

...a school is a school is a school
(...Gertrude Stein 1913)

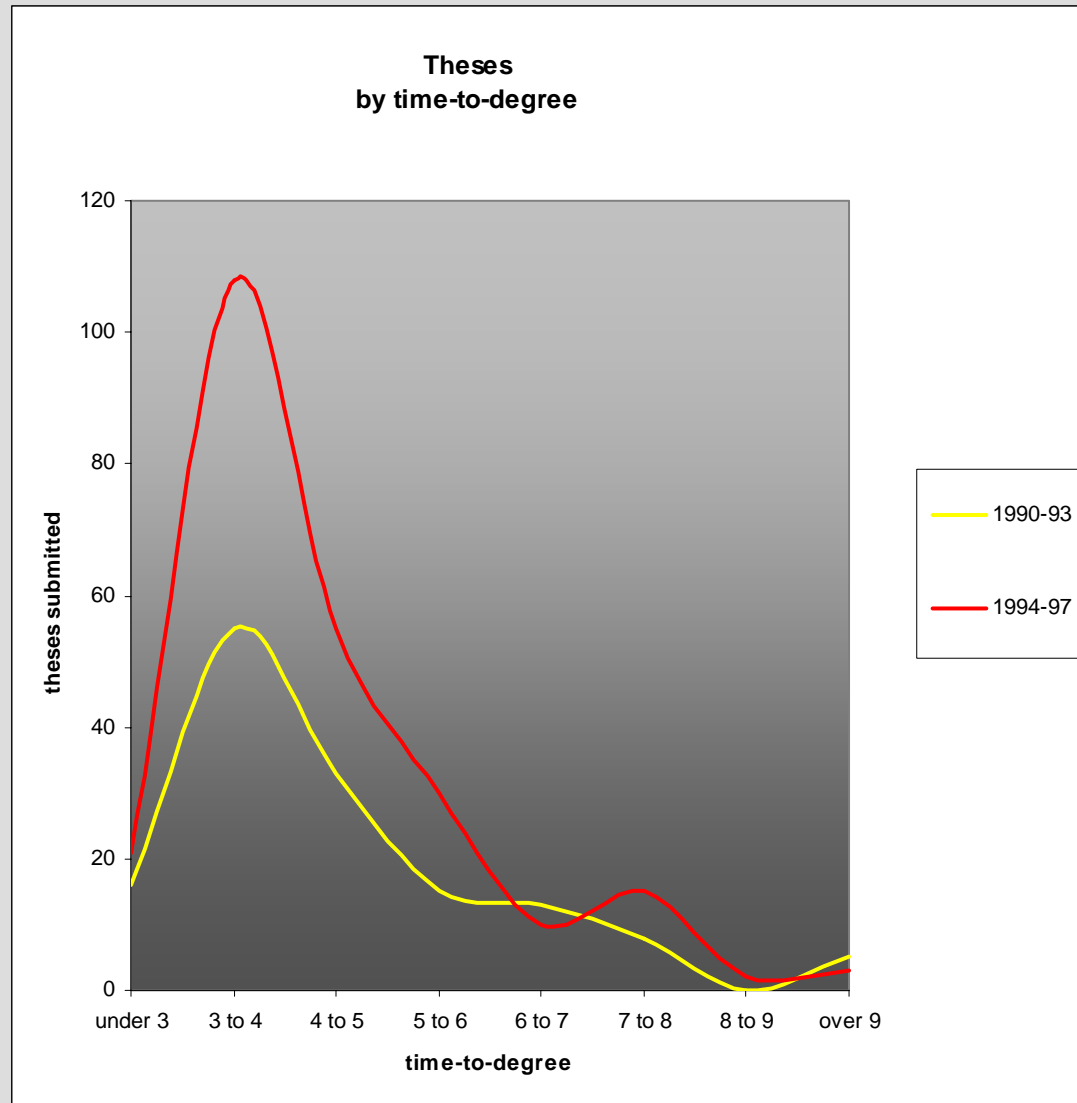
a school has:

- a start & end
- a curriculum
- students & “size matters”
- alumni

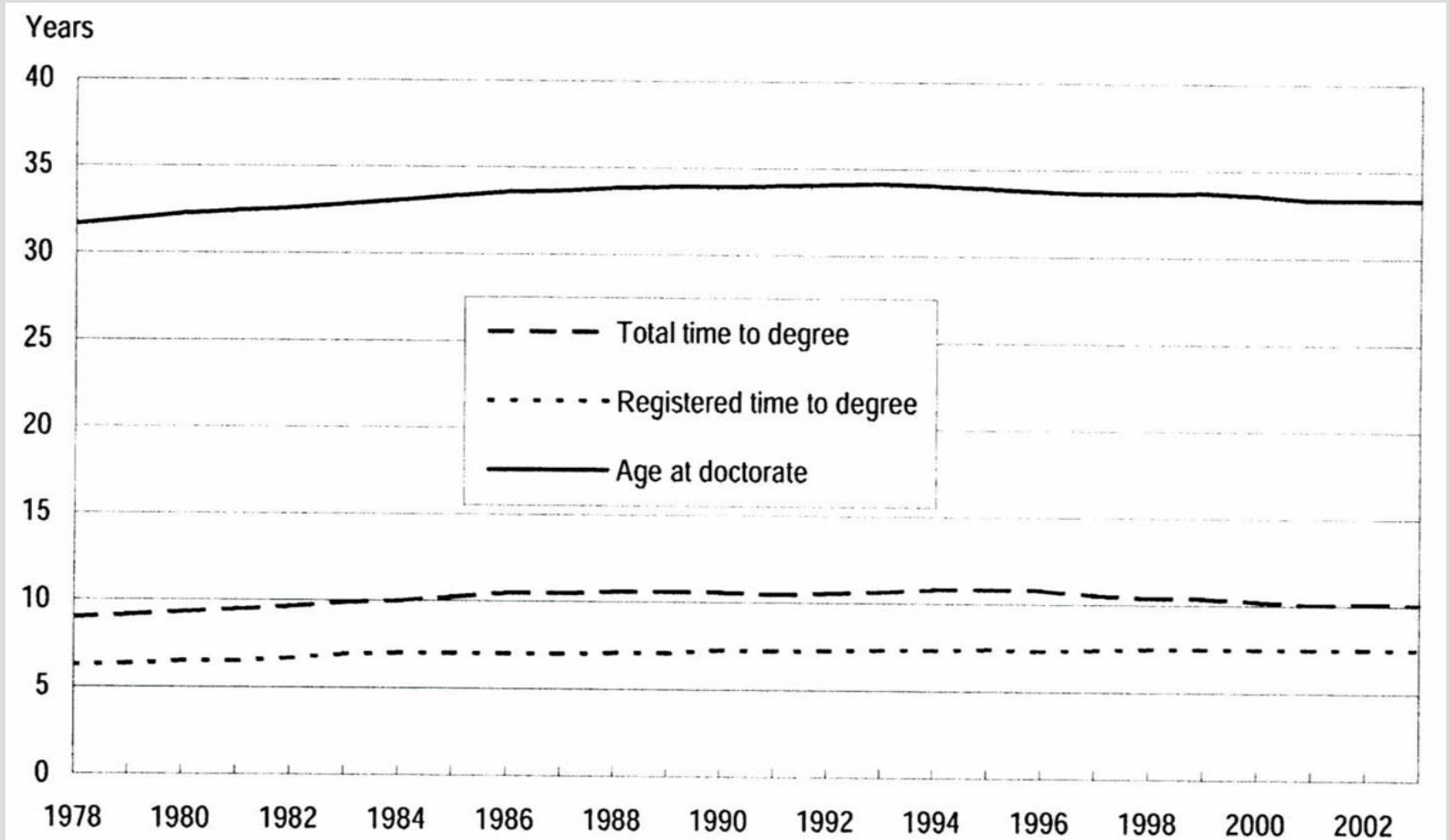
a school starts & ends

“four years, not for years”

- realistic objective = realistic task
- < 4 years ? (statistical evidence)
- 5 year limit
- cohort socialisation



time-to-degree USA



source: NSF

the 5-year abyss: low grad. rate

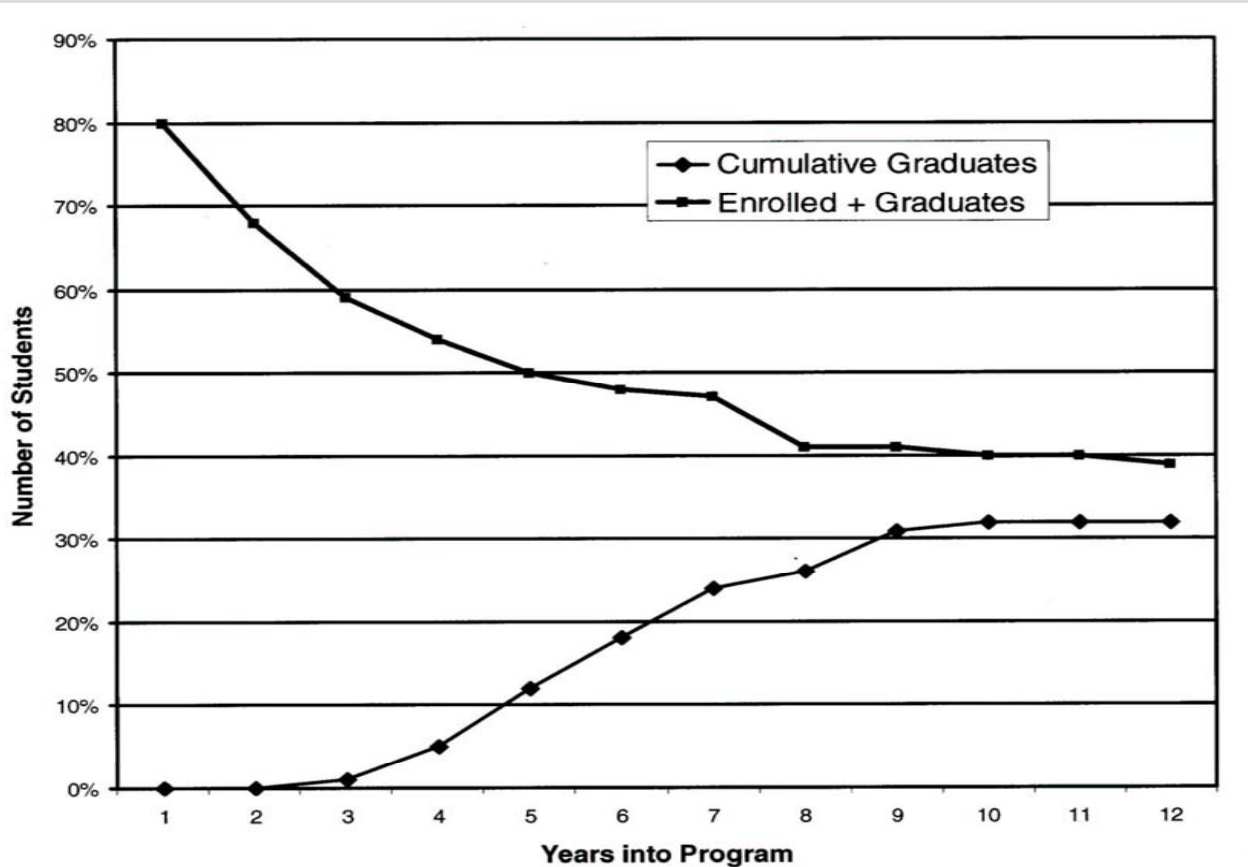


Figure 3B. Cumulative Graduates and Residual Students--
Low Graduation Rate Example.

completion rate USA

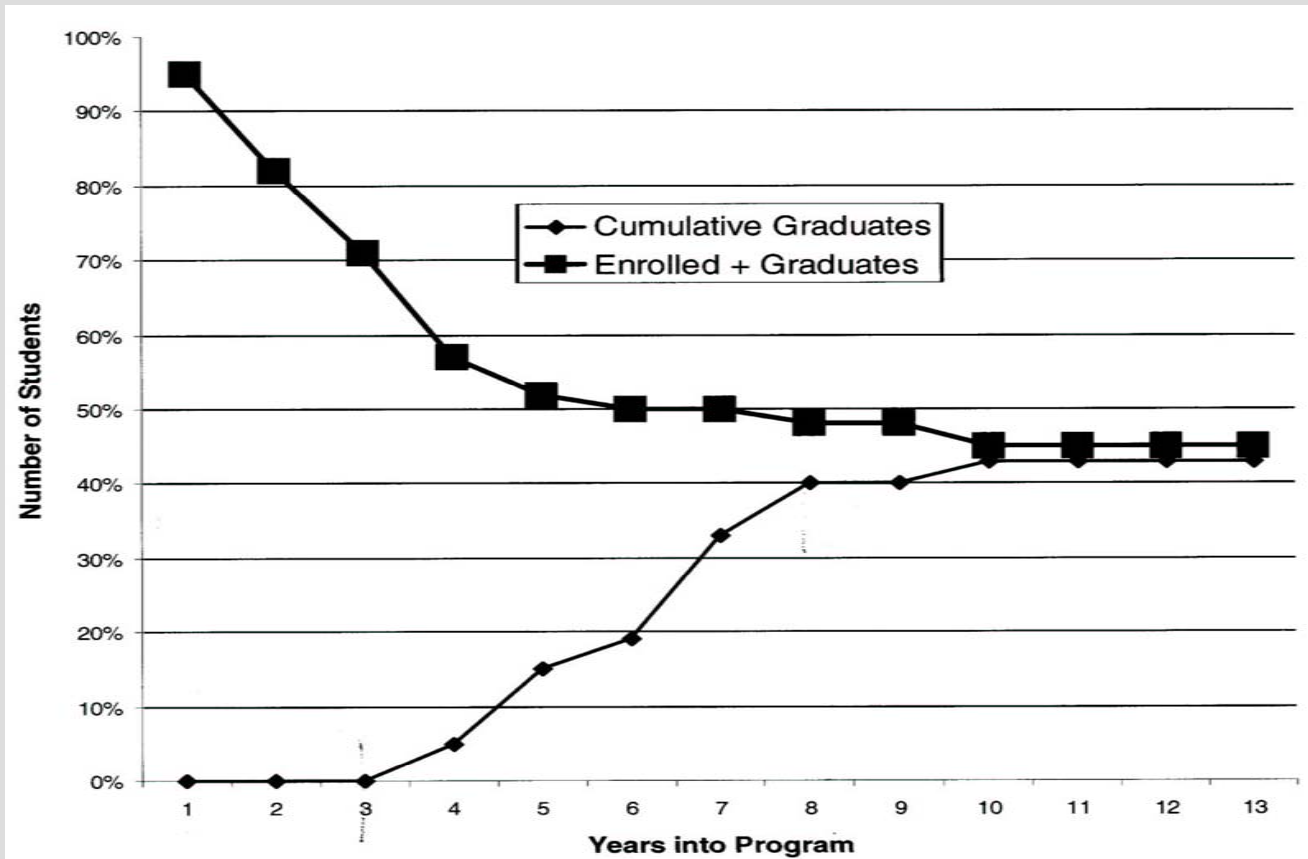


Figure 3A. Cumulative Graduates and Residual Students-- High Graduation Rate Example.

source:

a school starts & ends

“four years, not for years”

- realistic objective = realistic task
- < 4 years ? (statistical evidence)
- 5 year limit
- cohort socialisation

a school has a curriculum

- 1-2 years structured taught programme
- breadth versus depth: careers & age
- theoretical, analytical and methodological skills
- CID* proposal: double compulsory courses

* Carnegie Initiative on the Doctorate

3 reasons

- academic career: first job in undergraduate teaching
- non-academic: short research career
- positive trade-off between formal training and doing research:

generic skills:

- to teach
- to mentor
- to serve the university
- to publish
- to tell the truth
- to reach beyond the walls
- to change

transferable skills:

- research question/problem
- access literature
- collect data/field work
- write a thesis/report
- viva/defend your findings

a school has students

- critical mass: “size matters”
- classes & cohort socialisation
- selection : entry & progress

top 5 in the USA

sociology

| | |
|----------|------------|
| chicago | 155 |
| mad-wisc | 221 |
| berkeley | 109 |
| michigan | 163 |
| ucla | 139 |
| | 157 |

history

| | |
|-----------|------------|
| yale | 188 |
| berkeley | 206 |
| princeton | 68 |
| harvard | 146 |
| columbia | 334 |
| | 188 |

physics

| | |
|-----------|------------|
| harvard | 149 |
| princeton | 110 |
| mit | 315 |
| berkeley | 283 |
| caltech | 154 |
| | 202 |

psychology

| | |
|-----------|------------|
| stanford | 68 |
| michigan | 237 |
| yale | 91 |
| ucla | 188 |
| urba-cham | 229 |
| | 163 |

chemistry

| | |
|----------|------------|
| berkeley | 298 |
| caltech | 177 |
| harvard | 196 |
| stanford | 233 |
| mit | 245 |
| | 230 |

mathematics

| | |
|-----------|------------|
| berkeley | 241 |
| princeton | 67 |
| mit | 117 |
| harvard | 54 |
| chicago | 96 |
| | 115 |

source: NRC, USA

median size **176**

“concentrating the minds”: quality (ranking) and size

| Quarter | Econ | Soc | Pol | Hist | Biochem | Phys | Math | Chem |
|---------|--------|--------|--------|--------|---------|--------|--------|--------|
| 1 | 112 | 80 | 112 | 151 | 84 | 150 | 93 | 180 |
| 2 | 68 | 65 | 68 | 67 | 45 | 74 | 51 | 88 |
| 3 | 48 | 43 | 47 | 56 | 28 | 51 | 37 | 53 |
| 4 | 48 | 31 | 47 | 30 | 18 | 27 | 22 | 31 |
| mean | 70 | 55 | 69 | 76 | 44 | 75 | 50 | 88 |
| corr. | (0.91) | (0.99) | (0.91) | (0.92) | (0.96) | (0.95) | (0.96) | (0.95) |

source: NRC, USA

a school has students

“Graduate education is an activity subject to ***increasing returns to scale***, up to a program size rarely exceeded...the main reason for scale economies is that ***students educate each other***, they are apt to learn more from each other than from their teachers...”

Jacques Drèze 2001

selection & progress

- selection criteria
(project/grades)
- not TTD but student-year cost

$$SYC = \frac{\sum \text{student years invested}}{\text{number of PhDs earned}}$$

alumni & careers

- exit surveys
- feedback quality programme
- career development services
- career awareness