

Lessons Elite Colleges Can Teach About K-12 Education

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Introduction

In Amanda Ripley's first book, *The Smartest Kids in the World: And How They Got That Way*, she profiled American foreign exchange students spending a year in the best education systems around the world. She selected Finland, South Korea, and Poland as the best education systems to examine more closely, and provided tremendous insight into what kind of strategies lead to the most effective ways to teach our students. When thinking about the problem of K-12 education myself, I thought that it might be useful to examine more closely an education system in the US that does quite well, which is of course our system that teaches our best students at elite colleges and universities. The US might not have elementary or secondary schools that lead the world in performance, but we do have a highly effective system of elite colleges that really are the envy of the rest of the world.

In my view, I thought it might be useful to follow a student in their freshman year of college at three different types of elite schools, an elite Ivy League University, a top performing private liberal arts college, and an extremely successful public university as well, so that we might learn lessons about how to teach these same kids in their senior year of high school. Now I have not attended an elite Ivy League school like Harvard, Yale, or Princeton, and I have not attended a top performing liberal arts school like Williams or Amherst. I did however spend my undergraduate years getting a degree from Stanford University in the mid-90s, and later worked as a teaching assistant in a variety of economics classes when I was working on my PhD at Berkeley. What struck me the most, when I started considering this problem, is that the education these extremely talented students get is quite similar at all of these types of schools.

As far as educational approaches go, the way I think of the process is one of layering, where in each class students are presented a variety of different ways to learn the material being taught, and even if one method might fail there are several other layers that might succeed later on down the road. First, there is the assigned reading, but if the textbook does not teach you then perhaps going to lecture might. If going to lecture fails you as well, then perhaps going to section and being taught by a teaching assistant might do the trick. If all of those fail, then you might be able to figure things out on the problem set, homework, or paper, and if you have trouble with those, students often form study groups so that you can learn the material from your fellow peers as well. If that does not work, then you can go to office hours and ask questions, either with the professor or the teaching assistant, so that by the end of it all there about 6 ways to learn the material, and in order not to learn the material you need to slip through the educational net for all 6 of them.

Now I also thought that looking at the issue of education this way would be helpful not just for structuring a way of teaching, but also how to structure a whole educational system. The US does have an extremely successful system of elite college and universities, and realistically high school students are not all that different from college students, so perhaps we could learn valuable lessons from how our system of elite of higher education works. If you look at how our top performing institutions of higher education work, you can see there are some features that are quite important for their success and others that you might expect to be important that turn out not to be. The rest of this policy memo highlights what each one of them are.

Four Features that Are Important to the Success of Our Elite System of Higher Education

The first aspect of our current system of elite colleges and universities that is quite important for its success is the high quality of the professors who do ultimately teach the students and do the research there. Becoming a professor at an elite college and university is an extremely difficult goal to achieve. Not only do you need to do extremely well in high school in order to get into a good college, you need to do extremely well in college in order to get into a top graduate school. Then you need to do extremely well in graduate school in order to get any kind of job in academia, and then even if you get an academic job you still need to make it through the tenure granting process in order to keep that job long term. Taken overall, if you need to be in the top 1% of student in order to get into an elite college or university, then in order to become a professor you probably need to be in the top 0.1%. This means our elite system of colleges and universities do make sure the individuals doing the teaching really are the most talented in the country, and the incredible talent of the pool of professors really is one of the pillars that ensures our best colleges and universities really are successful.

The second aspect of our current system of elite colleges and universities that is quite important for its success is the ability for students to choose from a wide variety of options for where they want to go to school. School choice really is an entrenched feature of our current system of elite higher education, where the best students apply to many different colleges around the country, and are likely to get into several, and then each college has to compete in order to get the best students to attend their particular school. This need for each college to convince an incoming class of students to go to their own school harnesses the power of competition and motivates colleges to make sure they are providing the highest quality student experience every year.

The third aspect of our current system of elite colleges and universities that is quite important for its success is the use of tracking to distribute the best students into certain colleges and the average students into other schools. Tracking is one of the most hotly debated issues in K-12 education, however one place where this issue is largely settled is in the way our system of higher education sorts the best students into the most prestigious schools and has other schools dedicated to teaching less talented students. There are suggestions about how to reform the college admissions process surrounding the issues of race and income and how standardized tests might play a role, but even this discussion is about letting the most talented students of all races and incomes into the best schools, and not about getting rid of the sorting process by talent entirely.

The fourth aspect of our current system of elite colleges and universities that is quite important for its success is the higher level of funding that these schools provide to pay for the education of the students who go there. Clearly, the most selective and elite colleges in the country have a lot of money, and spend a lot on educating their students. For the 2019-2020 school year, the average tuition at an Ivy League college was around \$57,000, which is much higher than the \$32,000 the US spends on average to educate a college student, which is much higher than the \$14,000 the US spends on average to educate a K-12 student.⁽¹⁾ Some people argue that providing more funding for our K-12 schools will not really help much, but if the elite colleges are any guide, then clearly if you want to provide the best education for our most talented students it certainly helps to spend a lot of money.

Four Features that Are Not Important to the Success of Our Elite System of Higher Education

The first feature that is not important for elite colleges and universities in the US is class size. There has been a robust debate about how effective it would be to reduce class size in elementary and secondary schools, but for the best colleges at least, reducing class size is not been a big priority for them. In my four years at Stanford, I had one class my entire time there that had significantly less than 50 students, where even if some classes did have smaller sections, there were also many with hundreds of students in large lectures. Even though it is possible this feature has changed since I went to Stanford over 20 years ago, close interaction with faculty in small class sizes was not a key feature when I was there, and is likely not a key feature in how our best students are taught at other elite colleges as well.

The second feature that is not important for elite colleges and universities in the US is time in class. In the debate over K-12 education, some people propose to increase the amount of time spent in class perhaps by shortening the summer vacation or extending the school day. The rule of thumb at Stanford was that you were supposed to take 15-20 credits a quarter, and that each credit included one hour of instructional time per week. That means your total time in class was about 15-20 hours, which is substantially below the 30 hours a week I spent in class during high school. In college at least, people are expected to take the initiative in their own education, where the time in class is reduced to make sure the lectures and sections that do take place provide the greatest possible benefit, and much of the learning is supposed to be done by students on their own outside of class.

The third feature that is not important for elite colleges and universities is teacher accountability through standardized testing. Elite colleges do look at standardized tests like the ACT or SAT when deciding who to admit, and many college students take standardized tests like the GRE, MCAT, or LSAT toward the end of their college career or after they graduate, but none of those standardized tests are used to evaluate how successfully college teach their students. Each professor usually has the ability to write their own tests for their own courses, and therefore sets the means to evaluate how well each student is doing in their courses. What colleges do not do is use standardized tests to see how much the students in their college are learning compared to those in other colleges, and then take steps to fix any deficiencies that might be identified. The goal seems to be to provide professors with the greatest amount of autonomy and flexibility and rely on their own expertise and talent to ensure the production of rigorous and effective courses.

The fourth feature that is not important for elite colleges and universities is the adoption of new technology in their classrooms. Even though there are exceptions for things like lab classes in science and engineering, for the most part, elite colleges rely very heavily on the standard lecture format where one teacher gives hour long talks in front of large number of students listening in their seats. Of course, the standard practice of elite colleges has been completely upended by the pandemic, where now because of Covid-19, colleges are being forced to switch entirely to online learning. It is generally accepted at these elite college and universities however that in person instruction is still better than online learning and will try and go back to their old ways as soon as the pandemic is over.

Conclusion

Clearly, educating the most talented student in college is very different from teaching all of the K-12 students going to school, so that means some lessons from elite colleges are not going to apply more broadly. For example, school choice is easier to achieve when students can move away from home, and tracking is probably more useful for older students who take more specialized classes, than for early elementary students who are all trying to learn to read. Others lessons like recruiting and training high quality teachers probably applies well more broadly, as does spending more on a students education. At the same time, some of the approaches that do not apply to the most talented students at elite colleges, like smaller class sizes, more time in class, or standardized testing might work for younger students going and for schools that are performing less well. Even if these recommendations do not apply for all students, it still might serve as a guide for what approaches are most likely to be successful for our best performing students in high school. In general, I found this way of thinking about the problem to be instructive and did provide a way to see what works when educating our best students overall.

End Note

#1 – The average tuition and fees charged by Ivy League colleges in the 2019-2020 school year was \$56,700. According to the National Center for Education Statistics, in 2016, the US spent on average about \$13,600 a year per student for their primary and secondary education and \$31,600 per student in college (NCES 2020).

Reference

National Center for Education Statistics. 2020. "The Condition of Education 2020." US Department of Education, Institute of Educational Sciences. May 2020.