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# Guide to Career Planning, part 2: Skills and education

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## Part 2: Skills and education

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[Please read my opening disclaimers. Note especially that these are only *personal* views; I am not trying to malign anyone else's choice of career or education path. These are simply the things *I* would want to be told if I were entering college today.]

This post discusses skills acquisition throughout your lifetime, including your formal education. So I will start with college and move on from there.

**What should I study in college?**

Some people argue that college will be your one chance in life to *pursue your passion* -- to spend four years doing nothing but studying whatever you love the most, whether that's Renaissance literature or existential philosophy.

I disagree.

If you intend to have an impact on the world, *the faster you start developing concrete skills that will be useful in the real world, the better* -- and your undergrad degree is a great place to start. Once you get into the real world and you're primed for success, *then* you can pursue your passion.

*A typical liberal arts degree will be almost useless on its own.* So you usually won't have the option of immediately entering the workforce in a high-impact way when you graduate, and you'll have to go get a useful graduate degree.

And even if you are already planning to get a useful graduate degree, you are much better off *combining it with a substantive undergraduate degree* -- thereby becoming a "double threat". More on this in a bit.

**Which undergraduate degrees are useful in the real world?**

Typically, those that have a technical element of some form -- that teach you how to do something substantive.

Engineering degrees obviously qualify. The current myth that engineering and computer science degrees are less useful because all the jobs are going to India and China is silliness; ignore it.

Hard science degrees -- physics, chemistry -- also clearly qualify, as do mathematics and economics.

Why do I take this stance?

- Technical degrees teach you how to do something difficult and useful that matters in the real world. Even if you don't end up actually doing what the degree teaches you how to do, going through the experience of learning how to do it will help you go through other serious learning experiences in your career. Complexity and difficulty will not faze you.
- Plus, technical degrees teach you how think like an engineer, a scientist, an economist, or a mathematician -- how to use reason, logic, and data. This is incredibly useful in the real world, which generally demands rigorous thinking on the path to doing anything big.
- Plus, technical degrees indicate seriousness of purpose to future employers and partners. You get coded right up front as someone who is intent on doing real things.

*Graduating with a technical degree is like heading out into the real world armed with an assault rifle instead of a dull knife.* Don't miss that opportunity because of some fuzzy romanticized view of liberal arts broadening your horizons.

**What graduate degrees are useful in the real world?**

Generally, if you have a useful undergrad degree, I think graduate degrees are overrated. You can usually hit the workforce in a real job with just an undergraduate degree and progress rapidly according to your own ability and energy from there.

Of course, you're hearing this from someone who could barely stand to stay in school long enough to finish undergrad, so take that for what it's worth.

If you don't have a useful undergrad degree, then a useful graduate degree is *definitely* a great idea. Business, math, economics, science -- something practical, substantive.

Quite a few people in business have paired a liberal arts undergrad degree with an MBA. They seem to do just fine. But I think that's a missed opportunity -- much better would be an MBA on top of an engineering or math undergraduate degree. People with that combination are *invaluable*, and there aren't nearly enough of them running around.

As far as PhD's are concerned -- some of my best friends have PhD's. However, *most* of the people who have a huge impact on the world -- outside of pure research and education -- do not have PhD's. Draw from that whatever conclusion you think makes sense.

**What college or university should I go to?**

Try very very hard to go to one of the *best* colleges or universities in the world for your chosen field.

*Don't worry about being a small fish in a big pond* -- you want to always be in the *best pond possible*, because that's how you will get exposed to the best people and the best opportunities in your field.

If you can't start out in one of the top schools for your field, then work your butt off and get great grades and transfer as fast as you possibly can into a top school.

And if you can't do that -- if you end up getting your undergrad at a school that's not one of the top in your field -- then strongly consider pursuing a graduate degree in your field at a great school for your field.

In this way, even if your only option is starting out at a community college, by the time you finish 4-6 years of education, you can vault yourself into the top tier of your field.

**What should I do while I'm in school?**

I'm a *huge* fan of gaining practical experience in school by working during the school year, and then doing as many internships and co-op programs as you can.

Particularly at research universities -- where you want to be -- there are lots of on-campus jobs that will give you highly valuable work experience. *Take a job that will teach you something useful and practical* -- the two obvious examples are working for a professor in your field with an active research program who needs undergrads to do some of the work, and being a staff member at a campus computer lab or research lab.

And then *aggressively pursue internship and co-op programs* -- to get real-world working experience at companies in your field, before you even graduate. Target the best companies in your field, and go after the opportunities early and often.

If you do this right, by the time you graduate even with just an undergrad degree, you can have a year and a half of real working experience at high-quality companies plus another four years of practical experience from an on-campus job under your belt.

Plus, you will be implicitly demonstrating to future employers *how determined you are to succeed and how hard you are willing to work*.

In contrast, almost any other way you can spend your time while in school aside from getting reasonably good grades is a mistake.

**How should I think about skills development once I'm out of school?**

You should view graduating from school as just the beginning of your development of a whole portfolio of useful skills.

One of the single best ways you can maximize the impact you will have on the world and the success you will have in your career is by *continuously developing and broadening your base of skills*.

My favorite way of thinking about this is:

***Seek to be a double/triple/quadruple threat.***

Scott Adams -- the creator of Dilbert -- nails it:

> If you want an average successful life, it doesn't take much planning. Just stay out of trouble, go to school, and apply for jobs you might like. But if you want something extraordinary, you have two paths:
>
> 1. Become the best at one specific thing.
> 2. Become very good (top 25%) at two or more things.
>
> The first strategy is difficult to the point of near impossibility. Few people will ever play in the NBA or make a platinum album. I don't recommend anyone even try.
>
> The second strategy is fairly easy. Everyone has at least a few areas in which they could be in the top 25% with some effort. In my case, I can draw better than most people, but I'm hardly an artist. And I'm not any funnier than the average standup comedian who never makes it big, but I'm funnier than most people. The magic is that few people can draw well and write jokes. It's the combination of the two that makes what I do so rare. And when you add in my business background, suddenly I had a topic that few cartoonists could hope to understand without living it.
>
> ...Get a degree in business on top of your engineering degree, law degree, medical degree, science degree, or whatever. Suddenly you're in charge, or maybe you're starting your own company using your combined knowledge.
>
> Capitalism rewards things that are both rare and valuable. You make yourself rare by combining two or more "pretty goods" until no one else has your mix...
>
> It sounds like generic advice, but you'd be hard pressed to find any successful person who didn't have about three skills in the top 25%.

The fact is, this is even *the secret formula to becoming a CEO*. All successful CEO's are like this. They are almost never the best product visionaries, or the best salespeople, or the best marketing people, or the best finance people, or even the best managers, but they are top 25% in some set of those skills, and then all of a sudden they're qualified to actually run something important.

You can apply this principle to the degrees you can choose to get in school.

I already talked about combining an undergrad engineering degree with an MBA. I'll hire as many of those people as I possibly can.

An MBA plus a law degree can be a great combination -- and probably far more useful than either of those degrees by themselves.

Or even combine two undergrad degrees -- computer science plus physics, say, or physics plus economics.

You can also apply this principle to skills that you develop once you leave school.

Let me cite as examples *five skills* that you can develop once you leave school that, in combination with your degree or degrees and your other skills, can help maximize your potential:

**First, communication.**

Back to Scott Adams:

> I always advise young people to become good public speakers (top 25%). Anyone can do it with practice. If you add that talent to any other, suddenly you're the boss of the people who have only one skill...
>
> At least one of the skills in your mixture should involve communication, either written or verbal.

The great thing about communication is that most people are terrible at it, because they never take it seriously as a skill to develop.

This is particularly true of engineers and technical people, who often quaintly believe that the world works logically and that people will automatically recognize the quality of things.

*Ha!*

Of course, communication is critically important because it's how you convey information and concepts to lots of people in ways that will cause them to change their behavior.

This is one good argument for certain liberal arts undergrad degrees, such as English. But you don't need specific college training to be a good communicator -- you can learn communication many other ways, including by doing, by practicing, by taking classes (how about a class in standup comedy? I'm serious!), and by reading a lot. And communication in combination with some other useful skill is much more powerful than communication alone.

An engineer or a finance person or a lawyer who can communicate is hugely more valuable than one who cannot.

And in the long run, you are going to have a very hard time ever changing the world if you can't communicate really well.

**Second, management.**

If at all possible, learn how to manage people.

The best way is to learn from a great manager.

Early in your career, make sure you are working for a great manager -- you'll know her when you see her in action -- and then ask her to teach you how to do it.

And then give it a shot -- ask for and get responsibility for a team of people whom you manage.

Even if your career path won't involve managing lots of people, being *able* to manage will give you a highly valuable tool that you can pull out whenever you need it, instead of forcing you to always be reliant on other people to manage.

Worst case, you'll understand a lot more about why companies work the way they do and why people are the way they are. Which is hugely helpful when you set about doing something new.

**Third, sales.**

Learn how to sell.

I don't mean, learn how to sell someone a set of steak knives they don't need -- although I hear that can be quite an education by itself.

I mean, learn how to convince people that something is in their best interest to do, even when they don't realize it up front.

Think of this as the art of being able to interact with people such that they will do what you want, predictably and repeatedly, as long as you are making sense and offering them something they *should* want.

This is another terribly underrated skill, at least among people who aren't professional salespeople. But it's an incredibly general skill that can be helpful not only in your career but throughout your entire life. Knowing how to sell can also help you *recruit, raise money, talk to investors, create business partnerships, deal with reporters and analysts, and more* -- even, God help you, in your marriage and with your kids.

Spending a year or more in an actual salesforce can be a superb idea even if you have no intention of making your career in sales. John Doerr once told me that the year he spent "carrying a bag" in sales at Intel in the late 70's was the most valuable year of his life in terms of skills development -- skills he now uses every day as one of the world's most successful venture capitalists. If you've ever had John Doerr try to talk you into something, you'll know what he means.

**Fourth, finance.**

A strong level of financial literacy -- financial theory, understanding financial statements, budgeting and planning, corporate structure, how equity and debt markets work -- will be a huge boost for almost any career.

Again, this is a more general skill that it appears to be -- having financial skills will also help you in your personal life, as well as in any nonprofit organizations in which you participate.

And if you ever want to start your own company, being financially literate will be a huge help.

If you're, for example, a programmer working at a tech company and you don't know anything about finance, go find a finance person and offer to teach her all about software in return for her teaching you all about finance.

Otherwise, finance is something you can easily learn by taking classes, or by reading books.

Also, make an investment in yourself by reading the *Financial Times* and the *Wall Street Journal* every day. Read those two papers cover to cover for five years and you'll know a lot of what you need to know. (This recommendation will be even more practical once Rupert Murdoch makes the *Wall Street Journal* web site free. The *Financial Times* just announced its web site is becoming free for casual readers. But even still, if I were you, I'd get paper subscriptions to those two papers, and every day take an hour and sit in a corner and read them cover to cover -- except of course for the *Journal*'s op-ed pages; those will rot your brain.)

**Fifth, international.**

Time spent on the ground in other countries and in other cultures will pay off in many different ways throughout your career.

If your company, or university, offers you the opportunity to spend a year in another country, it's probably a pretty good idea to take it.

Personally I'd incline towards spending that time in younger, faster growing market economies -- like China, India, South Korea, or Argentina -- versus older, slower growing market economies like France or Germany. But almost any international exposure is likely to be helpful.

This is another of those skills where there's both a pragmatic benefit -- you will have experience on the ground with people in a specific country -- and a general benefit -- you will know how to think more broadly than the average American, or American president, who has never been out of the country.

There aren't very many interesting businesses anymore that don't have a strong international element -- in fact, many American companies now generate the majority of their revenue and profit outside the US. Having a global perspective can only help you maximize your future opportunities.

**Any final thoughts on education?**

Yes.

If you're in college now, or about to graduate from college, and you come from an upper middle class background -- especially if you are going to an Ivy League school -- take the time to read a provocative essay David Brooks wrote several years ago called "The Organization Kid".

Some excerpts:

> I asked several [Ivy League] students to describe their daily schedules, and their replies sounded like a session of Future Workaholics of America: crew practice at dawn, classes in the morning, resident-adviser duty, lunch, study groups, classes in the afternoon, tutoring disadvantaged kids in Trenton, a cappella practice, dinner, study, science lab, prayer session, hit the StairMaster, study a few hours more...
>
> [N]owhere did I find any real unhappiness with this state of affairs; nowhere did I find anybody who seriously considered living any other way. These super-accomplished kids aren't working so hard because they are compelled to... It's not the stick that drives them on, it's the carrot. Opportunity lures them... [I]n a rich information-age country like America, promises of enjoyable work abound -- at least for people as smart and ambitious as these. "I want to be this busy," one young woman insisted, after she had described a daily schedule that would count as slave-driving if it were imposed on anyone...

> That doesn't mean that these leaders-in-training are money-mad (though they are certainly career-conscious). It means they are goal-oriented. An activity -- whether it is studying, hitting the treadmill, drama group, community service, or one of the student groups they found and join in great numbers -- is rarely an end in itself. It is a means for self-improvement, résumé-building, and enrichment. College is just one step on the continual stairway of advancement, and they are always aware that they must get to the next step (law school, medical school, whatever) so that they can progress up the steps after that...
>
> They're not trying to buck the system; they're trying to climb it, and they are streamlined for ascent...
>
> Kids of all stripes [today] lead lives that are structured, supervised, and stuffed with enrichment... Today's elite kids are likely to spend their afternoons and weekends shuttling from one skill-enhancing activity to the next. By the time they reach college, they take this sort of pace for granted...
>
> In short, at the top of the meritocratic ladder we have in America a generation of students who are extraordinarily bright, morally earnest, and incredibly industrious. They like to study and socialize in groups. They create and join organizations with great enthusiasm. They are responsible, safety-conscious, and mature. They feel no compelling need to rebel -- not even a hint of one. They not only defer to authority; they admire it. "Alienation" is a word one almost never hears from them. They regard the universe as beneficent, orderly, and meaningful. At the schools and colleges where the next leadership class is being bred, one finds not angry revolutionaries, despondent slackers, or dark cynics but the Organization Kid.

Now, if your parents are middle class, or lower middle class, and you're attending a state school or a local college, and you're working your way through school in order to pay for tuition, you can stop reading now; you probably don't have anything to worry about. But if you read Brooks' essay and recognize yourself, read on.

The good news is that Brooks' fundamental thesis is correct: *kids graduating from top colleges and universities today are in many ways better prepared for achievement and success than ever before*. As a group, you are better educated, better trained, more motivated, and more serious than many of your predecessors. And that is fantastic.

**The risk, however, is this:**

If you have lived an orchestated existence, gone to great schools, participated in lots of extracurricular activities, had parents who really concentrated hard on developing you broadly and exposing you to lots of cultural experiences, and graduated from an elite university in the first 22 or more years of your life, you are in danger of *entering the real world, being smacked hard across the face by reality, and never recovering*.

What do I mean? It's possible you got all the way through those first 22 or more years and are now entering the workforce without *ever really challenging yourself*. This sounds silly because you've been working hard your whole life, but working hard is not what I'm talking about. You've been continuously surrounded by a state of the art parental and educational support structure -- a safety net -- and *you have yet to make tough decisions, by yourself, in the absence of good information, and to live with the consequences of screwing up.*

**In my opinion, it's now critically important to get into the real world and really challenge yourself -- expose yourself to risk -- put yourself in situations where you will succeed or fail by your own decisions and actions, and where that success or failure will be highly visible.**

*By failure I don't mean getting a B or even a C*, but rather: having your boss yell at you in front of your peers for screwing up a project, launching a product and seeing it tank, being unable to meet a ship date, missing a critical piece of information in a financial report, or getting fired.

Why? If you're going to be a high achiever, you're going to be in lots of situations where you're going to be *quickly making decisions in the presence of incomplete or incorrect information, under intense time pressure, and often under intense political pressure*. You're going to screw up -- frequently -- and the screwups will have serious consequences, and you'll feel incredibly stupid every time. *It can't faze you -- you have to be able to just get right back up and keep on going.*

That may be the most valuable skill you can ever learn. Make sure you start learning it early.