

The High School and College Boundary

Education 403X: Education Digital's Future

Manmeet Mavi, Shaheer Rizvi, Matt Williams, Hannah Rich and Katy Elkin

"The boundaries between high school and college were established during a very different epoch of industrial capitalism. Digital technology is finally making it possible to consider other ways of structuring education, connecting school and work, and integrating both into the life course of young adulthood."
— Quoted from the Education's Digital Future (EDF) 403x Syllabus

Introduction

The first EDF session of the quarter focused on the changing boundaries between High School and College. During this session, we discussed the origins of the formalization of high school and college as separate and considered the possible benefits and challenges of reorganizing the time/space of what we now call grades 10-14.

What follows is the synthesis of the resulting discussion from this class and the online Piazza posts following the class. This paper is structured around the following these questions:

- I. What are the boundaries between high school and college, and how were they established?
- II. What are the underlying theories governing the organizational logic of this divide?
- III. What are the consequences and limits of this categorical distinction?
- IV. How might digital media enable more flexible organization of school and the life course?

Section I.

Defining the Boundaries between High School and College

Let's start with the similarities between high school and college:

- 1 **Social grouping:** "Ailif was curious about the notion of American high schools as characterized by their social circles, in-groups, and cliques. While some group members argued whether this idea might represent an overlap with universities, we also discussed some American television and movies that really amplify the idea of cliques. Someone definitely brought up *Saved by the Bell*, and *Saved by the Bell, the College Years*." (Liam Aiello's group)

- 2 **Tracking:** “Prof. Pea raised the idea of tracking as a uniquely high school practice, but other members of the group noted that certain universities — including Stanford Business — have aspects of tracking that reflect students' prior experience (in the case of the Graduate School of Business), their need for remediation when entering college, or their testing into a university's honors program” (Liam Aiello’s group)
- 3 **Credentials:** “Both give credentials associated with achieving certain milestones” (Shaheer Rizvi’s group)
- 4 **Instructor:** “Some sort of instructor (authority figure) leading the educational experience” (Shaheer Rizvi’s group). As a caveat, Michael McLaughlin noted that “University and college professors are often (not always) obligated to engage in research or under pressure to publish. This can leave teaching as a lower job priority.” So, even if they have to teach — it might not be a priority.
- 5 **Institutions of learning:** “The obvious similarity is that both high schools and colleges are institutions of learning. In this respect they should look similar and if we strip away the formal structure and customs this might be the case. Does an online high school course look all that different from an online college course? I doubt it. We might also just follow a student as they sit in class and prepare for class — without any unusual cues I suspect that through such a lens it would be difficult to separate a high school student from a college one.” (Michael McLaughlin)
- 6 **Prior experience:** “Shelley noted that an overlap with high school and college is that you don't have a wealth of "real world experience" before entering into either institution.” (Liam Aiello’s group)

Our colleagues also raised some of the significant differences between the two domains of education:

- 1 **Definitions of success:** In high school, students need to “get good grades so you can impress a college admissions officer and move up a social ladder,” while in college, students “grades aren’t as emphasized,” and there are “different definitions of success (build good relationships with professors, get involved in research, career development doesn’t mean 4.0 GPA necessarily)” (Farah Weheba’s group)
- 2 **Learning responsibility:** “The general perception is that teachers are largely responsible for student learning in high schools and students are largely responsible for their own learning in college.” (Michael McLaughlin) This often translates into greater teacher accountability in high school, and significantly less so for college.
- 3 **Physical structure:** “Truancy is an issue in high school but not college – high school students must physically be in the building for a specific set of hours. In college on the other hand, there are still requirements, but the expectations are different (the school

admin/ police won't come find you if you're not in class). We explored the idea of a bell system, prevalent in most high schools, as a symbol of strictly mandated activities and push towards conformity, a motif for the regime of schooling." (Alice Fang's group) Also: "High schools traditionally house just classes... college campuses have classes, gyms, dorms, etc." (Shaheer Rizvi's group). The theme of the residential curriculum — living on one's own and the resulting social life and emphasis on individual personality development — seemed prevalent.

- 4 **Curricular differences:** "High school curricula more standardized, colleges have a lot more freedom (variability across colleges and also across departments)" (Shaheer Rizvi's group). Also: "For the most part, high school is for breadth and college for depth." (Alice Fang's group). However, Matt Williams noted: "Having thought a bit about the curricular differences between high school and college, I've come to the realization that, I think, a lot of those differences can, in fact, be deconstructed. In some ways, I'm beginning to think that the biggest curricular differences are functions, not of content and structure per say, but of student emotional, social, and knowledge development. So, for me, the questions that illuminate the differences are — is there college course content "inappropriate" for high school students? Why and how? And, is such a distinction even relevant for a 21st century age in which ALL content is probably accessible to millions of "children" right now?"
- 5 **Choice:** "There is also more choice in college, and choice also in selecting which college. Who makes this choice? In the public high school system, the school you go to is mainly dependent on where you live; it is a combination of the parents' choice and the government that divides up zones. In a sense though, it is still the parents' choice because they choose where to live and whether to send the child to a private school based on economics. As for college — does the government make people go to college? Our group answered with "not explicitly," but undergrad degrees are needed for jobs, especially in US, and especially in Silicon Valley (as compared to other countries like India). There is also the cultural belief that you can't go to college without high school. It is seen as mandatory, even though there are many other possibilities." (Alice Fang's group)
- 6 **Motivation/accountability:** "High school student expected to need to be cajoled/forced to study, college student expected to have intrinsic motivation" (Shaheer Rizvi's group). Also: "Our group largely agreed that if students do not learn in high school, it is considered the teacher's fault. If students do not learn in college, it is most often considered the student's fault and not the professor's fault. Why does this distinction exist in terms of accountability?" (Shelley Jacobson). Meaghan Stern noted the potentially negative consequences of this dichotomy: "As a former K-12 teacher, I can testify to the necessity of cajoling/extrinsically motivating students to do well. College itself is frequently a motivator for many. However, this leads me to think about what happens to those students who were previously externally motivated by teachers or parents once they get to college. Particularly for low income/minority students, extrinsic

motivation is sometimes a huge factor in their presence in college. Once the motivating factor or person is no longer present, students tend to struggle academically and personally because they haven't built the skills or self-esteem necessary to succeed."

- 7 **Time:** "High school time is limited to certain hours of the day, college time permeates all day & night." (Shaheer Rizvi's group). Class time drastically decreases in college (16 credit hours), whereas a full time high school day could run 35 hours per week or more.
- 8 **Consequences of social deviancy:** "An anecdotal example is that a friend of mine was an adjunct professor last year at an area college. He was teaching intro to communication, and a student became agitated and threw a chair in the room. My friend ended the class immediately, and ultimately connected the student to psychological services to get support that was needed. On the other hand, there are any number of similar instances of acting out in high schools where the immediate response is disciplinary instead — and, for practical reasons, it often has to be. There's potential for high schools to serve youth better, but I don't think that collapsing high school and college is the answer — instead, I'd advocate even more specialization at the high school level so that high school (instruction, educational curriculum, and social support) and college are highly distinct. My goal is not to idealize the college setting — certainly, there are plenty of colleges where throwing a chair would have led to immediate expulsion with no further conversation. But the consequences of social deviancy at the high school level and college level seem decidedly different to me."

However, our class discussed how these differences have already begun to fall apart:

- **Artificial Divide:** One group noted that: "there are clear signs that point to the artificiality of the divide between college and high school. E.g. students are navigating both at the same time, such as college students taking remedial courses, high school students doing AP/college classes." (Shaheer Rizvi's group)

To conclude, a number of attendees raised concern over the potential bias of the group:

- **Bias:** Participants thought that those attending and participating in Education's Digital Future might be fairly biased when it comes to characterizing "college" and even "school." This is not to say that we must search for an objective assessment, but rather this should, at least, be acknowledged. Several students also noted the relative bias of our sample as students of Stanford, a highly atypical university compared to the massive numbers of 2-year and community colleges.
- **Narrow Picture:** "Our perspectives as Stanford students are hopelessly compromised by our relative successes in high school and college, which led us each to being here in the first place. Even in retrospect, it is impossible for me to disentangle my assumptions about the purpose of my high school experience for myself and the reality of what that experience could be for other students. I have worked with students for whom high

school did not serve much of a social or academic purpose, for example, and for whom college was an unthinkable place to end up. It's too easy to paint a narrow and elitist view of the high school and college experience, when for many students that is not the reality at all" (Paul Franz).

Section II.

Two Theories for Educational Organization

Prof. Mitchell Stevens shared two theories, the "functionalist" and "conflict" perspectives, of educational organization that give different explanations for why high schools and colleges have come to be the way they are.

Functionalist Perspective:

The first type characterized education systems as a process of top-down, intentional, "functionalist" method of producing of human capital. By this view, high school and college are separated to deliberately maximize human capital production by, for example, customizing instruction for different ages, offering a range of possible job training methods, and efficiently using government education funding. (EDF class summary)

Conflict Perspective:

A second view instead characterized educational systems as more of a bottom-up emergent result of conflict among public and private stakeholders jockeying for wealth and power. By this view, the divide between high school and college may be (among other things) more of a historical artifact of a "credentialing arms race" between families attempting to out-qualify their neighbors for jobs. (EDF class summary)

A Missing Component: Intellectual Enrichment

It is worth considering whether these two narratives take into account personal development and enrichment, which is usually part of the "pitch" of any self-respecting university. Several students, including Betsy and Galina, noted that (at the risk of sounding naive) these theories didn't match the more conventional narratives of going to school for intellectual enrichment. Roy commented that the beliefs of educational suppliers and demanders may be different — for example, are the learners in a functionalist theory aware that they are competing in a market for human capital, or do they view it as a civic duty or personal enrichment?

Section III.

The Consequences and Limits of this Divide

Conceptualization of “the student”: Accountability

The consequences and limits of distinguishing between high school and college primarily take the shape of how we conceptualize “the student.” As discussed in EDF on Jan. 15, “high schools and colleges hold different people accountable for the academic success or failure of a student — high schools tend to look to parents, teachers, and staff as “leaving students behind,” while colleges more frequently hold students to be the directors of their own learning.”¹

Under the current bifurcation, a student becomes an adult at age 18 — often starting their year of being 18 as a “child” i.e. a high school senior, and ending the same calendar year as a more autonomous “adult” college freshman. As discussed in EDF, data mined from online courses could provide insight into the ways in which such a crude binary neglects the under-18 students who have more agency than the current structure affords recognizing. One pair (Christie and Arik) noted, “poor performance in HS is the teacher's fault, [but] poor performance in college is the student's?”

Conceptualization of “school”: Space, Choice and Content

A separate consequence of the distinction between high school and college (which could change in an online context) is the tethering to a particular place, and the rules about who can attend what school. Public high school districts are largely determined by geographical proximity, whereas college attendance runs the gambit of in-state, out-of-state, private, local, community.

“I think that the area most likely to change would be “place.” A major part of the crisis of education has to do with location. Aside from the ease of tele-presence releasing us from the constraints of physical presence, the boon of digital presence can extend to children's social well being as well: for instance, a professor in Sociology did a recent ethnographic study in the Bay Area of pre-teen children who live alone in apartments so that they can attend a better school than where their families reside”

A core consequence of the current division between high school and college has to do with the “differentiated signal value of the credentials” of the respective institutions. Freedom of choosing classes in college versus having a prescribed curriculum in high school is also a consequence of the current division.

¹ (EDF summary, <http://edf.stanford.edu/course/jan-22-symbolic-deference-inherited-system-credit-and->

Finally, the issue of appropriateness is an alternative framework for the division of high school and college: a major consequence is that content can be “appropriately” tailored for the respective student bodies by keeping them separate.

“The questions that illuminate the differences are — is there college course content “inappropriate” for high school students? Why and how? And, is such a distinction even relevant for a 21st century age in which ALL content is probably accessible to millions of “children” right now?” (Matt Williams).

Conceptualization of Equity: Credentials, Resources and Democracy

First, the current college and high school boundary perpetuates an inequitable schooling system. Currently, a high school diploma opens fewer doors. However, alternative forms of high school and college could destabilize the current logic of a college diploma leading to improved job opportunities. Below, Meaghan Stern writes about

“Organizationally, a substantial change that we will begin to see has to do with access to both high school and college through online “alternative” forms of high school and “alternative” forms of college. Socially, politically, and culturally, this change will cause us to confront what we expect from schools: previously a source of “advantage” to the population who attended the physical school, education now becomes more accessible. What happens when everyone has access? How am I supposed to get the advantage in society that my parents and grandparents got by virtue of their education?

High school, seen as compulsory and necessary for a democratic society, will likely become a more fluid, participatory, and “choice oriented” structure. Alternatives to “real” school environments will become more accepted as viable educational opportunities. San Francisco’s Flex Academy is one current example: it markets itself as “the best of online education meets the best of traditional, onsite schooling.” Students independently work through online curriculums at cubicle-style workstations in the school building. Teachers monitor student progress, at times pulling small groups into a more traditional class-like setting where they are able to review key concepts or skills or address trends across the group. As a byproduct of its alternative practices, Flex Academy attracts students who were not otherwise successful in traditional learning environments. A product of this digitization is increased access to education.

Structurally, changing the organization of high schools using technology requires a more intense overhaul of what we consider “real school” than [a] college/university. Online post-secondary courses appeared long before secondary teachers considered using computers as a primary (or even supplementary) method of instruction and/or assessment. MOOCs, forums, and other online learning platforms are increasingly accepted as credentialing forms: it seems expected that post secondary schools will continue to digitize and expand online.” (Meaghan Stern)

Related, the small groups that met during class discussed the ways in which there is distinct “variance in resources and opportunities based on location of college or high school” (Courtney, Nancy, Cho, Becca, Rob, Amit, Greg, and Dan, Farah).

Finally, toppling the wall between high school and college may have a benefit of democratizing currently exclusionary structures:

“Online platforms serve to make the world seem smaller — people are more able to connect to places and people far away. This has the potential effect of democratizing an institution that was previously only open to a subset of the population that could a) find post-secondary opportunities: college counseling, school visits, scholarship opportunities, b) move to access the opportunity: commuting or relocating, and c) afford to finance the opportunity: tuition becomes negligible with online courses.

Web-based college admissions processes, virtual tours, scholarship and entrance applications, and courses serve to provide access to those who were previously unable to access the physical versions. Post secondary education will thus due to wider accessibility through online tools. The world of education tends to stick to its definition of “real school”: a room with a teacher, students, desks, assignments, grades. The definition of “school” and what constitutes a legitimate “education” come under fire when we confront these alternative methods of gaining a credential: if more people are accessing the advantages of education, in what way will we begin to re-create the advantage that post-secondary school previously provided to those who were able to physically access it?” (Meaghan Stern)

Section IV.

The Impact of Digital Media on the Boundary between High School and College

Liberating learning from the confines of formal institutions

This session of EDF also began a discussion about how digital media is changing the character of learning by liberating it from the confines of formal and physical institutions such as schools and colleges. Furthermore, as officially recognized ‘learning’ moves outside the realms of tightly controlled institutions, access to education potentially increases, allowing individuals not served by the traditional education industry to participate.

“Recent advancements in technology such as wide distribution of broadband connections, affordable tablets, nearly omnipresent smart phones, and free content for learning (Khan Academy, MOOCs, Gooru, YouTube, and Wikipedia) have changed the way we acquire human capital. No longer are schools the primary mechanism for producing human capital because in the digital age, there are pathways to learning skills and content that are not bounded by the formal institution (high school or college). In terms of place, learning from experts is no longer limited to elite settings; there are many

methods to access the philosophy and methodology of experts outside of college campuses.” (Molly Bullock)

Advantages of Digital Media

There is broad consensus that digital media provides many advantages over traditional method of teaching dominant pre-tech era. Digital media allows content customization, increases convenience, increases data analytics and makes education more affordable.

1 Customized content

“Traditionally, high schools and colleges follow a similar model for creating a course: The academic publishers create the textual content, and the local teacher organizes an itinerary of these texts and discusses their content during class. Although there are variants, this teacher-and-textbooks form is common in typical schools from grade 9 to grade 16. In the upcoming years, curricular content for high school and general college prerequisites will be increasingly gamified, MOOC-ified, or otherwise made into some interactive digital interface.” (Stephen Frey)

“Digital enables significantly more customization, modularity and one-to-one mapping of content delivery, skills development and certification. Computers are becoming more effective at measuring skills proficiency and development over time by using adaptive testing methods to identify specific tasks and sub-tasks that an individual student struggles with vs. a general approximation of skill. This is easiest to see with math and computer science related skills as computers can be the means of input and output. A computer can easily determine if, how and where computer code has broken down. Follow up questions / prompts to the student can zoom in on specific areas to see how/where the student’s thinking broke down.” (Tyler McNally)

2 Convenience

“The digital age is offering convenience above all else and admittedly a more interactive experience as the technology advances. So how does this relate to Mitchell’s framework and ensuing forum prompts? Convenience will play a greater role in impacting potential college students in comparison to high school students. The ability to complete college work for a low cost, around a work schedule, without excessive travel offers more to a college population (even that large portion in local city colleges) than to the high school population.” (Michael McLaughlin)

3 Data Analytics

“What makes digital education and instruction interesting is not the alternative structures it a prior supports, but rather the depth and detail and sheer amount of data that can be collected by modern technologies. The implications of Big Data and Learning Analytics

on the relationship between high school and college, however, are not entirely clear. It depends very much on how those analytics are implemented, interpreted, and designed into learning systems.” (Molly Bullock)

4 Affordability

“Free, video-based instruction is growing in popularity as a supplement to traditional educational resources – I can watch a Khan Academy series on statistics as a way to prepare for a statistics exam in high school or college. And its also occurring as a replacement – students of all ages from around the world who could not afford (in time or money) to attend courses delivered by eminent professors (or anyone else) can do so anytime, anywhere via the internet.” (Tyler McNally)

5 Skill-based hiring

Credentialing and accreditation are crucial features of our current educational system. Both the high school diploma and the college degree are widely recognized standards by which graduates are sorted into jobs and other social positions, and by which we as a society have certified that certain skills and knowledge are reproduced over time[1]. Digital media has the potential to change the power dynamics of the traditional education institutions as employers use skills assessment rather than credentials for job qualification.

“Educational institutions have build power by stratifying the education and restricting access. Digital Media would change this by lowering the cost of education and increasing access. As more and more people start enrolling for online education and companies start hiring based on skill rather than accredited degrees a shift in the power dynamics would ensure. Market forces would dictate whether this threat is credible or not as the outcome would largely depend on openness to hiring based on skills and accreditation/verification of the skills.” (Manmeet Mavi)

“Human capital can be earned online if and when employers begin to more widely recognize alternative paths and perhaps begin applying internal metrics rather than traditional credential systems in determining best-fit employees. Regarding content, those working outside the traditional system can work outside the traditional script. If the demand for certain skills and content shifts to a specialized collection set forth by the employer, traditional requirements (as set forth by the college accreditation bureau) will become less important.” (Molly Bullock)

Blurring of high school and college boundary

With increasing access to education the boundary between the high schools and colleges is blurring. This can be primarily attributed to the competitive nature of admission process and the value we still accord to accreditation by educational institutions.

“As MIT, Harvard, Stanford, Coursera, etc. rush to put up online content, one can, I think, easily imagine this setting off an admissions arm race among prep schools and students aiming at top colleges. After all, what better way to demonstrate whether or not you'll succeed at a particular college than to do well in a course offered by the same college? So, do college guidance counselors start advocating for free periods in which students can take courses from these universities? Would those classes be given a special (honors, etc) place on the high school transcript? How would college admissions officers interpret a transcript with four or so courses from their university? How might high school faculty perceive this shift and its driving factors?” (Matt Williams)

“Grades 10-14 will become more blurred as high school and college classes use not only the same textbook (as some AP classes do), but the same MOOC / digital learning program / online lecturer. For many first-year college courses, the role of content delivery could pass from physically-present lecturers to online rockstar professors and HCI-knowledgeable curriculum designers.” (Stephen Frey)

Regressive Pedagogy

In spite of great benefits of digital media, we discussed how, surprisingly, not much has changed in terms of pedagogy at high schools and colleges. In fact, pedagogy can often seem regressive despite the progressive technology.

“In the short time that MOOCs have been the rage, it is notable that there has been no meaningful pedagogical revolution. This is because pedagogy is no great mystery: apprenticeship works for training people to do things, communities of learners are usually more effective than individuals at teaching complex and multi-stage tasks, and lectures are decent — if not always great — at helping people remember information and regurgitate it. That MOOCs operate primarily on a lecture model now is not surprising, nor will it be surprising when someone finds a way to do more complex pedagogical work online and at scale. I doubt that a new pedagogical model will be created.” (Paul Franz)

Digital Education: compete or support formal education systems?

Though digital media is reducing the divide between schools and colleges, we do not expect it to compete with the formal education system. It would, however, complement the traditional education system and improve efficiency. It might be formalized and integrated with the existing education system depending on how the market forces play out.

“My personal opinion is that there will, for a time, be a proliferation of new formal educational systems and platforms, many of which will not be certified by any governmental body (though they may be by employers, which also counts). In the spirit of disruption, the best and most interesting of these will not compete directly with school, but will rather do things that schools don't do. In fact, we already are seeing this: Khan, Coursera, Udacity... Over time, they may even supplant existing structures (or integrate with them). But the key to their disruption is in not directly competing with school, yes, but also and more importantly in doing data better.” (Paul Franz)

“In lieu of a big name like "Stanford," online instruction, and public education generally, will continue to be heavily scripted and assessed, and so I think that we will see the least disruption via digital media in regards to governance and content. In the short term, rather than displacing K12 curriculum generally, it's much more likely that we will see digital media displacing target non-core areas, such as credit-recovery, AP, world languages, as cost-saving measures in schools.” (Jason Sellers)

Conclusion

In this paper we present multiple ways of considering the bound separating high school and college. First, we discussed similarities and differences between the domains, such as both relying on an instructor (similarity), but truancy and limitations of the physical school structure being greater issues in the high school setting (difference). However, the class and paper note the false dichotomy of these distinctions, as evidenced by high school students taking AP courses and college students taking remedial courses. Second, the paper reviewed various theories governing this divide. In this section, we looked at the functionalist and conflict theories of education presented by Professor Mitchell, and added the point that there is an intellectual basis for education which might be overlooked by these two categories.

Third, we discussed the consequences and limits of this high-school versus college distinction. Points raised here include whether 18 is a logical age or marker at which to deem someone autonomous and accountable to themselves, or whether that is an invented notion. We also considered the role of physical space for high school (i.e., why is high school place-based, but college is traditionally further afield?) and questioned whether it would be possible to diminish the distance between the two realms through virtual college tours or location-agnostic schooling. Finally, we reviewed the ways digital media might enable more flexible organization of school. Here we considered five main areas where technology could bolster learning, including (1) customized content, (2) convenience, (3) data analytics, (4) affordability and (5) skill-based hiring. Finally, we discussed whether digital education would support or replace the current institutions.

Some of these centuries-old distinctions will take time to dissolve even as technologies and teaching models emerge that place into question their very existence. Moreover, broader

societal forces in the US, including the age of 18 indicating financial and housing independence for some, military service, and general adult autonomy, may act to keep current high-school and college barriers in place. However, crippling costs of higher education and over-burdened high-schools might force the current model to change despite this resistance.

1 <http://edf.stanford.edu>