

Accessibility and the ever-changing technology in education



**ASSIGN
BUSTER**

ACCESSIBILITY AND THE EVER-CHANGING TECHNOLOGY IN EDUCATION

Accessibility and technology are issues that are affecting how the instructors prepare and teach their lesson in the classroom. Technology is continually changing in the classroom giving teachers more ways to present their lessons. Technology makes it easier for instructors to provide more options for students with physical and learning disabilities. Technology also helps to bridge the gap between communities that have varying income and funding. It helps to give students and the experience that is outside of their normal life. Teachers can teach students who have different abilities and living conditions and through the use of technology can bridge the gap between learns. Teachers have access to material that may not be within the walls of the school. They can give the students new experience and can relate with the students using the devices that the students use daily and make the lessons applicable for each of their students. In this paper, I will discuss accessibility and how technology is continually changing. I will also discuss the philosophy of education and how it relates to technology and accessibility, and how social, demographic, economic, political, diversity affect accessibility and technology in education

Philosophy

Merriam-Webster dictionary describes philosophy as principles, thoughts, and approaches of different groups. The philosophy of instructors and professors can be very different and those differences will determine how they manage their classroom and present their lessons. Their philosophy will also determine what they will or will not allow in the classroom. Classrooms

are continually changing with classes becoming very diverse and because of this a teacher's philosophy could affect the atmosphere of the classroom and will determine the accessibility of the classroom and what technology will be used.

Early Classroom

Classrooms are designed for teachers to be present lessons to students to help them develop certain skills and life lessons that will help them be successful. Students are there to learn and develop themselves to be able to live out their dreams and become successful in life. In the early classroom teachers had desks and blackboards to write and teach their lessons. Teachers taught basic subjects like literature and arithmetic. The philosophy of the teacher was to get everyone to learn the information for survival for work. The classroom did not have a lot of diversity. They did not have to deal with many of the issues that are involved in technology.

Current Classrooms

Teachers today still have the philosophy of teaching for survival but they also teach to develop, nurture students who have different backgrounds. The students may come from different areas or regions. The students are of a different race and religions. The students have different mental and physical abilities. Teachers also have to deal with meeting the standards required by the school and by the government. Teachers also have to deal with the advancement of technology in the classroom. Having to deal with these differences requires teachers to have the philosophy that all students can succeed and should have the same access to material and be equipped with <https://assignbuster.com/accessibility-and-the-ever-changing-technology-in-education/>

what is needed to succeed. In an article entitled, Classroom Management: A Guide for Urban School Teachers, it describes classroom management styles that will help teachers to be able to manage a classroom that has students from different backgrounds and living situations. The book instructs teachers on how to manage their classroom in such a way that does not affect their lesson plans and what they are trying to teach. Every child should have the opportunity to learn and have the information presented in a way that makes the information accessible to everyone. (Yisrael, 2012)

Accessibility

Merriam-Webster Dictionary describes accessible as information being presented in a way that can be understood and appreciated. Many stumbling blocks in today's classroom could make it hard to have the classrooms accessible to everyone but teachers must always strive to make sure the information is assessable to as many students as possible.

Accessibility deals with students with physical disabilities and language barriers that may make learning classroom material more difficult.

Accessibility also deals with classrooms having access to learning material and technology that will allow the students to have success in the classroom.

(Gronseth 2018)

Diversity

In the 1800 students of the same race could attend the same school. In America, black students and white students were not attending the same school. There were many issues during school segregation. Black schools

were not getting the same funds, textbooks or proper classrooms as the <https://assignbuster.com/accessibility-and-the-ever-changing-technology-in-education/>

white students. According to an article entitled, Segregation through Brown vs. the Board of Education: A Setback or Landmark Case, many of the laws during that time were found to be unconstitutional and discriminatory. Discrimination continued in the South for 10 years after this case. The Civil Rights act of 1964 was passed which said that schools receiving federal funds could not discriminate and if discrimination was found then the schools could be sued. The look of the classroom from changed after the passing of the Civil Rights Act. Another challenge for classroom diversity is including the student with disabilities. In the past students with disabilities were placed in separate classrooms. Classrooms looked differently in the past but with the help changing of laws and initiatives to help the minority, the classrooms are continually changing and are becoming more accessible to students with different backgrounds and abilities. (Williams, Grooms, 2016)

Institutional Guidelines

Students have difficulties in what they see, what they can hear. Some students have issues interacting with others and some have emotional issues. Students even have an issue with their perception of objects. Many institutions have guidelines for how teachers make presentations in class and how online classes lessons are designed. Guidelines were developed because of the Disabilities Act and the Rehabilitation Acts that were established to give people with disabilities to receive equal access when it comes to their learning experience and if accommodations are not accessible then accommodations should be made. Institutions provide guidelines to help the instructors with the color schemes, with how many pictures are shown. The Web Content Accessibility Guideline states electronic content <https://assignbuster.com/accessibility-and-the-ever-changing-technology-in-education/>

should be adaptable in the way it is perceived, navigated, understood, is the lesson able to be changed. An example would be for the instructor to present the lesson in a color that even students that could not see blue or purples could see. Another example would be if the lesson has sound then the instructor could have words or descriptions for the sound so that students who are hearing impaired would know what is going on. (Gronseth, 2018)

Technology

Technology is important in the classroom because it allows teachers to be able to use information and equipment that is outside of the classroom. Teachers can use things like virtual reality, distance learning. Teachers can present their lessons on the screen and make changes and additions immediate. Teachers can add color and screen changes in a variety of ways to make the material accessible to everyone. To make the material easier for each student to grasp the material in a way that is easier for them to understand. The digital frontier: envisioning future technologies impact on the classroom, discusses how technology has changed through the years going from 1890 till today. Technology started with radio and television and now we are using devices that can track where we go, has sensory features that can detect images, smart boards. Technology is continually changing and is useful in the classroom. Teachers you the smartboards to teach lessons, projectors are used for presentations. (Leahy, Holland, Ward, 2019)

Computer Classroom Design

The computer classroom in the Health Science Building of the Langdale

College of Business that I work in has been in existence since 2014. It is <https://assignbuster.com/accessibility-and-the-ever-changing-technology-in-education/>

designed like a typical computer classroom. The room has a capacity of 70. It is mostly used for computer classes and exams. Its dimensions are 32X70. The desks are grouped in lines of 3 on each side of the room and each student has about 2.5 feet of work area which includes the computer. The spacing of each computer is not spaced far apart. The instructor's desk is centered at the front center of the room. The desk chairs are ergonomic mesh chairs with mid-back swivel lumbar support. There are two doors total with one being placed on each side of the room.

The lights in the room are LED lighting that is light enough to see clearly but not too bright. The lights that run along with the whiteboard, which stretches the length of the room, are turned off for a better view of the board and the screen. The lighting for the room is good but not so bright that there is a glare on the screen but the light may also be adjusted if this occurs. It would be better if the room received outside lighting but it is located on an interior wall with hallways on both sides.

The instructor's computer and the student computers are both HP EliteOne 800 G4 23.8-in All-In-One PC – Customizable with Windows 10 Pro, Intel® Pentium® processor, 4 GB memory; 500 GB HDD storage, 23.8" FHD display, Intel® UHD Graphics 610. The computers do not require a lot of memory because they are not used to save information.

In one of the computer classes at a local college, there are two projectors and projector screens in the room. The projectors are installed in the ceiling. Each projector has a screen. The projectors are located approximately 20 feet away from the screen. The room has CP-WX8255A LCD Projectors with

WXGA 1280 x 800 resolution, 5, 500 ANSI lumens white/color output, 6-watt audio output, 3000: 1 contrast ratio, HDMI 2 inputs, 3, 000 hours of lamp life (Eco mode), 20, 000 hours of hybrid filter**, Picture by Picture. The projector screens are 120" wide.

There is a document camera located at the teacher's work station. The document camera is a Samsung SDP-950DX Digital Visual Presenter with Overhead and Underneath Light Sources, 12x Optical Zoom Camera and XGA Output. The BH photo video site states, " the camera can rotate a full 360° with the ability to display negatives and freeze images. It interfaces with all computers through popular connectors and is compatible with both PC and MAC platforms."

Also, located at the teacher's workstation are two types of Crestron. The DMPS-100-C

DigitalMedia™ Presentation System 100 which allows for switching between inputs controlled via the touch panel like multimedia, or mic without using different machines. The other Crestron is the FT-TS600, FlipTop™ Touch Screen. Flush mount tabletop control and connectivity in one stylish that has Integrated 5" capacitive color touch screen with Smart Graphics™ support [4], High-performance H. 264 streaming video over Ethernet, Seamless integration with Crestron® DigitalMedia™, Five soft-touch capacitive buttons for common functions, > Hands-free audio conferencing using Rava® SIP, Intercom Technology [1], Customizable audio feedback, Built-in microphone and speaker, Balanced line output for amplification of the speaker signal. It allows the touch panel to switch between inputs and control system.

<https://assignbuster.com/accessibility-and-the-ever-changing-technology-in-education/>

The classroom is also equipped with KSI Ceiling Speaker 8081-CS & 8081-CS-FR that have a frequency response of 48-20,000HZ +/- 3db, a sensitivity of 92db, power capacity of 50Rms, crossover frequency of 3500HZ passive, Electrical input Hardwired, weighing 24lbs. The KSI pro website explains that “ ceiling mount loudspeaker is our most popular model featuring a unique and innovative design in a very cost-effective package. It’s right at home in any installation demanding superb sound quality with pleasing architectural appearance.”

Lastly, HSBA 3005 comes equipped with an assisted listening transmitter for those that are hard of hearing or hearing impaired. The transmitter is the LT-800-072-01STATIONARY RF TRANSMITTER (72 MHZ). The sound of this machine is very clear.

This classroom design allows for the students to be taught with all computers facing the instructor, which is good for instructional purposes. The student’s computer desk also has space next to it to write if needed. The room does not allow for a group work area. This room is typically used for instruction and exams, so a group work area is not necessarily needed. This computer classroom is one of our most up to date rooms we have. The computers in the room have enough RAM and storage space for the classroom. The technology department did not make this room wireless to keep it safe from being hacked and to keep things simple for the transmission between all the equipment. It is maintained by our Information Technology department which is located on the same floor as the classroom. Any updates that need to be made to the software, computers, or any other equipment will be made by our IT department. (LCOBA Technology Room, 3005)
<https://assignbuster.com/accessibility-and-the-ever-changing-technology-in-education/>

Cons of Technology

Some studies have found that some teachers are not comfortable using social media in class because they feel there may be some privacy concerns, the students will be distracted and not pay attention in class. Some teachers feel that people will be less trained to do things themselves and rely on programs and computer applications to do the work. They believe that students learning from a person is better than learning from a computer or laptop. Technology should be used for personal use not in the classroom. Another negative would be the teacher using it to replace their teaching, relying on the computer to teach. It doesn't allow students to connect with the students. (Kemp, Preston, Page, Harper, Dillard, Flynn, Yamaguchi, 2014)

Pros of Technology

Teachers that are for the use of technology in the classroom feel that it will only enhance the classroom experience. It is another added tool that teachers can use to bring excitement to the classroom. It can be used to help students who have never traveled to be able to see places they may never go or haven't gone. Teachers feel that technology allows them to keep up with the world that their students are living in. Technology connects students more in online classes because students have the instructor's cell numbers keep in contact more with them than if they were face to face in the larger classes. (Kemp, et. al). Technology allows teachers to be able to create things like virtual reality. Virtual reality allows the teacher to be able to combine the physical world and the dimensional world. Teachers would also be able to use what is called Artificial Intelligence which incorporates

using machines, robots to perform certain functions. Students will be able to learn about technology in the future. With these advances in technology, teachers can recreate and redesign the classroom to cater to the needs of the classroom and the students. (Leahy, Holland, Ward, 2019)

Social

The way students communicate today is by using social media. They use things like Facebook, Instagram, Snapchat, Instant message, Texting, YouTube, Twitter. There was a study done at UW and found that 21% of their students wanted teachers to use more social media in class which was more than when the study was previously done (Coffman, Fournier, 2019).

Teachers use social media to communicate with students about what is going on in the classroom.

Students

More and more students have cellphones, tablets, laptops and have access to different apps and programs that are easily accessible. They can take the information everywhere they go.

Those things are also coming into education. According to the Education Digest article, students use more technology at home than they do in the classroom. The article reported that 39% of the middle school students were able to use their phone and mobile devices at home to do their homework and only 9% said that they were able to use them in the classroom. 31% percent of those students did report using devices like tablets and 18% said they were able to use the tablets in class. Another point that the article

brings out is that students that use their mobile devices are more interested in programs the STEM programs that schools systems are using to encourage creative learning

Teachers

Teachers use social media to send messages to students about a class assignment, class cancelations, or upcoming events. They use YouTube to show videos to go along with their lesson. Teachers can use social media to connect the student to lessons allowing the students to become actively involved in the lessons in the classroom and also allowing the students to actively engage into the discussion of the classroom and online. Teachers are nervous about using social media because they don't want it to become a distraction in class and don't want to break any laws. Teachers are concerned with the policies and curriculum that are required to meet by the school system. (Herro, 2015)

Economy and Demographics

Access

One of the downsides of using Technology in the classroom is that everyone does not have access to it. Cities and towns that are in rural areas may not have access or limited access to the internet. Some students may not have access to mobile devices, laptops, or computers at home. More school systems are using tables and programs for testing, assignment practice, and homework. Students for poorer areas may not have access to these things at

home. An article dealing with the difference in the schools that have the funding and the poorer that do not are trying to keep up.

Funding

Schools with money would donate a computer to a school who had no funding or could not afford them. The reading give to views with one suggesting that when you have more funding or money for technology that it is related to financial growth, diversity, and equivalence and would do the same for poorer schools and the other suggesting that the only thing that happens when computers are given to schools is that the suppliers are getting richer but that it's not helping the school system to be able to sustain itself. (Raven 2013)

Politics and Cost

Government Involvement

Classroom technology has to be up to date to be able to have a program that will communicate with these types of apps and programs. School systems have a hard time trying to keep up with technology and upgrades from year to year. The government provides funding and grants to help defer the cost. The government had to try to decide which schools will get funding and how much funding each will receive. They also have to figure out how the funding should be used. American schools are trying to keep up with each other and stay competitive with schools around the world. The government creates grants like Race to the Top to be able to provide funding for schools who meet a certain goal and are striving for success. With the Race to the Top

program, the government was hoping to be able to close the gap between school so all students will be able to succeed. (The Hetcher Report, 2019)

Technology Expense

A school in North Carolina received a grant from the federal government program that gave \$20 million to the school district. 11, 300 MacBooks were purchased for each of its students. The program was called Race to the Top was funded by the government. This program was to help schools stay and become better equip and have other alternatives that will allow them to provide their students with the tools needed to be a success. Schools not only need funding to purchase the technology but they also have to pay for programs to keep the equipment updated. They have to pay for programs that keep the security of the equipment, students and employees' personal information safe from attack. Schools struggle to keep up with the demand and the continual changes in technology and programs. (Hatcher Report, 2019)

Conclusion

Accessibility and the changing technology are very important to today educational system and the classroom. Classrooms are constantly changing. The classes are being more diverse to include students with physical and mental disabilities. The classroom is comprised of students that have different background and lifestyles. Teachers have to manage a classroom full of new-age students that learn things in many different ways. Teachers are required to get more training just to keep up with the technology that is constantly changing. Teachers are required to more training in technology to <https://assignbuster.com/accessibility-and-the-ever-changing-technology-in-education/>

be able to stay engaged with the students to make the lessons unique and different so that the students will continue to pay attention and be excited about learning the information. The school systems have to make sure that the funding is there for the school to be able to stay competitive and for the students to be able to succeed once they graduate. It takes everyone being involved and engaged to ensure that every student can succeed.

References

- BROWN, P., & KEEP, E. (2018). Rethinking the Race Between Education & Technology: Issues in Science & Technology, 35(1), 31-39.
- Burgstahler, S., & Washington Univ., S. (2001). Real Connections: Making Distance Learning Accessible to Everyone.
- Exploring Virtual Reality for Developing Soft-Skills in STEM Education. (2017). 2017 7th World Engineering Education Forum (WEEF), Engineering Education Forum (WEEF), 2017 7th World, 461. <https://doi.org/10.1109/WEEF.2017.8467037>
- Gronseth, S. (2018). Inclusive Design for Online and Blended Courses. *Educational Renaissance*, 7 (1), 14-22. DOI: 10.33499/edren.v7i1.114
- Heble, A. (2017). Classroom Action: Human Rights, Critical Activism, and Community-Based Education. Toronto: University of Toronto Press, Scholarly Publishing Division.
- Jayaram, N., Evans, M., & Lazin, F. A. (2010). Higher Education and Equality of Opportunity: Cross-National Perspectives. Lanham, Md: Lexington Books.
- Kemp, A. T., Preston, J., Page, C. S., Harper, R., Dillard, B., Flynn, J., & Misato Yamaguchi. (2014). Technology and Teaching: A Conversation

among Faculty Regarding the Pros and Cons of Technology. Qualitative Report, 19(3), 1.

- Leahy, S. M., Holland, C., & Ward, F. (2019). The digital frontier: Envisioning future technologies impact on the classroom. *Futures*. <https://doi.org/10.1016/j.futures.2019.04.009>
- Ramirez, M. (2014, August 28). The Real Cost of Digital Classrooms. Retrieved from <https://time.com/3104013/digital-classrooms-race-to-the-top-blended-learning/>
- Stegmeir, M. (2018). BRIDGING THE EMPATHY GAP: Nick Kristof on Why College Access is Everyone's Business. *Journal of College Admission*, (240), 31-32.
- Technology-enhanced learning and the multi-cultural classroom: Exploring impacts of open educational resources' use on collaboration and teamwork. (2017). 2017 6th International Conference on Information and Communication Technology and Accessibility (ICTA), Information and Communication Technology and Accessibility (ICTA), 2017 6th International Conference On, 1. <https://doi.org/10.1109/ICTA.2017.8336069>
- Tettegah, S. Y., & Hunter, R. C. (2006). *Technology and Education: Issues in Administration, Policy, and Applications in K12 Schools*. Amsterdam: JAI Press Inc.
- Williams, S. M., & Grooms, A. A. (2016). *Educational Opportunity in Rural Contexts: The Politics of Place*. Charlotte, NC: Information Age Publishing.
- Yisrael, Sean B. (2012). *Classroom Management: A Guide for Urban School Teachers*. R&L Education; 1 edition (February 2, 2012) <https://assignbuster.com/accessibility-and-the-ever-changing-technology-in-education/>