

# EDUCATION STATISTICS

1. **Coefficient of efficiency** - A measure of the internal efficiency of an education system computed as the ratio of the ideal number of pupil/student-years required to produce a number of graduates from a given pupil/student cohort in elementary/secondary education to the actual number of pupil/student-years spent to produce the same number of graduates expressed as a percentage. (2006 IACES)

<b>Elementary:</b>	
Coefficient of efficiency <sub>elem</sub> =	$\frac{\text{Total Promotees}_{Gr 6} \text{ (including repeaters)} \times 6^7}{\text{Pupil-Years}_{Gr 1-6}} \times 100$
<b>Secondary:</b>	
Coefficient of efficiency <sub>sec</sub> =	$\frac{\text{Total Promotees}_{Yr 4} \text{ (including repeaters)} \times 4}{\text{Student-Years}_{Yr 1-4}} \times 100$

2. **Cohort Survival Rate (CSR)** - The percentage of enrollees at the beginning grade or year in a given school year who reached the final grade or year of the elementary/secondary level. (2006 IACES)

(The calculation procedure using the reconstructed cohort method is in Annex-BR-\_\_\_\_-2006-02.)

3. **Completion Rate** - The percentage of first grade/year entrants in a level of education who complete/finish the level in accordance with the required number of years of study. (2006 IACES)

<b>Elementary:</b>
<b>Completion Rate</b> <sub>C, SY N</sub> = $\frac{\text{Graduates}_{C, Gr 6, SY N}}{\text{Enrollment}_{C, Gr 1, SY N-5}} \times 100$

<b>Secondary:</b>
<b>Completion Rate</b> <sub>C, SY N</sub> = $\frac{\text{Graduates}_{C, Yr 4, SY N}}{\text{Enrollment}_{C, Yr 1, SY N-3}} \times 100$

4. **Dropout rate** - The percentage of pupils/students who leave school during the year for any reason as well as those who complete the previous grade/year level but fail to enroll in the next grade/year level the following school year to the total number of pupils/students enrolled during the previous school year. (2006 IACES)

<b>Dropout Rate</b> <sub>Gr X, SY N</sub> = 100% – Repetition Rate <sub>Gr X, SY N</sub> - Promotion Rate <sub>Gr X, SY N</sub>
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Or:

<b>Elementary:</b>
<b>Dropout rate</b> <sup>2</sup> <sub>Gr X, SY N</sub> = $\frac{\text{Enrollment}_{Gr X, SY N} - \text{Repeaters}_{Gr X, SY N+1} - (\text{Enrollment}_{Gr X+1, SY N+1} - \text{Repeaters}_{Gr X+1, SY N+1} - \text{Net transfers}_{Gr X+1, SY N+1})}{\text{Enrollment}_{Gr X, SY N}} \times 100$
<b>Secondary:</b>
<b>Dropout rate</b> <sup>2</sup> <sub>Yr X, SY N</sub> = $\frac{\text{Enrollment}_{Yr X, SY N} - \text{Repeaters}_{Yr X, SY N+1} - (\text{Enrollment}_{Yr X+1, SY N+1} - \text{Repeaters}_{Yr X+1, SY N+1} - \text{Net transfers}_{Yr X+1, SY N+1})}{\text{Enrollment}_{Yr X, SY N}} \times 100$

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5. **Promotion Rate** - The percentage of pupils/students promoted to the next grade/year level in the following school year. (UNESCO)

**Elementary:**

$$\text{Promotion Rate}_{Gr X, SY N} = \frac{\text{Promotees}_{Gr X, SY N}}{\text{Enrollment}_{Gr X, SY N}} \times 100$$

**Secondary:**

$$\text{Promotion Rate}_{Yr X, SY N} = \frac{\text{Promotees}_{Yr X, SY N}}{\text{Enrollment}_{Yr X, SY N}} \times 100$$

If there is no actual data on number of promotees, promotion rate can be estimated from data on enrolment, repeaters and net transfers in succeeding year, i.e.,

**Elementary:**

$$\text{Promotion rate}^2_{Gr X, SY N} = \frac{\text{Enrollment}_{Gr X+1, SY N+1} - \text{Repeaters}_{Gr X+1, SY N+1} - \text{Net transfers}_{Gr X+1, SY N+1}}{\text{Enrollment}_{Gr X, SY N}} \times 100$$

**Secondary:**

$$\text{Promotion rate}^2_{Yr X, SY N} = \frac{\text{Enrollment}_{Yr X+1, SY N+1} - \text{Repeaters}_{Yr X+1, SY N+1} - \text{Net transfers}_{Yr X+1, SY N+1}}{\text{Enrollment}_{Yr X, SY N}} \times 100$$

6. **Repetition Rate** - The percentage of pupils/students enrolled in a given grade/year in a given school year who study in the same grade/year the following school year. (2006 IACES)

**Elementary:**

$$\text{Repetition Rate}_{Gr X, SY N} = \frac{\text{Repeaters}_{Gr X, SY N+1}}{\text{Enrollment}_{Gr X, SY N}} \times 100$$

**Secondary:**

$$\text{Repetition Rate}_{Yr X, SY N} = \frac{\text{Repeaters}_{Yr X, SY N+1}}{\text{Enrollment}_{Yr X, SY N}} \times 100$$

**Legend:**

- C - cohort of pupils / students
- Gr x - Grade x
- SY N - school year N
- Yr x - Year x

Pupil-Years<sub>Gr1-6</sub> - cumulative number of school years spent by pupils from Grade 1 to 6

Student-Years<sub>Yr1-4</sub> - cumulative number of school years spent by students from Year 1 to 4

**References:**

- IACES - Inter-Agency Committee on Education Statistics
- UNESCO - Education for All (EFA) 2000 Assessment: Technical Guidelines, United Nations Educational Scientific and Cultural Organization

<sup>1</sup> Although there are some private elementary schools with 7 years in the curriculum, the proportion of the seventh grade enrolment to total enrolment is negligible.

<sup>2</sup> The formula does not reflect the situation that transferees may also be repeaters or dropouts from other schools.

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## Calculation method

### Cohort Survival Rate (CSR)

The Cohort Survival Rate is computed using the reconstructed cohort method, shown below:

Step 1. Compute the Promotion and Repetition Rates for a particular area.

	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6
Promotion Rate	82.47%	90.18%	93.11%	93.22%	92.79%	96.32%
Repetition Rate	5.39%	3.29%	2.27%	1.60%	1.41%	0.37%

Steps 2 & 3. Compute the number of promotees up to grade 6 using the promotion rates for the respective grade/year levels. Compute the number of pupils/students in grade/year 1 who repeat once, twice, up to 6 times.

		Promoted to Gr 2	Promoted to Gr 3	Promoted to Gr 4	Promoted to Gr 5	Promoted to Gr 6
Cohort with no repetition $_{SY N}$	1,000.00	824.70	743.74	692.53	645.58	599.05
Cohort repeating once $_{SY N+1}$	53.92					
Cohort repeating twice $_{SY N+2}$	2.91					
Cohort repeating thrice $_{SY N+3}$	0.16					
Cohort repeating four times $_{SY N+4}$	0.01					
Cohort repeating five times $_{SY N+5}$	0.00					
Cohort repeating six times $_{SY N+6}$	0.00					

Promoted Cohort  $_{Gr X}$  x Promotion Rate  $_{Gr X-1}$

Repeated Cohort  $_{Gr 1}$  x Repetition Rate  $_{Gr 1}$

Step 4. Add the repeaters in the previous grade level who were promoted with the pupils in the current grade level who repeated.

		Promoted to Gr 2	Promoted to Gr 3	Promoted to Gr 4	Promoted to Gr 5	Promoted to Gr 6
Cohort with no repetition $_{SY N}$	1,000.00	824.70	743.74	692.53	645.58	599.05
Cohort repeating once $_{SY N+1}$	53.92	71.62	81.49	86.96	90.17	85.87
Cohort repeating twice $_{SY N+2}$	2.91	4.76	6.14	7.11	7.90	7.65
Cohort repeating thrice $_{SY N+3}$	0.16	0.29	0.40	0.48	0.56	0.55
Cohort repeating four times $_{SY N+4}$	0.01	0.02	0.02	0.03	0.04	0.04
Cohort repeating five times $_{SY N+5}$	0.00	0.00	0.00	0.00	0.00	0.00
Cohort repeating six times $_{SY N+6}$	0.00	0.00	0.00	0.00	0.00	0.00

(Repeated Cohort  $_{Gr X-1}$  x Promotion Rate  $_{Gr X-1}$ )  
+ (Promoted Cohort  $_{Gr X}$  x Repetition Rate  $_{Gr X}$ )

Steps 5-7. Calculate the total for each grade level to obtain the pupil-years. Multiply the pupil-years with the respective promotion rate to get the total promotees (including repeaters). Calculate the reconstructed cohort survival rate for each grade level by dividing the Total Promotees  $_{Gr X-1}$  (including repeaters) with the original cohort of 1000.

	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6
Pupil-years	1,057.00	901.37	831.79	787.11	744.26	693.15
Total Promotees (including repeaters)	871.70	812.89	774.52	733.76	690.61	667.65
Reconstructed Cohort Survival Rate	100.00%	87.17%	81.29%	77.45%	73.38%	69.06%