The Digital Divide: Technology's Impact on Education

By Nzinga Holloman

Easy access to technology has had a great impact on the United States education system. In the classroom, both teachers and students have benefited from integrating technology. Since the late 20th century, humans have developed a deep connection with computers. The invention of the internet has led us to be dependent on our devices for economic, political and social interactions from around the world. However, not everyone has equal or equitable access. This phenomenon is called the digital divide, referring "to the growing gap between the underprivileged members of society, especially the poor, rural, elderly, and handicapped portion of the population who do not have computers or internet access; and the wealthy, middle-class, and young Americans living in urban and suburban areas who have access". The digital divide is especially visible within the education system.

Income is one of the leading factors within the digital divide affecting our education system. According to a NITA study on defining the digital divide people living in a city or suburb are ten times more likely to own a computer and households with an income above $75,000 are twenty times more likely to have internet access at home.

Some low-income areas lack places where internet access is free. This affects a students ability to get their work done outside of school. Throughout a child's education, access to technology is important for both enlightenment and educational cultivation.

This made me wonder: How is technology used in schools?

Technology is now used as a source encourage and attract every day learning (Future Ready Learning). In the past, a students' learning opportunity could be limited to the resources that were available inside the classroom and in their physical environment. Students can now use the internet to inform themselves of things that are happening across the globe.

In the past, students whose schools did not offer programming classes would not be able to learn different languages. Nowadays, websites like Code Academy or Hacker rank can help students with hopes of developing programming skills. These sites teach multiple programming languages while placing learners in challenging environments.

Through technology, teachers can organize assignments around real world challenges and project-based learning. Professors can ask research questions and assign research articles to be submitted over the marking period. Students learn how to identify research materials with credibility, sufficiency, accuracy, timeliness, and limited bias. They also learn how to strategize

their writing by using skills that incorporate their ideas with data and research from affiliated sources. In this sense, project-based learning gives students the opportunity to develop new skills while focusing on a topic that they expressed interest in.

When project-based learning, technology, and internet access are combined, students have an ample amount of resources to receive information and explore complex concepts and content.

Now that we know how technology is used in the classroom, we need more information on whether it is helping students or not. I explored this by interviewing two individuals who have seen the explosion of technology within the education system.

For my first interview focused on Sharon Bradley, a special education teacher at Northeast High School. She has been with the Philadelphia School District for 29 years. During the interview I asked Ms. Bradley to reflection on her experience teaching with the help of technology and if the students develop a better understanding of the material taught.

Ms. Bradley describes the Philadelphia School district as a “poor school district”, because they cannot afford the same type of materials and devices as schools outside of the city. In her classroom her class of thirty share only two computers that were first introduced thirteen years ago. Because of the lack of technology in her classroom, Ms. Bradley cannot structure a lesson plan dependent on computers. Other than the two computers, she also has a Smart Board in her classroom that she uses to display PowerPoints. The students prefer the smart board over chalk boards, she noticed that her class responds better the visual aid of a Smart Board. When I asked her opinion on student use of technology in the classroom, she revealed that “students don’t work better with it but are addicted to it” and some devices cause a distraction in the class. Ms. Bradley wishes that she had access to digital devices so she could teach her students to use technology as a resource and not just for entertainment.

The subject of my second interview is Ayana Dunham. Ayana graduated from Cheltenham High School (CHS) in June. CHS is in a higher socioeconomic district than the district Ms. Bradley teaches in. I asked Ayana questions about her experience using technology while studying in the Cheltenham School district. From her answers a student's point of view was incorporated into the data.

Ayana remembers first using technology in second grade when learning how to type on a keyboard. As she aged, Ayana started you use digital devices more and more. By middle school half of her homework was due online or dependent on internet access. Every week there was an assignment due on Study Island (SI), an online homework site. SI content is based around subjects including reading, writing, math, science, and social studies with the goal of high performance on high stakes tests. During middle school all the long-term assignments involved

computers. The most prominent assignment from Ayana's memory was her science fair project. For this project Anaya spent time researching a topic, recording data, and translating her findings into a PowerPoint. At this time Anaya had the wonderful opportunity to edit on photo and video editing software on the school's computers.

CHS began providing Chromebooks to students in Ayana's first year at CHS. This had a huge impact on her education, Anaya describes the impact as a time "when [her] education revolved around computers and the Smart Board. [She] started to use laptops in all [her] classes." During these years she was introduced to Canvas, an online portal where assessments, grades, notes, and schedules are available. Anaya also started to use the websites Turn It In, Delta Math, and Web Assign to complete and submit homework or in class assignments. Spreadsheets and graphing with the help of technology were also introduced at this time in her education.

The interview ended by Anaya stating that although technology played a huge role in extending her digital education, it also served a distraction in her classes. In the classes where the teachers allowed students to have Chromebooks, it was easier to get distracted and lose focus. Overall, Anaya was lucky enough to have digital devices and benefited from them by developing here technical skills.

While both of my interviews described technology in school a distraction, they also saw its benefits. Ms. Bradley explained that the digital devices would provide her students with access to more information and resources to understand and complete assignments. Anaya acknowledged that with the help of a school provided Chromebook, she became proficient at using software like Microsoft Office and Photoshop. Because of the different school districts that Ms. Bradley and Anaya attend, they have different experiences with technology; a prime example of the digital divide.

The Van Dijk (2006) article titled "Digital divide research, achievements and shortcomings" published by in *Poetics* aims to review the research for 2000 to 2005 on the international digital divide. Van Dijk focuses on the question: What type of inequality is caused by digital divide?

When referring to the inequality in education, Van Dijk found out that people get opportunities because of their capabilities and skills leaving those who don't or cannot use technology disadvantaged. There is a lower amount of opportunities for those who do not have the skills, time, liking, or money for technology.

With this information we should push our education system in a more tech savvy direction, so that we can shrink the gap in the digital divide in our communities.

According to Educational Leadership Magazine article there a few major ways we can do this.

Schools can do is provide devices and/or portable wireless hotspots to students without household internet connectivity for their home. If the student is given the extra support through a hotspot, they can be at the same level as the students with internet access.

We can shrink the gap in the digital divide is by working with community organizations that provide free internet access. These organizations can include public libraries, coffee shops, etc. We can do our part by reaching out to schools and students to remind them that places like these are available.

We also need to informing parents about low-cost internet access programs. Like free and reduced cost lunch programs there also programs that reduce the cost of Wi-Fi. Websites like EveryoneOn help families secure inexpensive internet access and devices.

Technology plays a huge role in the U.S. educational system and it is our job to shrink the digital divide,