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All questions are from the course syllabus (Blue Marble University, 2018).

The terms college and university are used interchangeably in this paper except for when they are part of a name or title.

Internet Research

"1. Internet Research (Weighted 75%): Regarding some new ideas in education (not necessarily alternative but can be), please conduct internet research and present your findings about the current state of:

Badges and what they are.

Proficiency standards and testing. Why is proficiency the new buzz word.

Seat time: What is it, what does the Department of Education currently say about it, and what colleges are doing about it.

General Education requirements. Closely linked to seat time, please state what these are, what is the criticism, and name one or more colleges that have abolished general education requirements.

Age of entry into college. What is the current state of affairs concerning admitting students to college prior to completing high school, and specifically any trends or data you found concerning the admission of 16-year-old students to college. For this question, please also call over to your local community college and report on whether they will consider a 16-year-old applicant for credit courses. (You may find that they will accept a student for courses but not for a "program", which means the student can transfer the courses down the road to the program completion)." (Blue Marble University, 2018)

Badges

Badges are collectable rewards that students can receive for completing work. Some educational platforms have badges that can be preset to award when landmarks are successfully completes. For instance, CourseSites (Blackboard, 2018) allows teachers to set parameters such as completing specific assignments or obtaining required grades as set by the instructor. One example of automatic badges would be to set up CourseSites to award a badge when the student earns 80% on a quiz at the end of each segment of study or unit. Another approach, used by PowerSchool Learning (PowerSchool, 2018), is to include a function where by instructors award badges themselves by interacting with student accounts. In PowerSchool, teachers can award a badge anywhere they see the student's avatar such as in the grade book or a discussion forum. Both approaches to awarding badges let students know they have succeeded and give them an opportunity to collect these rewards.

Badges can motivate online learners and can be used to enable students to "track progress within a course" (Guerra-Martinez, 2017). Universities are incorporating digital badges into their courses with much success. The University of California, Davis was one of thirty recipients of the 30 winners of a MacArthur Foundation Digital Media & Learning Competition grant in part because of the University's innovative use of digital badges (Raths, 2013). Many organizations provide students with "Open Badges" that contain metadata including the name of the student, the name of the institution, and what the student accomplished to earn the badge (OpenBadges.org, 2016). Students can display these badges online in social media and other platforms that accept them to aid the students in sharing their accomplishments. The metadata can be reviewed to determine the badges' legitimacy and if they represent skills and knowledge that would be helpful for specific circumstances. These examples demonstrate that badges can be

used by students to both track their own progress and to indicate their accomplishments to a wider audience.

Proficiency Standards and Testing

Andrew Ho (as reported by Leah Shafer, 2016), of the Harvard Graduate School of Education, makes several noteworthy statements about proficiency and testing. High performing and low performing schools will show little movement when schools and states use the standard bell curve to determine proficiency. Students in low performing schools may actually be achieving more than in the previous year, but the great numbers of students that are below proficiency will only slightly decrease due to the nature of the bell curve. In schools where large numbers of students are already above proficiency, it is impossible to see great improvement because there are not large numbers low-performing students at that side of the bell. Shafer also mentions that the proficiency marker could be anywhere along the curve making comparisons between states ineffective. Below are sample bell curves from the article that demonstrate how the placement of proficiency marker can affect the numbers of proficient students.



Ho concludes that tests are only helpful when educators, students, and parents can use the exams to increase achievement. Tests "should be faster in terms of both time to complete them and time to receive scores, more curriculum-relevant, and more teacher, student, and parent-friendly," (Shafer, 2016).

Seat Time

The United States Department of Education posted several innovations under Secretary of Education Arne Duncan that continue to remain on the department's website (U.S. Department of Education, no date b). An article linked from that website states that achieving subject mastery is more important than seat time. "By enabling students to master skills at their own pace, competency-based learning systems help to save both time and money," (U.S. Department of Education, no date a). Choosing mastery of content over seat-time appears to have both educational and financial benefits for our schools. The Student Financial Aid office of the U. S. Department of Education sent a letter to colleges stating that competency-based programs could apply to use competencies instead of credit hours for Student Financial Aid purposes (U. S. Department of Education, 2016). College accreditation is a requirement of Student Financial Aid. Some accreditors have begun to look at accrediting programs and institutions that are based on competencies instead of seat time according to J. S. Eaton (2016). The current administration has announced plans to further develop and amend the accreditation rules (McKenzie, 2018). It is still to be determined what role, if any, seat time innovations will play in new accreditation laws and guidelines.

The Organisation for Economic Co-operation and Development (OECD) published a study comparing education in a variety of countries. This report included a section comparing educational seat time in participating countries (OECD, 2015, pp. 401 - 415). Annie Holmquist reviewed the OECD study and discovered that increased seat time does not always produce increased math scores. According to Holmquist, the seventeen countries ahead of the United States in the Programme for International Student Assessment (PISA) mathematics test require

less seat-time than the in the United States. The two graphs below are from Holmquist's article.

and lower secondary education, in years	7	Primary	Low	ver secondar	У			
Hungary	8 =							
Latvia	9 =			_				
Poland	9 =		_	And other				
Turkey	8		_					
Slovenia	9	_						
Finland ¹	9 =		_	. Rowsen				
Korea	9			Real Property lies				
Austria	8 =		_					
Estonia	9		_					
ussian Federation	9 =		-					
Sweden ¹	9				-			
Slovak Republic	9		-			-		
Belgium (Fl.)	8 =							
Czech Republic	9			_				
Belgium (Fr.)	8 =				_	_		
Greece	9 =				_			
Japan	9				-			
Germany ^{2,3}	9		_					
Italy	8							
Portugal	9		_				() (
OECD average	9 =				-		1	
Iceland	10		_		_	-		
Switzerland	9						-	
Norway	10							
Luxembourg	9							
France	9 =		_		_			
Canada	9						-	
Ireland ⁴	9 =		-					
Chile ²	8							
Netherlands ⁵	9 =		_					
United States ⁶	9		_				-	
Mexico	9		-				-	
Israel	9						_	
Spain	10	_						
Colombia	9 =				_			
Australia	10		_			-	-	
Denmark	10							

Chart D1.1. Compulsory instruction time in general education (2015)

In primary and lower secondary education

Total number of compulsory instruction hours



PISA Math Score - 2012

Although these graphs find no correlation between seat time and mathematics scores on an international scale, it is impossible to infer from this snapshot which educational practices lead to increased mathematics scores.

General Education Requirements

General education requirements are requirements in subject areas outside the student's declared major in many colleges and Universities. The State University of New York (SUNY) offers this explanation: "The SUNY General Education Requirement (SUNY-GER) enables students to acquire knowledge and skills that are useful and important for all educated persons, regardless of their jobs or professions," (SUNY Board of Trustees Resolution, January 2010, as cited in State University of New York, 2018). Yale University provides this description of the coursed needed to fulfill its general academic requirement: "two course credits in the humanities and arts, two course credits in the sciences, and two course credits in the social sciences. ... two course credits in quantitative reasoning, two course credits in writing, and courses to further their

foreign language proficiency," (Yale University, 2018). Colleges and universities with general education requirements believe that those requirements teach students about the world around them and provide them with the skills that they will need to become successful adults.

Not all colleges have general education requirements. For instance, Amherst College believes that students will be more "inquisitive" and "fully engaged" when they choose their own courses through their "Open Curriculum" (Amherst College, no date). Amherst College further states that students can graduate on time with a double major. Double majors often require extra time or very heavy course loads each term at colleges with rigid general education requirements. Brown University has also eliminated general education requirements in favor of an open curriculum (Brown University, 2018). Although the "New Curriculum" did not begin until 1969 (Brown University, no date) after two undergraduates (Elliot Maxwell and Ira Magaziner) published a report on Brown's education, the idea can be traced back to 1850 when Francis Wayland, Brown University's fourth president, stated that students should "study what he chose, all that he chose, and nothing but what he chose," (as cited in Brown University, 2018). Amherst College and Brown University are two examples of colleges and universities that believe that students are more vested in their education when they have more choice in the classes that they take.

My perspective is that whether or not a student attends a university with a general education requirement depends on that student's goals for his or her college education. If a student enters college without a clear major or employment objective, then attending a university with a strong general education requirement may help him or her to determine his or her strengths and interests. Some students may also want to make sure that they are well grounded in an educational foundation as they take their place in the world of adult responsibilities. There are

also many students who want the extra time to focus on their majors and career goals or to pursue subjects that they are already interested outside of their majors. These students would benefit from the additional flexibility that universities without general education requirements offer them. Some students have no choice; they go where the tuition is free or low-cost or to a college that is close to where they live and/or work. I think that it would be nice if all students could choose the type of education that meets their personal needs and career goals.

Age of Entry into College

The local public university system, City University of New York (CUNY), does not have a minimum age, as long as the student has graduated from high school. Several of the colleges within CUNY have placed their non-discrimination policies online; two of these statements are included here. "The Graduate Center is an Equal Opportunity and Affirmative Action Institution and does not discriminate on the basis of race, color, national or ethnic origin, religion, age ..." (The Graduate Center, 2018). "It is the policy of The City University of New York and the constituent colleges and units of The University to recruit, employ, retain, promote, and provide benefits to employees and to admit and provide services for students without regard to race, color, creed, national origin, ethnicity, ancestry, religion, age ..." (The City University of New York, 2010). I received verification that there is no age requirement from the admissions office of the Borough of Manhattan Community College and was told that as long as a student has a high school diploma (or equivalency) there is no minimum age for admissions. The prohibition against age discrimination also includes not discriminating against students who are older than traditional college students. Any student, regardless of his or her age, will be accepted into any CUNY college or university for which he or she otherwise qualifies.

Increasing the Technological Infrastructure in Education

"2. After reviewing the Leadership Management materials above in Part A, please select a topic and write an essay concerning some managment (*sic*) or leadership topic that appeals to you and which may be pertinent to your employment. This is an open question with no particular goal other than for you to complete an essay within this general topic. Your work may be referenced, but it need not be, if you just wish to discuss issues relating to the management of learning where you are, or what initiatives as a leader undertaken, whether successful or not. (Do not write a book, this is an essay)." (Blue Marble University, 2018).

I read the course materials from the syllabus (Blue Marble University, 2018) a second time and chose Future Ready Schools: Building Technology Infrastructure for Learning (U.S. Department of Education, 2014) for this essay. The United States Department of Education (USDOE) has placed high-speed internet connectivity as a top goal for American schools. One aspect of connectivity discussed in the USDOE report is the infrastructure needed to get highspeed internet connectivity into each school. This is paired with the necessity of putting highspeed Internet throughout each school building. It is not enough to bring the internet into a school if it only goes to offices and computer labs (p. 7). The New York City Department of Education (NYCDOE) is constantly working on increasing the speed and bandwidth of the internet throughout each school building. As video conferencing and multi-media educational projects increase, the speed of the internet and the number of computers that can be online at the same time must also increase. In addition, educational websites themselves have many more multimedia and interactive activities than they had ten years ago. The NYCDOE Chancellor and Superintendents all work together with the state and federal governments and other funding sources to keep our internet capability as quick and powerful as money and available

technologies will allow. On the school level, our principal does he very best to make sure that there is at least one computer in each classroom that the students and teacher can use to access educational content via the internet and several older computers that still work, *albeit* more slowly. I also write grants for additional computers, including those in the computer lab. While it is true that there the internet connection still sometimes fails, everyone from teacher-leaders through the Chancellor are doing their best to reach the goals discussed in the 2014 report.

The report also mentions the need for "high-quality professional development so teachers enter classrooms ready to use the new tools to support personalized learning for students (p. 9). I am fortunate to be working for a school district that offers workshops for teachers and other school staff to assist us in using technology to help our students. The primary goal is always what we want the students to learn (and sometimes what they want to learn), then technology is integrated as a tool to help teachers and students reach those goals. The biggest problem is that there is never enough time and opportunity to learn to effectively use all of the available technologies. For instance, a teacher in my school was just given a small device to assist her students with intellectual and physical disabilities to use the computer. The directions were too technical for her to understand, so I helped her during a couple of my preparation periods instead of writing my lesson plans. This meant that I stayed late to get my own work done (I hate getting behind!). It would be great if we had more time to work with each other and still keep up with our individual work. The district has three technology coaches who are available to visit schools, but with the large number of schools that need assistance coaches are not always available when a school or teacher needs one. When they are available, they always go above and beyond to assist with as many issues as possible during their visits. My district, District 75, clearly sees that it is just as important to train school staff as it is to procure educational technologies. The

assistance that I have received from district staff and leaders helps me to help my students.

The USDOE report also emphasizes the need to establish repair and lost device procedures (p. 51, 63-65). When the budget allows, my school hires a technical intern from the City University of New York (CUNY) to upgrade and maintain our computers and related technical devices (i.e. interactive white boards and tablets). The school also purchases a maintenance agreement through a third party to repair computers when they break down beyond the intern's ability to fix them. For instance, if a four-year-old computer needs a new hard drive, the repair contract will cover that hard drive even if the computer is no longer under warranty. Many repairs are covered until the computer reaches six-years-old because my principal (and the two before him) believe that it is worth a little bit of money upfront to keep our computers lasting a full six years. This way, we spend less money on computer replacement and are able to have more computers in each classroom. In many rooms, the newest computer is connected to an interactive white board while the older computers are in the back of the room for individual and small-group work. These rooms would only have the one new computer if it were not for our school's principal's foresight. All of our computers are monitored by the NYCDOE (often through a third party), so it is, at least in theory, easy to determine if a device is not where it belongs. These procedures, established by city and district leaders and implemented by educational leaders, all help to keep the instructional information super-highway operational.

Another aspect of the USDOE report is that some school districts are electing to send devices home with students (p. 52). Teachers may forget that many students do not have access to computers at home when they set homework expectations. Some school districts also help low-income students obtain free or reduced-price access to the internet in their homes or in public areas such as schoolyards. My students are able to obtain devices through their

Individualized Educational Plans (IEPs) if they have the educational and/or communication need of the device and an evaluator determines that they have the ability to use the device. IEP-driven devices can be anything from the simplest communication device for a student who is non-verbal and just learning to use alternative communication devices to a fully-loaded laptop for a student who needs consistent access to a computer to keep up with his or her non-disabled peers and succeed in a rigorous academic environment. Sometimes, a specialized tablet is the best educational device to bridge the school and home environments. I had a student this summer with physical, health, and mild sensory disabilities who has been in an inclusion program for several years. He can speak fine but reading written text and using a laptop are difficult for him. He was provided with an iPad and reads his books with headphones. He is still responsible for answering higher order thinking skills questions, but he does it a little differently from his classmates. He is proud of his device and the work that he accomplishes with it. In all cases, parents must sign for devices and be willing to take on the responsibility for the devices being returned on time and in workable condition. There is some repair money available, but it rarely covers drops and spills. Clearly, the educational leaders in my state, city, district, and school all work to ensure that students who need devices that travel home and are able to use those devices are able to obtain them. The process is more complicated in general education, but some schools have created device-lending libraries or other systems to get devices into the hand of students who cannot afford them.

While I wish that my school had more staff development opportunities (we are allowed out once a semester for a workshop), more modern computers, a faster internet that more easily handles simultaneous multiple computerized devices, more interactive white boards, and more assistive technology, I feel that we are well on our way toward meeting the objectives laid out in *Future Ready Schools: Building Technology Infrastructure for Learning* (U.S. Department of Education, 2014). As I see it, the biggest hurdle is money and the next obstacle is the everchanging nature of educational technology. As soon as the NYCDOE finishes upgrading the internet in all of the schools, a new upgrade is necessary because more computers are online each year and the educational websites require more speed to run effectively. I see no end to this cycle and am proud to work for the New York City public school system where everyone tries their very best to give public school students and teachers the tools that they need for educational success.

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