An Equitable Education in the Digital Age: Providing Internet Access to Students of Poverty

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Abstract

Students of poverty are ready and eager to learn, however, due to economic hardship, they often fall short compared to their peers who come from a higher socioeconomic status. With the intention of increasing students' digital literacy and to prepare them to be globalized citizens in the 21st century, schools are turning to 1:1 mobile initiatives. Giving each student a device (whether a laptop or tablet), schools set expectations for students to use and manipulate digital technology to enhance their learning experience. However, students without internet connections are unable to utilize these devices with the same efficacy as their more economically advantaged peers. When the school day ends, so does their opportunity to access internet capabilities. Schools inadvertently create a digital divide, deepening the already sizable chasm that is the achievement gap between students from higher and lower socio-economic statuses. This paper suggests local education agencies "extend" the school day by providing universal internet access to students who are eligible to receive free or reduced lunch through United States Department of Agriculture (USDA) guidelines.

Keywords: digital divide, digital literacy, education technology, economically disadvantaged.

Fifteen years into the 21st century and a theme are emerging regarding education in the era: technology integration. Classrooms are flipped, smart boards turn lectures into interactive learning sessions, collaboration between classes using wikis prepare students for tests, teachers communicate with their students long after the bell rings, and snow days now include virtual classrooms. In the school day 40% of teachers report students use computers "often" during instructional time, while another 29% indicate they are used "sometimes" (United States Department of Education, 2010). Outside of the classroom, students are expected to complete assignments, research content, and create projects using the technology. The presence of education technology both in and out of the classroom can have a strong and positive impact on student engagement. Students in today's PK-12 classrooms have never lived in a world without the internet. According to Wanago (2013), "technology offers educators an effective student engagement tool that can help students see relevance between what they are learning and the real world . . . as well as be critical thinkers and effective communicators" (p. 18).

At home, students can use educational technology to supplement their learning with virtual classrooms. They can communicate with teachers to answer questions, watch tutorial videos, and interact with material and experiment with hands on problem solving tasks. Yilmaz (2015) gathered feedback from students using a virtual classroom to learn physics. According to the study a, "live virtual classroom is highly desirable and . . . results indicate that the students were generally positively affected by the live virtual classroom at distance education" (p. 113). The manipulation of educational technology is implied in the 21st century classroom. It is, after all, the mission of schools in the United States to prepare students for an increasingly global and computerized society. However, in pushing students forward into this world of technology, schools may inadvertently be pulling half of its students back. The number of children living in poverty has reached 51%, and a number of these children begin their education academically behind fellow students from higher socio-economic statuses (Layton, 2015). Students in schools deemed "high minority, high poverty" are less likely to graduate from high school; even in the 21st century, academic achievement continues to be tied to income (Reddick, Welton, Alsandor, Denyszyn, & Spencer Platt, 2011). Additionally, students from lower income families are less likely to have access to internet within their homes than their more affluent peers (Cohron, 2015).

There is a positive correlation between academic achievement and ready access to internet (Araque, Maiden, Bravo, Estrada, Evans, Hubchik, Kirby, & Reddy, 2013; Reardon, 2013). When students are unable to access internet technology they do not have the same educational opportunities as their peers who are able to connect with the internet. This disadvantage is further compounded in school districts where students are provided devices such as laptops or tablets with the expectation that students be able to access the internet in order to remain connected. While attempting to provide each student 21st century educational technology, schools are unintentionally furthering the achievement gap for students who do not have internet access in their homes. To complete online assignments or communicate with teachers after hour's students must take their devices to a friend's house, fast food restaurants, a library, or another place that allows internet access, leaving students at a greater disadvantage for academic success. This paper will begin with a literature review which outlines three ideas that support the thesis- the digital divide, importance of educational technology, and inequity created by lack of access. The purpose of this research, supported by reviewed literature, is to present an argument for providing free internet access to students who qualify for free and reduced lunch in order to provide an equal opportunity education for all. The discussion of the paper's purpose will entail a description of financial struggles of those who receive free and reduced lunch, a delineation of reasons internet access should be provided to students who otherwise could not afford connection, and provide examples of connection initiatives that have been attempted previously.

1. Literature Review

In researching the idea of providing free internet access to students receiving free and reduced lunches, three ideas emerged supporting necessity of the argument being made. First, the concept of the digital divide must be discussed and the negative impact this divide can have on people who are unable to fully access technology. Next, the idea that access to educational technology is vitally important to students and inaccessibility of technology can negatively impact their academic achievement. Finally, the idea that a lack of access in home creates an inequity both in a child's education and in post-secondary opportunities as well. An analysis of these topics is pertinent not only in understanding the need to provide internet access to students qualifying for free and reduced lunch, but also in understanding how limited access to internet service is actually creating an inequity their education compared to their peers from a higher socio-economic status.

1.1 Digital Divide

The first element necessary to understanding the argument of the paper is the concept of the digital divide. A simple definition is the theoretical gap between those who can access digital technologies and those who cannot; it is one way to describe the "haves" and "have nots" in terms of computers and internet access. Though 70% of Americans have a broadband internet connection in their homes, this leaves a significant population of people who do not (Cohron, 2015). Even within that percentage with access, how and to what extent the internet connection is used has created a chasm between digital haves and have nots. Van Deursen and van Dijk (2015) identified various types of internet accesses and how th the digital divides created within the accesses. Each internet access and associated digital divide creates an inequity for students. The accesses can interrelate creating multifaceted digital divides, producing a complex problem for students who are expected to employ educational technology in assignments, projects, assessments, and standards based learning tasks. The most recognizable internet access types identified in van Deursen and van Dijk's (2015) study is the next addressed: material. This is not only the physical access to the internet via the use of a device such as computers, tablets, and smart phones, but also how the internet is accessed using said devices. Material internet access describes the ability to access internet. The digital divide is this category is most easily recognized as cost. If a user cannot afford to pay for internet, they are unable to access it. However, this digital divide also includes speed and reliability. In some geographic areas, a dependable connection is not yet available to residents, creating a digital divide between those who can access *good* internet and those who cannot.

Additionally, material access affects how internet connection is obtained. The capabilities of personal computers are greater than those of mobile devices. Napoli and Obar (2014) compares the technologies and how the difference creates a digital divide, explaining: While both categories of devices provide gateways to the Internet . . . the mechanisms by which a user engages with the Internet are fundamentally different in a number of significant ways—ways that in many cases have a direct bearing on whether the two platforms represent equivalent opportunities for users to take full advantage of the opportunities for social, political, and economic development that the Internet provides (p. 325).

Thus, even with the ability to connect using a device and an internet connection, a digital divide may still exist due to an inherent ability to access the same material. Those who are accessing the internet exclusively via mobile devices are more likely to be from a lower socio-economic status (Pearce & Rice, 2013). This this digital divide that strongly affects students attempting to access the internet for their education and deepening an already sizable achievement gap based on income. Van Deursen and van Dijk (2015) also discuss internet skills access and the associated digital divide. This is the ability to use and apply the internet effectively. It is not enough for students to have the capabilities to connect with internet applications, but they must also be able to navigate in order to complete tasks, activities, and assignments. In order to achieve the learning targets, students need skills beyond simple operational abilities. They must be able to be able to manipulate the technology to achieve academic goals. Research conducted by Kontos, Bennett, and Viswanath (2007) further supports the idea that, "as the gap narrows over time and more people use the Internet, a shift in research needs to occur to explore how one might improve Internet use . . . particularly important in the case of novice users who may not have the technical skills, experience, or social connections" (p. 3).

The digital divide in this case is created when students are provided access to materials such as devices and internet, but lack the knowledge of how to use them appropriately. Without appropriate training, teachers may unwittingly exacerbate this digital divide by assuming all students have a similar skills set when some lack of exposure to these complex skills beyond their experiences in the classroom. The various digital divides are neither singular nor linear. They can affect a student at the simultaneously and consequentially, as a result of one another. Even when one digital divide is relieved, a student can still be affected by the others. For instance, a student who has no access to internet connection (material access) is provided a tablet by a school and is expected to create a collage using an app. The student has no previous experience with the device or the app (internet skills access) and does not want to complete the project due to the anxiety associated with inexperience and educational expectations (motivational access). This fictional scenario is a common occurrence for a population of students who do not have internet access at home. The example further illustrates both the damaging effects of the digital divide and the need to remedy the situation by bridging the digital divides with training and internet access.

1.2 Impact of Educational Technology

Technology allows learners to experience content and lessons in an alternative manner that is appealing and offers immediate feedback. It also provide opportunities for students to engage in lessons on the unwritten curriculum, an inexplicit set of skills learned while at school, such as abstract thought or social skills. Research by Gee (2008) and Wong et. al. (2015) further discusses the impact of educational technology in the lives of students. Eminent educational philosopher, John Dewey (1938) understood the importance of effective experience and practice in education, writing, ""Experience and education cannot be directly equated to each other. For some experiences are miseducative" (para. 11). While Dewey valued situational learning, he argued the experiences must be contributed to the growth of the learner. Educational technology similarly has the potential to be used simply for the sake of being used. Educators must use the technology as an opportunity for growth, rather than a method of passing time; when used correctly, the benefits are boundless. Gee, (2008) discussed the value of incorporating a gaming experience into learning. His writing outlines what is necessary of the experience to make it valuable and avoid the trap of what Dewey called "miseducative."According to Gee, instructors who effectively use educational technologies must incorporate four distinct elements in the lesson: 1) They must present a specific goal; 2) They must provide an opportunity for interpreting the experience; and 3) They must provide the student with feedback; and 4) They must allow students to incorporate social interactions into the educational experience.

First, Gee (2008) explained educational technologies must present a specific goal. Students connect the experience with an objective related to learning. For example, a child can easily journey on the virtual Oregon Trail, but if the teacher does not outline the purpose of the simulation as a means of empathy for the hardship experienced by the pioneers, the lesson is lost. Next, Gee discussed interpretation of learning experiences, stating, "Interpreting experience means thinking- in action and after action- about how our goals relate to our reasoning in the situation. It means, as well, extracting lessons learned and anticipating when and where those lessons might be useful" (p. 21).Interpreting requires students to consider the value of the lesson and how the lesson is a growth opportunity. For instance, students collaborating on a google doc must see the value of the social interaction and the writing assignment as a means to increase their written expression skills. Third, Gee (2008) argued the need for feedback from the learning experience. True even in traditional learning formats, students must know if their practice is correct.

Technology based learning offers easy and immediate feedback, allowing students to learn from mistakes and consider how to proceed to avoid the mistake later. Next, he described the need for application of these learning experiences in new but similar situations, and for repeating the process until the lesson is part of the generalized knowledge of the student. Finally, Gee explained the importance of incorporating social interactions into the educational experience. Students must share their knowledge and learn from what others have accomplished. Virtual learning affords students the opportunity to collaborate not only within their school community but also potentially with students on a global scale. When the five stipulations Gee outlined are met, educational technology opportunities offer the true learning experience Dewey discussed nearly a century ago. The requirements for quality game learning set forth by Gee (2008) can be applied to traditional learning, but are enhanced by digital learning opportunities. Students can manipulate and engage in content which was once one sided. According to Hague and Payton (2010), "Digital literacy facilitates processes of interaction and participation and allows students to become active rather than passive in interpersonal contexts . . . . Digital literacy supports this process of young people becoming active meaning makers" (p. 8).Yet, as important as educational technology is in developing opportunities for learning growth in the classroom, it offers more than a chance for students to study what is explicitly written in the curriculum and standards. As Gee (2008) argued, digital learning allows students growth opportunities in social-emotional skills and critical thinking. Digital technology allows abstract ideas to be practiced and mastered. While studying the benefits of video games such as *World of War craft* on learning, Gee stated, "players concentrate on the embodiment of experiences of play, problem solving, and socialization" (p. 29). While playing an enjoyable role playing game, students must learn to interact with other players within the game. They need to use correct maps, weapons, and other tools to complete a mission and solve problems that arise in the process.

Students can apply the skills acquired from this experience to real life situations. A student who increases self-advocacy after playing *Half-Life* can apply the skill to a classroom setting where they request help from a teacher. Gee (2008) referred to this as modeling and described the benefit that, "modeling allows specific aspects of experience to be interrogated and used for problem solving in ways that lead from concreteness to abstraction" (p. 30). Thus educational technology offers students experiences that augment learning not found in content related textbooks; these experiences are as necessary as the set academic curriculum to post-secondary success and personal growth. To further demonstrate the importance of providing students with opportunities to learn using educational technology, Wong, Ho, Chen, Gu, and Zeng (2015) studied how the digital divide affected children, including a lack of consistent access to internet connection and educational technology. The research found the digital divide between low income and non-low income families is getting smaller. However, after interviewing children from both low income and non-low income homes the authors discovered a disconcerting trend among those without internet access. It was reported that 18.3% of children in low income homes do not have internet connection in their homes versus 4.9% in non-low income homes. Their study brought to light noteworthy issues for students without access to internet in their homes. Wong et. al. (2015) reported:

Low income children without home Internet access showed significantly lower self-esteem scores than children with home Internet access, both in low-income and non low-income groups . . . no significant differences were observed between the latter two groups. Similar patterns were also revealed from the findings with interpersonal relationships. Low-income-children without home Internet access reported significantly lower scores in overall family relationship . . . . Overall peer relationship. (p. 68)

The study demonstrates the negative effects a lack of consistent access can have on the student as an individual. Coupled with Gee's finding, the study by Wong et. al. definitively substantiate the need to provide access to students for both academic and social-emotional growth.

1.3 Access and inequity

It is well documented that students from economically disadvantaged homes do not perform as well as their more advantaged peers. Students with a higher socioeconomic status have more consistent access to educational opportunities, including internet connection and technology devices. By the time, children begin school in kindergarten; students who have not consistently had access to digital technology already face inequity in their education (Reardon, 2013). However, the inequity is not contained to educational technology. Cohorn (2015) and Goldsborough (2000) point of the effect it has on the democratic process. Richard Civille, of the Center for Civic networking, stated, "Internet access is increasingly necessary to fully participate in the democratic process . . . .

Those connected have greater access to information and stronger voices in shaping public opinion and influencing government" (as cited in Goldsborough, 2000, p. 3). Cohorn believed the division of power is seen in the definition of the digital divide, stating that, "some individuals are more privileged in regards to the access and use of technology while others are not" (p. 78). The de-facto disenfranchisement of a group of citizens due to lack of resources is alarming. Without equal access to information, they may be overlooked by policy or initiatives which would assist them economically and in academic achievement.

2. Discussion

The unavailability of access to the internet and related digital technologies presents a serious problem for students who are economically disadvantaged. The digital divides hinders access for students who could benefit from educational technology. It creates an inequity for the students and their families. Students on the wrong side of the digital divide are unprepared to meet the rigorous academic challenges of 21st century learning. They cannot fully harness the power that educational technology provides for collaboration, improved critical thinking skills, and practicing content based academic tasks. In an effort to give all students equal access to digital learning; many schools are beginning 1:1 mobile initiatives in which students are given tablets or laptops. Armed with the knowledge that navigating digital technologies is a skill 21st century graduates will need, schools are taking the proverbial bull by the horns and giving *all* students devices on which they can use and manipulate digital technology for educational purposes. The devices are opening a world of interactive engagement in learning. Students can connect with classrooms around the world to solve math problems and learn how they are solved differently in other cultures. Students learning a foreign language can connect with native speakers of the language, tutoring one another on the language. Interaction with pen pals becomes instantaneous with an education technology as simple as an email or Google doc. The 1:1 initiative is allowing classrooms to shatter their walls and expand on a global scale.

While well-intentioned, 1:1 initiatives and the implicit expectations of student ability and performance create a problem. The devices work well on school property where internet connection is both available and fast. Nevertheless, when students leave the premises; this is no longer a guarantee. Students without a reliable home internet connection are unable to use the technology to its full potential when the school day is complete. Students are left with over-priced calculators and word processors. Most students without reliable internet connection in their home are from lower socioeconomic status, and do not have access due to the economic hardship created by paying for the connection (Goldsborough, 2000). In order to rectify the inequity, schools must bridge the material access divide and provide internet connection to students qualifying for free and reduced lunches. Recognizing the financial hardship for economically disadvantaged students, Congress passed the National School Lunch Act in 1946. The act established guidelines on income eligibility for students to receive a school lunch for free or at a reduced cost (Gunderson, 2015).In the 2011-2012 school year, 49.6% of all students in the United States qualified for at least a reduced lunch rate ((National Center for Education Statistics, 2013).According to the United States Department of Agriculture, income guidelines are calculated by, "multiplying the year 2015 Federal income poverty guidelines by 1.30 and 1.85, respectively, and by rounding the result upward to the next whole dollar." In the 48 contiguous states, a family of four cannot earn more than $44,863 to qualify for reduced lunch. This means, two adults working full time cannot earn more than approximately $10.78 per hour each in order to qualify. This figure is only slightly above the proposed federal minimum wage of $10.10 per hour. When considering data for education and income purposes, free and reduced lunch percentages are often an indicator of poverty based on the low income thresholds required to receive the assistance.

Most who qualify for free and reduced lunch services live in homes where earners make minimum wage or near minimum wage. Current federal minimum wage is $7.25 per hour. At this rate, a family with two wage earners working full time would earn a gross pay of $580 per week (approximately $31,200 annually). This amount must cover housing (including utilities such as electricity and water services), transportation, insurance costs (both health and auto insurance being mandatory in most states), and food, clothing, and medication costs, among other things. While assistance programs exist, people still struggle financially to provide for themselves and their families. In making economic decisions, feeding the household trumps internet connection. Thus many students are faced with a material access divide. With almost half of all students qualifying for free or reduced lunch, it reasonable to assume that a significant number of these students do not have a reliable internet connection that they can access at home for completing their homework assignments. They are left with some options.

Many towns have libraries or community centers available with internet connected computers and Wi-Fi internet available to patrons. The environment is usually quiet and frequently has support on site to assist with technical or even academic needs. Additionally, several restaurants and coffee shops provide Wi-Fi internet access to customers. It is an increasingly common phenomenon to go to the local McDonald's to finish assignments on school loaned electron devices. However, this option is not an effective solution. Students who do not live within a reasonable walking distance from a restaurant or library must find transportation. Students with parents who work late or do not have a reliable vehicle may not be able to find the ride to access an internet connection. This situation creates a stressor that their peers with a home internet connection do not face. These students who must leave their homes to access an internet connection needed to complete necessary course work are receiving an inequitable education. Providing internet access to economically disadvantaged students is not a novel idea. There are examples of schools pushing initiatives to bridge the material access divide for the last decade. Realizing the need to provide all students with access to educational technology, the Chapel Hill-Carrboro City Schools in North Carolina began a loaner program in 2003 in which students could borrow "thin clients," a device with no hard drive, but instead with an internet connection to which students could dial in and access educational materials (Vail, 2003).

Though this type of solution is outdated, it demonstrates the steps some schools have taken to provide their students the access they needed to accomplish academic tasks. Two years later, the state of Maine's former governor, Angus King, raised more than $800,000 with the nonprofit Maine Learning Technology Foundation to fund dial up internet access for middle school students who qualified for free or reduced lunch (Barack, 2005). In 2014, economically disadvantaged students in Fayette County Georgia were provided free wireless access in their homes using service provider off-campus wireless broadband, Kajeet. According to the district's Title I coordinator, Clarice Howard, "The pen and paper days are gone in school . . . with the need to extend the learning day, it's our responsibility to level the playing field . . .by providing equipment for connectivity" (as cited in Meyer, 2014, p. 5). The administrators at the Fayette County district understood the importance of educational technology and connecting *all* students to virtual learning spaces. The access provided to these students offered an equal access to education and educational materials. Students were able to complete assignments in their home without finding transportation to local community centers. Moreover, they had ample time while at home to practice interacting with the digital technology. Thus, providing internet access to students in their homes promises to bridge the gap not only to the material access divide, but to the internet skills access divide as well. A decade ago when Maine provided internet to economically disadvantaged students, the cost for dial up connection was approximately $8.33 per household per month. Dial up access, a more affordable alternative to broadband connection is no longer an acceptable connection. It does not allow students the capability to accomplish the educational tasks required of current learners. Most digital devices provided by schools require a wireless connection, which a dial up connection cannot support efficiently. The devices will run sluggishly and continue to puts students who are eligible for the provided internet access at a disadvantage. To ensure equity, districts must provide a wireless internet connection capable of supporting wireless devices at a speed which allows for quick use and manipulation.

One way local education agencies could reduce the cost of providing a free internet connection to students is to set up publically accessible wireless local area networks (LAN) in the community, commonly known as hotspots. These wireless LANs are frequently used in businesses and schools. To ensure that the network in not bogged down by non-student users, the network could require a password for access. Several hotspots could be placed throughout the community and in surrounding rural areas to ensure access for all students within the district who meet income eligibility. Some school districts have already used the idea, placing hotspots on buses (McCrea, 2015). In 2015, Coachella Valley Unified School District in California placed mobile Wi-Fi transmitters powered by solar panels on three buses; students who ride the buses are able to use the internet connection to work on assignments as they ride the bus to and from school (McCrea, 2015). Once their routes are finished, the buses park near neighborhood and Indian reservations where internet access is limited to provide 24 hour connection to students who live within a 100 yard radius of the vehicles (McCrea, 2015). This is not a suitable solution in communities in which students live in rural areas, separated by miles, not yards. However, it is an alternative to neighborhoods with a high population of students who are economically disadvantaged. Schools who do not provide internet access to students receiving special education service may find themselves in some legal trouble. The Individuals with Disabilities Education Act (IDEA), the federal special education law, mandates all students have the right to a free, appropriate education (FAPE).

In order access their education, some students served under IDEA require assistive technology. Assistive technology is, according to IDEA (2004), "any item, piece of equipment, or product system . . . that is used to increase, maintain, or improve functional capabilities of a child with a disability." Assistive technology is a necessary component to the education of a large number of students with disabilities, and has proven effective in preventing regression of learned skills, improved academic function, and provided opportunities to develop post-secondary transition skills. Tablets have applications which allow non-verbal students to communicate more effectively than previously used interventions such as story boards. If a student has a disability that requires assistive technology to access general education curriculum and that technology requires internet access, then the student is legally entitled to receive those services. If a child is unable to complete an assignment because they cannot access an internet- based assistive technology, the student's family could legitimately argue the school would be in violation of that student's right to FAPE as outlined in IDEA. For example, students with a disability which affects typing skills or written expression may have the use of a dictation application in their Individualized Education Program (IEP). However, without an internet connection, some dictation applications do not work which could potentially prevent a student who required use of the application due to their disability from completing the written work, thus creating an obstruction to their accessing the general education curriculum.

Even if schools make use of wireless access points to provide mass internet access, it must be conceded that providing home internet access to students who qualify for free or reduced lunch will not be a low-priced endeavor. Local education agencies will have to increase operating budgets in order to support the educational needs of all their students. Local education agencies willing to invest the amount of money necessary to eliminate the material access digital divide deserve a solid return on their investment. Natriello's (2001) research supported this sentiment, stating, "A misallocation of resources . . . . Can have an immediate impact on the educational opportunities for students . . . . A truckload of computers delivered to a district without the resources to . . . .

Prepare teachers to use them can weaken the overall school program" (p. 262). Therefore, it is not only the district's obligation to provide the internet connection to students; it is the responsibility of educators to provide educational experiences that allow for both academic and social-emotional growth. Teachers need training to use the devices efficiently and effectively. Teachers must find applications that allow connection to the content and provide opportunities for students to apply their learning to other areas. If local education agencies provide educational technology and internet connection to economically disadvantaged student then the devices not become simply a tool to occupy students after the end of a lesson. Teachers must be trained to reflect on their use of educational technology by following the five conditions of well-designed gaming delineated by Gee (2008). Though his intent was to set up expectations for the use of gaming in the classroom, the conditions apply to the use of all educational technology. Students using wikis to collaborate with other classrooms should know the learning target, interpret the experience and explain the use of the lesson, obtain feedback from others collaborating on the project, apply the experiences later, and, finally, be able to teach the skills to others later. Gee's conditions outlined best practices for educators incorporating educational technology into their classroom. If teachers are able to provide learning experiences using educational technology that is reflective and allows ample opportunity for educative growth, the money district spend on providing home internet connection to economically disadvantaged students would be money well spent.

3. Conclusion

Until every student in the United States has access to internet technology, there is an inequity in education. Educational technology has the immense power to renovate education. Hague and Payton (2010) explained the transformative influence digital technology can have in the life of a student:

Developing digital literacy is important then because it supports young people to be confident and competent in their use of technology in a way that will enable them to develop their subject knowledge by encouraging their curiosity, supporting their creativity, giving them a critical framing for their emerging understandings and allowing them to make discerning use of the increasing number of digital resources available to them (p. 10). While all students should have internet access, students who are provided digital devices and expected to interact with internet technology in order to complete assignments must be delivered the access if their families cannot afford to provide it. The argument of the paper does have limitations and questions that should be considered in undertaking the monumental and expensive task of providing home internet access to economically disadvantaged students. With already large operating costs and limited funding opportunities, schools face strains on their budgets. Class sizes are as high as 40 or 50 in some school districts.

This article provides potential solutions to bridge the material access guide, but does not explain the cost per year to the school district. Schools may have to slash an already limited budget without involvement from outside agencies. Maine's initiative discussed in the paper was funded in part by the Maine Learning Technology Foundation. Further study is recommended in funding sources to assist schools in granting internet connections to its pupils.

The argument of the paper also requires consideration of the structural needs of providing internet connections. Some homes may not have the infrastructural components necessary. Older homes may not have wiring needed. Some older homes may have only within the last 50 years brought plumbing indoors. Finally, further study is needed on the burden of internet connection on homes in which families struggle financially. With increased electricity use for devices or routers, what could this to for households already struggling to pay utility bills. Would this create another barrier to digital access if students are limited in the amount of time they can spend using devices? There is no doubt that fluency in the use of digital technology is a pervasive theme in today's world. A lack of access can create barriers for students trying to escape poverty. Though education promises increased financial security, students who cannot access the internet cannot apply for college, register for college entrance exams such as the ACT or SAT, or apply for financial aid. Further, digital literacy is an employment skills students will need to learn to be part of the 21st century workforce. With the ability to practice while still in a K-12 setting, educational technology is necessary asset for personal growth and development. The best thing a school can do for its students is to give them as much practice as possible.

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