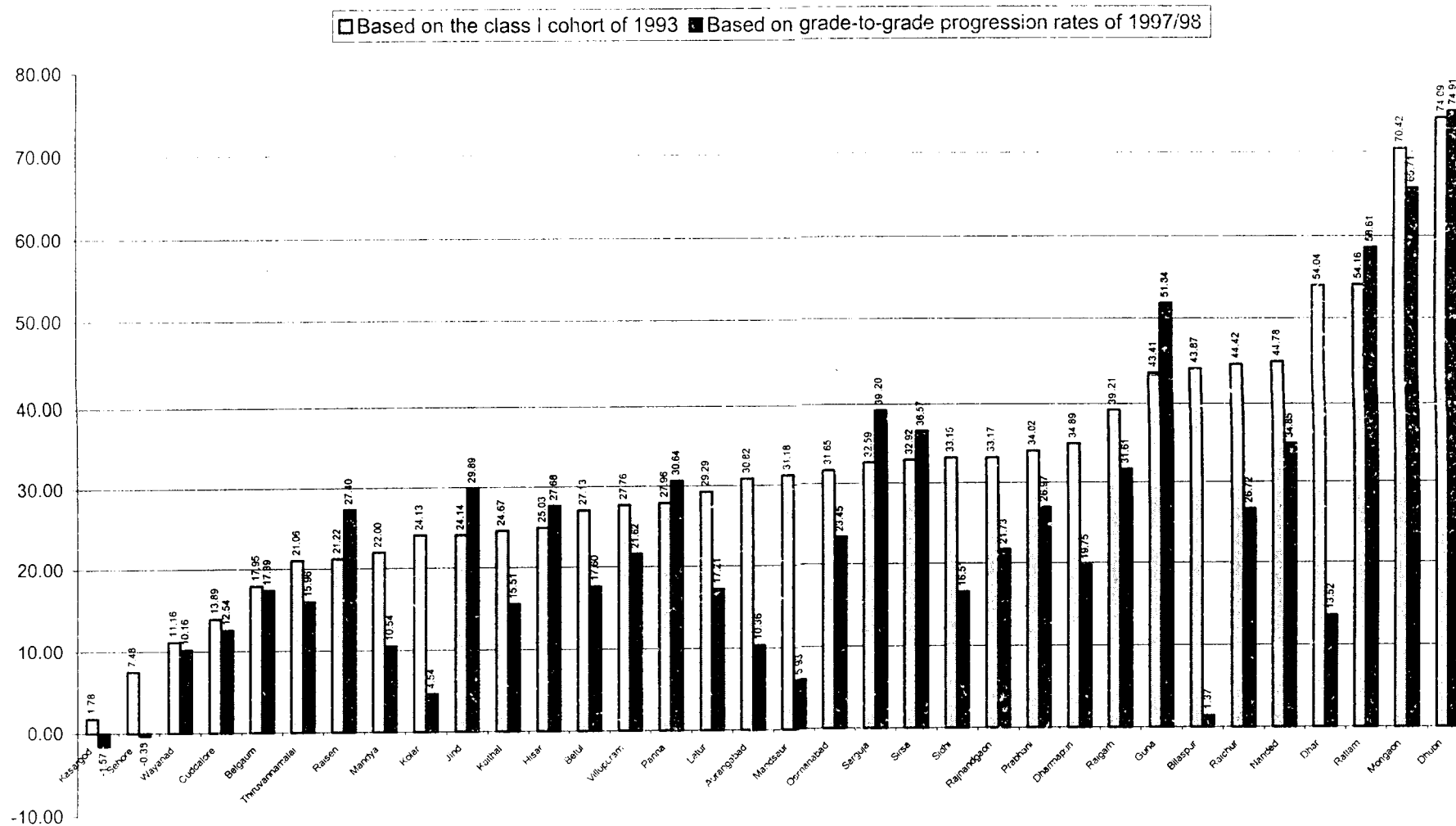
TABLE 5
CRUDE COHORT DROP-OUT RATE DERIVED BY APPARENT COHORT METHOD IN PHASE-I
DISTRICTS FOR (A) CLASS I COHORT OF 1993 (B) CLASS I COHORT OF 1997 USING GRADE-WISE
PROGRESSION RATES

State/District	Based on the class I cohort of 1993			Based on grade-to-grade progression rates of 1997/98			Decrease in CCBR (3)-(7)
	Boys	Girls	Total	Boys	Girls	Total	
	1	2	3	5	6	7	9
<i>States with class IV as the highest class</i>							
ASSAM							
Darrang	67.07	67.89	67.45	--	--	--	--
Dhubri	73.87	74.38	74.09	74.35	75.52	74.91	-0.81
Morigaon	70.14	70.73	70.42	66.94	64.41	65.71	4.71
KARNATAKA							
Belgaum	16.38	19.72	17.95	17.07	17.74	17.39	0.56
Kolar	21.96	26.27	24.13	-0.24	9.19	4.54	19.59
Mandya	21.08	22.90	22.00	9.59	11.52	10.54	11.46
Raichur	39.40	50.62	44.42	23.02	31.12	26.72	17.70
KERALA							
Kasargod	0.70	2.92	1.78	-2.42	-0.68	-1.57	3.35
Mallapuram	-1.32	0.55	-0.40	-31.29	-28.40	-29.87	29.47
Wayanad	12.00	10.24	11.16	11.85	8.33	10.16	1.00
<i>States with class V as the highest class</i>							
HARYANA							
Hisar	23.31	27.08	25.03	28.67	26.57	27.68	-2.65
Jind	22.19	26.54	24.14	24.44	35.80	29.89	-5.75
Kaithal	23.26	26.50	24.67	12.75	18.79	15.51	9.16
Sirsa	31.58	34.50	32.92	38.35	34.56	36.57	-3.66
MAHARASHTRA							
Aurangabad	29.44	32.40	30.82	8.83	12.00	10.36	20.46
Latur	27.33	31.26	29.29	16.93	17.50	17.21	12.08
Nanded	43.29	46.27	44.78	35.56	34.09	34.85	9.93
Osmanabad	30.36	32.99	31.65	23.27	23.64	23.45	8.20
Prabhani	30.53	37.74	34.02	24.25	30.01	26.97	7.05
MADHYA PRADESH							
Betul	26.11	28.30	27.13	14.00	21.48	17.60	9.53
Bilaspur	41.80	46.53	43.87	-3.35	6.76	1.37	42.51
Dhar	52.63	56.06	54.04	8.51	20.07	13.52	40.53
Guna	37.53	52.11	43.41	47.38	58.50	51.84	-8.44
Mandsaur	26.38	37.46	31.18	-2.42	16.29	5.93	25.25

State/District	Based on the class I cohort of 1993			Based on grade-to-grade progression rates of 1997/98			Decrease in CCDR (3)-(7)
	Boys	Girls	Total	Boys	Girls	Total	
	1	2	3	5	6	7	9
Panna	26.04	30.53	27.96	30.48	30.74	30.64	-2.68
Raigarh	37.01	41.69	39.21	31.18	32.04	31.61	7.60
Raisen	20.95	21.57	21.22	21.29	33.90	27.40	-6.19
Rajgarh	17.88	39.55	26.39	60.43	71.77	64.81	-33.42
Rajnandgaon	29.61	37.28	33.17	17.07	26.49	21.73	11.44
Ratlam	46.92	62.07	54.16	54.91	63.36	58.61	-4.44
Rewa	39.83	35.43	37.93	-16.21	-21.93	-18.80	56.73
Sarguja	31.03	34.74	32.59	36.21	42.36	39.20	-6.61
Satna	8.50	7.42	8.03	-13.69	-17.79	-15.50	23.53
Sehore	4.06	12.04	7.48	-2.86	3.01	-0.38	7.86
Shahdol	23.60	34.27	28.36	67.07	52.83	61.26	-32.90
Sidhi	29.42	39.42	33.15	16.23	16.86	16.51	16.64
Tikamgarh	16.89	17.31	17.05	-11.85	-21.78	-16.47	33.52
TAMIL NADU							
Cuddalore	14.25	13.51	13.89	12.29	12.80	12.54	1.35
Dharmapuri	34.26	35.58	34.89	19.85	19.65	19.75	15.14
Thiruvannamalai	20.88	21.24	21.06	15.69	16.25	15.96	5.09
Villupuram	27.41	28.16	27.76	23.61	19.41	21.62	6.15

We find the CCDR of 1997 is negative in 6 districts of which 4 are in Madhya Pradesh. In 4 districts (Mallapuram in Kerala and Rewa, Satna and Tikamgarh in Madhya Pradesh), the negative CCDR is less than -15%. In Mallapuram, it is as low as -30%. In all such districts, if there are no errors in data, the large increase in enrolment in 1998 in grades other than grade I which has resulted in making the drop-out rates negative, needs to be explained. Either there is a large influx of lateral entrants in these grades or some schools covered in the EMIS school census of 1998 were left out in 1997. CCDR* for the year 1993 is slightly negative in only one district of Kerala.

Chart 3 : Crude Cohort Drop-out Rate



Note : (1) Districts are arranged in the order of increasing 1996 drop-out rates.

(2) Four districts with high negative drop-out rates in 1997, and two districts showing unexpected large increase between 1996 and 1997 have been excluded.

Comparing CCDR* of 1993 with CCDR of 1997, we find that out of the 40 districts, the Crude Cohort Drop-out Rate has

- decreased in 26 (that is, 65%) districts by more than 3 percentage points (these include the 6 districts in which CCDR has become negative in 1997);
- remained the same (that is, did not increase or decrease by more than 3 percentage points) in 6 districts; and
- increased in 8 districts (that is, 20%) by more than 3 percentage points.

The two districts in which a large increase in CCDR has taken place are Rajgarh and Shahdol in Madhya Pradesh. One has to be sure about the reliability of data in these districts before accepting the finding about such a large increase.

To sum up, the main findings are :

- The *Crude Cohort Drop-out Rate* is the drop-out rate normally calculated in the absence of data on repeaters. It gives some idea of the percentage of children of grade I who drop out before reaching the last grade. It is below 20% in 21 out of 40 phase-I districts in 1997. In majority of the cases (60% of the districts, to be exact), it is between 4 and 32 percent. Among the remaining 40% districts, a few have very high and a few very low (negative) drop-out rates, both of which suggest the need for re-checking the data and exploring the causes of such high or low drop-out rates.
- Comparing the CCDR of 1997 with the Crude Cohort Drop-out Rates derived simply by comparing the grade I enrolment of 1993 with grade 4 enrolment of 1996 or grade 5 enrolment of 1997, we find that there has been significant reduction in drop-out rate in majority of the districts. It has decreased by more than 4 percentage points in 25 out of 40, that is, nearly two-third phase-I districts. The decrease has been in the range of 4 to 20 percentage points in most of these districts. CCDR was below 20% in 8 districts in 1993 but it was below 20% in 21 districts in 1997. It was over 30% in 20 districts in 1993, but it was over 30% in only 11 districts.

APPENDIX

TABLE
CLASS-WISE REPETITION AND DROPOUT RATES IN PHASE-I DPEP DISTRICTS :: 1997-98 / 1998-99

State / District	Repetition Rates					Dropout Rates			
	Class					Class			
	I	II	III	IV	V	I	II	III	IV
<i>States with class IV as the highest class</i>									
ASSAM									
Darrang	0.220	0.130	0.099	0.046	-	0.476	0.304	0.257	-
Dhubri	0.441	0.208	0.172	0.096	-	0.215	0.150	0.122	-
Morigaon	0.273	0.132	0.113	0.060	-	0.248	0.185	0.121	-
KARNATAKA									
Belgaum	0.075	0.054	0.065	0.064	-	0.049	0.056	0.055	-
Kolar	0.028	0.020	0.035	0.036	-	0.022	0.005	0.028	-
Mandya	0.000	0.018	0.029	0.031	-	0.102	0.046	0.035	-
Raichur	0.075	0.062	0.070	0.054	-	0.081	0.040	0.121	-
KERALA									
Kasargod	0.001	0.041	0.044	0.044	-	0.016	0.012	0.003	-
Mallapuram	0.001	0.068	0.068	0.068	-	0.005	0.005	0.005	-
Wayanad	0.003	0.044	0.048	0.046	-	0.055	0.059	0.037	-
<i>States with class V as the highest class</i>									
HARYANA									
Hissar	0.053	0.100	0.153	0.131	0.063	0.029	0.086	0.090	0.051
Jind	0.119	0.100	0.119	0.102	0.047	0.052	0.076	0.065	0.023
Kaithal	0.110	0.103	0.148	0.126	0.086	0.043	0.028	0.026	0.005
Sirsa	0.145	0.131	0.177	0.140	0.067	0.002	0.084	0.099	0.079
MADHYA PRADESH									
Betul	0.115	0.086	0.106	0.109	0.153	0.077	0.021	0.068	0.023
Bilaspur	0.053	0.023	0.019	0.020	0.031	0.071	0.005	0.005	0.005
Dhar	0.013	0.010	0.027	0.027	0.032	0.046	0.005	0.130	0.044
Guna	0.056	0.047	0.061	0.063	0.096	0.136	0.170	0.241	0.108
Mandsaur	0.009	0.012	0.015	0.021	0.032	0.037	0.041	0.090	0.005
Panna	0.040	0.029	0.037	0.034	0.061	0.110	0.093	0.160	0.005
Raigarh	0.052	0.034	0.038	0.035	0.052	0.128	0.082	0.110	0.025
Raisen	0.021	0.027	0.034	0.039	0.055	0.120	0.046	0.148	0.013
Rajgarh	0.014	0.014	0.016	0.020	0.020	0.181	0.216	0.195	0.318

State / District	Repetition Rates					Dropout Rates			
	Class					Class			
	I	II	III	IV	V	I	II	III	IV
Rajnandgaon	0.046	0.024	0.028	0.027	0.036	0.117	0.011	0.090	0.005
Ratlam	0.017	0.012	0.017	0.016	0.024	0.234	0.145	0.274	0.129
Rewa	0.015	0.009	0.008	0.008	0.040	0.005	0.005	0.005	0.005
Sarguja	0.054	0.040	0.045	0.043	0.035	0.084	0.023	0.182	0.130
Satna	0.007	0.015	0.019	0.019	0.064	0.029	0.022	0.035	0.005
Sehore	0.007	0.004	0.026	0.031	0.069	0.046	0.005	0.087	0.005
Shahdol	0.016	0.016	0.026	0.020	0.039	0.415	0.152	0.139	0.105
Sidhi	0.070	0.035	0.035	0.027	0.073	0.013	0.103	0.115	0.005
Tikamgarh	0.000	0.003	0.010	0.009	0.025	0.005	0.005	0.124	0.022
MAHARASHTRA									
Aurangabad	0.068	0.045	0.059	0.038	0.047	0.031	0.005	0.020	0.019
Latur	0.036	0.023	0.035	0.035	0.030	0.063	0.016	0.035	0.054
Nanded	0.033	0.025	0.044	0.041	0.027	0.094	0.046	0.100	0.139
Osmanabad	0.034	0.022	0.034	0.031	0.028	0.090	0.043	0.042	0.066
Parbhani	0.049	0.036	0.082	0.091	0.052	0.064	0.041	0.054	0.106
TAMIL NADU									
Cuddalore	0.129	0.097	0.098	0.100	0.095	0.017	0.020	0.025	0.022
Dharmapuri	0.113	0.085	0.087	0.099	0.077	0.060	0.031	0.028	0.031
Thiruvannamalai	0.130	0.084	0.087	0.093	0.085	0.017	0.033	0.025	0.039
Willupuram	0.100	0.069	0.077	0.085	0.071	0.005	0.073	0.072	0.057

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