

Four numbers a head teacher can act on

This course produced fourteen indicators on six denominators. A district education report needs all of them; a head teacher needs four, and choosing which four is the analytical work rather than the formatting.

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Lesson 8 of 8

Education Programme Analysis — Learning

What this lesson covers

- Count the denominators first
- The district report
- The four numbers for a head teacher
- The distinction the whole course was for
- Module 4, in one paragraph
- What comes next

Count the denominators first

Indicator	Denominator	n
Gross enrolment ratio	Children aged 6–11 (projected)	963
Net enrolment ratio	Children aged 6–11 (projected)	963
Over-age share	Primary enrollees	1,052
Average daily attendance	Marks made	69,974
Students attending 90%+	Students with 20+ marks	1,200
Promotion, repetition, dropout	2023 students excluding transfers	1,255
One-year transition	Students in both years	1,103
Learning, all comers	Students who sat each round	741 / 658

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Count the denominators first

- Six different denominators and none of them is "students" — Two are projected populations, two are marks, three are. . .

Count the denominators first — In Python

```
import pandas as pd

denominators = pd.DataFrame([
    ("gross enrolment", "children aged 6-11, projected", 963),
    ("attendance, ADA", "marks made", 69974),
    ("attendance, regular", "students with 20+ marks", 1200),
    ("dropout", "2023 students, transfers excluded", 1255),
    ("learning change", "students who sat both rounds", 585),
], columns=["indicator", "denominator", "n"])
print(denominators)
```

Count the denominators first — In R

Build it in code, print it above the results, every time.

The district report — Example (cont.)

Education, four districts, school year 2023-24

ENROLMENT		denominator: 963 projected 6-11
Gross enrolment ratio	109.2%	1,052 primary enrolees
Net enrolment ratio	97.4%	938 aged 6-11
Over-age for grade	36.4%	grade 1 17.0%, grade 6 50.8%

Denominator is a 2015 census projected at 2.1% a year; about a sixth of it is an assumption. 12 student-years were recorded twice and deduplicated.

ATTENDANCE		February to April 2024
Average daily attendance	88.4%	69,974 marks
Students attending 90%+ of days	62.1%	1,200 students with 20+ marks
Students below 75%	9.5%	114 students

SCH07 and SCH18 were closed 11-29 March, fifteen school days. Their rates

The district report — Example (cont.)

are computed on the 45 days they opened. Counting the closure as absence would report them at 66.1% and 63.9% and rank them worst.

RETENTION		2023 cohort, transfers excluded
Promotion (incl. completion)	78.4%	n=1,255
Repetition	10.1%	
Dropout	10.5%	
One-year transition observed	88.5%	n=1,103 in both years

Dropout is 19.5% among over-age students against 4.8% in-age.

Centre reports repetition at 7.4% against 12.0-12.3% elsewhere while holding the highest over-age share; treat as a recording difference.

LEARNING		literacy
Below minimum band	19.3% -> 11.1%	
Advanced band	11.9% -> 26.1%	

The district report — Example (cont.)

Items correct, panel 56.8% -> 63.7% +6.9 points, n=585

Items correct, all comers 53.1% -> 61.8% +8.7 points

Instruments were 40 and 50 items; raw scores are not comparable and are not reported. 156 baseline students did not sit the endline and scored 39.3% against 56.8% for those who did.

NOT REPORTED

Survival to the final grade. A reconstructed cohort gives 19.3% on promotion and 40.3% on retention; neither is a completion rate. A true cohort needs six years of the register or a household survey.

Safely managed anything. This is an enrolment register, not a survey of children out of school -- every denominator above counts children the system already has.

The four numbers for a head teacher

- Four numbers, each attached to something a school can change

The four numbers for a head teacher

Number	Why this one	The action
Students below 75% attendance	A list, not a rate	Follow up this term
Over-age share in grade 1	Late entry is fixable at intake	Registration campaign
Repetition rate, this school	A decision the school makes	Review the criteria
Below-minimum band share	The children not learning to read	Targeted support

The four numbers for a head teacher — In Python

```
follow_up = (attendance_rates < 0.75).sum()  
print(f"students to visit this term: {follow_up}")
```

The four numbers for a head teacher — In R

One number, one list, one action.

The four numbers for a head teacher

- Notice what is not on that list — The gross enrolment ratio is a district planning number and a head teacher cannot. . .
- Match the indicator to the decision-maker's actual span of control — which is the same rule the WASH course applied to. . .

The distinction the whole course was for — In Python

```
funnel = pd.DataFrame([
    ("enrolled in primary", 1052),
    ("attending 90%+ of days", int(1200 * 0.621)),
    ("proficient or advanced in literacy", int(658 * 0.65)),
], columns=["stage", "students"])
print(funnel)
```

The distinction the whole course was for — In R

*# Three stages, three denominators. Do not draw them as one funnel without
saying so.*

The distinction the whole course was for

- Those three cannot be chained into a funnel — because they are measured on different denominators over different. . .

Module 4, in one paragraph

- What did I count, over what? — Person-time in epidemiology, visits in WASH, consenting cases in protection, marks in. . .
- What else could explain it? — Age structure in a cholera outbreak, a closed road in a water district, a service opening. . .
- What should someone do differently? — The question that decides whether the first two were worth asking, and the one. . .

What comes next

- Module 4 is complete.

Read the full lesson, with runnable code

[https://data-analysis.cassion.dev/courses/education-programme-analysis/
edu-08-the-education-report](https://data-analysis.cassion.dev/courses/education-programme-analysis/edu-08-the-education-report)