Does studying pay?

Human capital; what the data say about pay and jobs by education; the full cost of studying and the catch-up age; why pay feeds saving (the second engine); the payslip: gross, net, tax brackets, marginal and average rate, and the bracket myth.

1 Human capital

skills are an asset

- **Human capital**: "what you know and can do that employers pay for" → for most people the **biggest asset** they own (more than a house or savings) · asset = anything you own that has value
- An investment: costs **now** (fees + years without pay) → pays back **later** (higher pay, fewer spells out of work)
- Opportunity cost (Micro Lesson 1): what you give up → here, the **pay** of the years spent studying

2 The evidence

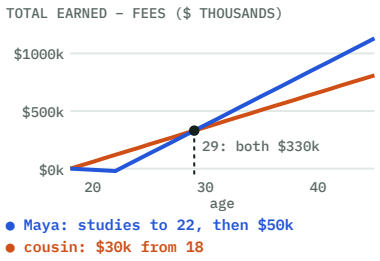
averages of groups

- US Bureau of Labor Statistics (government office for jobs and pay), 2024, full-time, typical (median) week: high-school diploma ≈ **$900** · bachelor's (first university degree) ≈ **$1,500** → $600 more = **two thirds** more · out of work **4.2%** vs **2.5%**
- OECD (club of mostly rich countries that collects data), *Education at a Glance* 2025: degree ≈ **54% more** pay than school only, on average
- **On average** = true of the group, not of every person · pay differs by field, country, school, person · a trade in demand can out-earn a degree
- One graduate who earns less ≠ the data are wrong

3 The catch-up

full cost → break-even

- **Full cost** = `fees + pay given up` · **break-even age** = `start of work + full cost ÷ extra pay a year`
- MAYA 18-22, fees $20k, then $50k · LEO'S COUSIN $30k from 18 → cost $20k + 4 × $30k = $140k ÷ ($50k − $30k) = 7 → 22 + 7 = **age 29** · algebra: `30(a−18) = 50(a−22) − 20` ⇒ 20a = 580
- Ana: 3 years, fees $15k + pay given up $75k = **$90k** · $40k vs $25k → $15k a year → 6 years → **age 27** · to catch Ben ($25k from 18) by 30 → at least $35k
- Same pay after studying → **never** catches up



4 Second engine

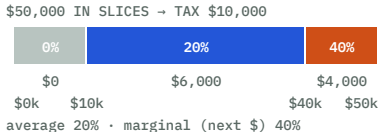
pay feeds saving

- Engine 1 (Lesson 2): compound interest (interest on interest) → needs something to compound · engine 2: **pay** → a job you like = a job you keep for decades
- Study → skills → higher pay → more left to save → more for compound interest
- Save a tenth: $50k → $5,000 vs $30k → $3,000 = **$2,000** more a year · $40k vs $25k → **$1,500**

5 The payslip

brackets

- **Gross**: what the contract says · **Net**: what lands in your account, after tax · **bracket**: each slice of income has its own rate
- Toy schedule: first $10k **0%** · $10k-40k **20%** · above $40k **40%** → on $50k: $0 + $6,000 + $4,000 = **$10,000**
- **Average rate** = `total tax ÷ income` = 20% · **marginal rate**: "the tax rate on the next dollar you earn, not on all of it" = 40%
- Other toy schedule 0% / 25% / 50% (lines $10k, $50k): $60k → $15,000 tax, $45,000 net, average 25%, marginal 50%



6 The bracket myth

a raise never hurts

- Only the slice **above** the line pays the higher rate → $40k → $50k: tax $6,000 → $10,000 → keep **$6,000** of the $10,000 raise
- Bonus $2,000 at a 50% marginal rate → keep **$1,000** · social contributions (pensions, health) also come out → Lesson 12

Watch out: full cost ≠ fees only → forgetting the pay given up makes studying look 6 × cheaper (Ana: 22 instead of 27) · and "a raise into a higher bracket leaves me poorer" is false

This is a lesson, not financial advice. It shows what the evidence says about choices like these; what is right for you depends on your life.