

1. Mark your confusion.
2. Show evidence of a close reading.
3. Write a 1+ page reflection.

## **The Economic Guide to Picking a College Major**

by Ben Casselman, FiveThirtyEight.com (an excerpt)

The millions of American college students heading back to campus this month face a grim reality: A college degree is no guarantee of economic success. But through their choice of major, they can take at least some steps toward boosting their odds.

The link between education and earnings is notoriously fraught, with cause and effect often difficult to disentangle. But a look at detailed data on college graduates by major reveals some clear messages: Don't be pre-med if you aren't planning to go to medical school; don't assume that all "STEM" — science, technology, engineering and math — majors are the same; and if you study drama, be prepared to wait tables.

Those lessons might seem obvious, but there's evidence that many students aren't learning them. By far the most popular major in recent years, psychology, is also one of the lowest-paying and leaves more than half its graduates working in jobs that don't require a college degree. Many of those students no doubt would have chosen to study psychology even if they had known about their uncertain career prospects. But research has consistently shown that many colleges and universities do little to push their students to make informed choices about what to study.

For all the recent skepticism about the value of a college education, a bachelor's degree is still "worth it" on average. In fact, according to a recent analysis by economists at the Federal Reserve Bank of New York, the average value of a college degree is near an all-time high, even factoring in rising tuitions.

But the key word there is "average." The same Fed researchers also found that the lowest-earning 25 percent of college graduates earn less than about half of high school graduates — and the high school grads also had four years to make money while the college students were taking on debt. And those figures don't include the shockingly high percentage of college students who don't graduate, many of whom end up with the worst of both worlds: saddled with debt, but with no degree to help their job prospects.

Today's college students, then, need to choose a major that maximizes their chances of graduating, and minimizes their chances of ending up in that bottom 25 percent, where they would have been better off skipping college, at least financially.

The typical recent college graduate with a full-time job earns about \$36,000 a year, according to the American Community Survey. But graduates with a degree in petroleum engineering, the highest-paying major, earned a whopping \$110,000. That's five times the \$22,000 median salary at the bottom end of the spectrum, library science. And that's just for graduates lucky enough to land full-time jobs. For a full ranking of 173 majors, go to: [https://fivethirtyeight.com/features/the-economic-guide-to-picking-a-college-major/?ex\\_cid=538twitter](https://fivethirtyeight.com/features/the-economic-guide-to-picking-a-college-major/?ex_cid=538twitter)

Of course, it's a safe bet that not many freshmen are struggling to decide between becoming librarians or becoming petroleum engineers. But even in more closely related fields, there are clear differences in earnings between majors. Actuarial science majors earn more than accounting majors; public policy majors out-earn history majors; and court reporting is a better earnings bet than criminology.

These figures don't necessarily mean that switching majors will bring a big financial boost. Economics majors, for example, earn \$7,000 — 18 percent — more on average than "general business" majors, but economics is also generally considered a harder and more prestigious major, and therefore tends to draw more top students; it's unlikely all those business majors could have gotten themselves a \$7,000 raise just by switching to econ. Similarly, majoring in astrophysics won't net a \$62,000 salary for someone who flunks Calculus 101. And of course, if a huge surge of students really did decide to follow the dollar signs into petroleum engineering, the glut of supply would likely drive down wages.

### **All STEM fields aren't the same**

Politicians love to tout the importance of science, technology, engineering and math majors. But when it comes to earnings, the “S” majors don’t really belong with the “TEM” ones. Engineering majors are nearly all high-paying. So are most computer and math majors, and math-heavy sciences like astrophysics.<sup>3</sup> But many sciences, particularly the life sciences, pay below the overall median for recent college graduates. Students who major in neuroscience, meteorology, biology and ecology all stand to make \$35,000 or less — and that’s if they can get a full-time job, which many can’t. Zoology ranks as one of the lowest-paying majors of any category, with a median full-time wage of \$26,000 a year.

### **Non-math types can make money, too**

Considering how much more money there is in engineering and other technical fields, you might expect students to flock to those majors. In fact, there’s almost no correlation between how popular a major is and how lucrative it is. Psychology is far and away the most popular major despite paying a below-average median wage of \$31,500. Highly paid engineering fields, meanwhile, are among the least popular fields of study.

The simple explanation is that technical majors are hard. Not everyone is cut out to be an engineer or a computer scientist. Economic research bears out that interpretation: In a working paper published last year, a group of researchers found that math and science majors were initially popular at a private liberal arts college in Kentucky — until students got their first round of grades.

Fortunately, there are well-paying majors even for the non-technically inclined, although some comfort with math still helps. Actuarial science majors are the best paid of the non-engineering, non-hard-science majors, with median earnings of \$62,000. Court reporting, food science and even public policy all have median earnings at or above \$50,000.

### **Avoiding unemployment**

Petroleum engineers have one other big advantage over other graduates: They’re much more likely to find jobs. Their unemployment rate was 1.8 percent, and of those with jobs, 87 percent worked at least 35 hours per week. Library science graduates, on the other hand, had a 10.5 percent unemployment rate, and just 71 percent worked full-time.

On the whole, though, the correlation between earnings and unemployment is surprisingly weak. The weak correlation likely reflects the fact that college graduates have a significant edge when it comes to finding jobs, regardless of what they major in. A new report from Burning Glass Technologies, an employment data company, finds that employers increasingly prefer applicants with bachelor’s degrees even for jobs that don’t traditionally require them. Nearly two-thirds of job postings for executive assistants now demand a bachelor’s degree, even though only about one-fifth of people currently employed in the field have one. As a result, the unemployment rate for young college graduates is 5.8 percent, compared to 9.8 percent for those with a high school diploma but no bachelor’s degree.

### **Not just a job, a career**

Underemployment — having a job that doesn’t require a college degree — is rising. Some construction and manufacturing jobs, for example, pay well even though they don’t traditionally require a degree. More worrisome are college graduates who end up severely underemployed, stuck in low-paying service jobs such as waiters, janitors and retail clerks.

By that narrower definition, students majoring in “cosmetology services and culinary arts” are the most underemployed, with more than a third working in low-wage service jobs. Drama and theater arts majors are nearly as bad, with more than 30 percent in such jobs; other artists and performers are also near the top of the list. The stereotype of starving artists working in coffee shops has more than a bit of truth to it.

### **Possible Response Questions:**

- How strongly will salary factor in to your decision to find your career? Explain.
- Select any passage and respond to it.