

How to learn at college

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College is a game. In playing it, you can optimize for many different outcomes: status, income, free time, pleasure... or learning. The latter is what I aimed at before leaving; here is my advice—gleaned from both success and failure—to anyone seeking a similar course.

1. Never attend lectures passively.

Impersonal lectures are categorically inferior to their own recordings. You can watch videos anytime, or multiple times; pause them or back up, in case you missed something; or speed up or slow them down, to match your comprehension rate. So you should never waste your time by letting someone talk at you when you could watch a recording instead—unless you wouldn't actually watch it, and need the accountability.

Aspire to never take classes with a passive lecture at their core. If you can't avoid some, skip the lecture—and learn from the textbook, slides, and recordings instead. If they take attendance, figure out how to fake it, or take the hit to your grade. But whenever you can't get out of attending, do your utmost to engage: sit in the front row, do live exercises, volunteer answers, and ask about anything you are curious about or don't fully understand. Seek first to not waste your time; but once it's taken from you, get everything you can out of the situation.

Instead of sitting through big lecture series, take small and interactive discussion-based classes to get your credits, and read the books that lectures are based on to get your content. That way, you'll constantly alternate between ingesting new ideas in bulk and digesting them in a give-and-take with other people's models of the world. Take in then process information like you ingest and digest your food; our

minds and bodies are best nourished on the same principle.

2. Use the library.

Reading is the best way to learn a course's content—but there is a lot more than assigned readings out there to absorb. If you're briefly curious about a topic, or some quote stuck out to you and you'd like more context, or you want to learn something that no small courses are offered on... just find a book in the library! You have access in under 20 minutes to virtually anything in the record of published knowledge. Why *not* use that as much as humanly possible?!

My university had over 9 million books in its libraries, and no limits on how many I could check out. So I took library use to the extreme, checking out a copy of virtually every book that even vaguely interested me and piling all of them (up to 200 at times) in my dorm's closet. With this "Random Access Library"™, even that 20 minute delay between impulse and investigation was eliminated. (I'm not sure I recommend doing this; it was great for me, but your priorities and mileage may vary.)

But that's not all! Libraries are also fantastic places to work; they're quiet, magnificent, and varied. Get restless in one place? You can take a 5 minute walk—without even stepping outside—and sit down somewhere else to continue. You can pick your ambiance: dead silence deep in the stacks, white noise by a ventilation duct, regular chatter in a café, or the occasional creaking of wooden chairs being pulled around in some reading room.

Working in a university library is a good way to stay humble, too: there's nothing like desperately racking your brain while surrounded by hundreds of thousands of books to remind you of the limits to your comprehension.

3. Talk to interesting people.

The people who seem most interesting are either very similar to you, or very different. In either case, you can learn a lot by having deep conversations with them, in a manner that not much else compares to.

Similar people hold up a mirror to you: you can see yourself in how they think and act and interact with the world, which gives you the opportunity to decide who you want yourself to be. My biggest personal changes have always come when I recognize myself in the flawed behavior of other people: "Wow," I'm able to tell myself. "Is *that* how I seem to others?" And once I've learned that about myself, I can change. Lean into the good parts, try to fix the bad parts, and come out a different—better—person.

You can also hone the specifics of your knowledge in conversation with others who understand the same things. By talking with others of similar but slightly different beliefs, you can challenge and refine the precise details of your ideas—in a way that's impossible in isolation. When you're the only person around who knows what you're talking about, who can tell you when you're wrong?!

Extremely different people are interesting for the opposite reason: they make you question and defend your core assumptions and values, the bedrock on which all your other knowledge is based. If you're wrong there, it's *really* important to know, and it's hard to know our assumptions or values until we come across someone who rejects them. It can be shocking to hear the earnestly-expressed ideas of extremely different people, so I relish sitting down with them: either I come away with a better understanding of why I believe the things I do, or I'll be corrected in my errors. There's no way to lose.

4. Do things with your knowledge.

As you learn, it's important to poke at your knowledge to ensure it matches reality and doesn't have any gaping holes. Do this by *using* your knowledge: take tests, write explanations, persuade people, run experiments, make projects... whatever you're most inclined to do. By measuring your understanding against reality, you can find and patch its imperfections; the more you do this, the better. No specifics truly matter, just the action.

Schools try to trick you into doing this by giving you homework, making you take tests, and occasionally requiring a guided project. But any assignment you get in

class is fundamentally constrained: it has to be evaluated and given to hundreds of people. This means most are rote, formulaic, and general; assignments famously feel like chores. So it's tempting to generalize, as many people do: "these assignments seem pointless, so practice must be pointless." Or worse, "so learning must be pointless." No! It's just that schools are in a tricky structural position; they're doing the best they can, only cannot help but fail.

That's because learning is inherently personal; it's about what *you* know, a quest to improve *your* understanding. So you should prod at the edges of your knowledge yourself: write an essay about something you barely get, test your physics skills against practice problems, code a personal website to learn how the Internet works. Practice pushing on your comprehension, and interfacing with reality there to be sure you're on the right track.

And you're in luck: although homework isn't the best, college is a goldmine for these kinds of learning opportunities! Join a club to learn debate; work in a research lab to see the cutting edge of science; start a blog to see how well your ideas stand up to online criticism; spend a few weekends in a makerspace to learn how to use a 3D printer. At large universities, there will be a resource for *anything* you're interested in—so seek them out. Don't just take classes.

That's my best advice for learning at college: avoid passive lectures, read a lot, have good conversations, test your knowledge. Now here's the real secret: this advice is *general!* You can read and talk and make things *anywhere*; you don't need to pay \$50k/year. And you can do these things your whole life long; learning needs not stop with a diploma, or when you "grow up."

In fact, I would argue that if you solely want to learn, today's colleges are not the best use of your money and time. Why not rent an apartment, get a part-time job, and spend all of your time reading and talking and writing and building anyways for a few years? You'd have much more freedom, you won't be in debt, and four years of diligently making things and showing them to people will certainly make you employable (or give you the income to not *need* a job). If you like the campus or

people, you could even live near a university and hang out there!

College might still be a good choice if you're optimizing for something other than learning. Do you want to go into academia? Do you lack the motivation or self-control to learn on your own? Do you need a visa to not get kicked out of America? Are you trying to build an elite network at a top university? Then college might be for you. But if you just want to learn, avoid it.