Internet of Things as it relates to the Classroom

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**Link to Blendspace**

Classrooms have transformed tremendously implementing and utilizing wearable technology within the last 5, 10, and 25 years. It is truly hard to believe that lessons were delivered by chalkboard less than 20 years ago and today lessons are delivered strictly through technological programs and tools (See Blendspace,1). It is one thing to use a smartboard in class, and it is another to use wearable technology devices. Wearable technology has transformed the classroom as we know it and will continuously transform the way students will learn and grow independently in years to come (See Blendspace,2). Such wearable devices might include Fitbit, Google Glass, Go Pros and many more alternative options. Kelly Rhea states, “A student might use a head-mounted GoPro camera to film a first-person narrative, or perform chemistry experiments” (Rhea, 2014). These devices not only help students learn and grow independently as they grasp the information and become more engaged in class, but students will use wearable technology devices to learn more about data and utilize data to make a concluding hypothesis (See Blendspace,6). However, it is crucial to understand wearable technologies that are being implemented in this school year of 2016-2017 and how they might inspire and engage the classroom and/or maybe how they may affect students overall success negatively.

According to the article, Personal Wearable Technologies in Education: Value or Villain? By A. Borthwick, C. Anderson, E. Finsness, and T. Foulger, they define “wearables” as, “Stands for digital devices or computers that can be work and used in the real world” (A. Borthwick, C. Anderson, E. Finsness, and T. Foulger, 2015). Wearable technologies have become such innovative devices utilized in the classroom that Amazon has actually created a wearable technology online store (See Blendspace, 5). Various devices have been established to be
implemented in the classroom including; Google Glass, KeyGlove, Autographer, GoPro, Muse, and Oculus Rift. These devices can be used by students or teachers as a camera to record class discussions or lectures, track student progress, enter data, and much more. According to the Journal of Digital Learning in Teacher Education, they state, “One of the valuable benefits of wearable technology is its ability to add a new engaging element to the teaching curriculum” (A. Borthwick, C. Anderson, E. Finsness, and T. Foulger, 2015). Students can use these wearable devices to record lessons and thus will be able to go back and watch utilizing the pause, play, fast forward, rewind and other functions. This will lead to success as the students can learn at their own pace, at their own time. Not only can wearable technology lead to success for all of our students, but wearable technology can also help individuals with disabilities (See Blendspace 7).

All wearable devices display many positive attributes, however there are some concerns when it comes to wearable technology in the classrooms. The first concern is student safety. Students can wear devices that collect and post data yet where is that data going to on the world wide web? Posting this data as well as posting personal data on themselves is a danger to their own privacy. In the article, Personal Wearable Technologies in Education: Value or Villain? The authors state that classroom limitations is another factor in implementing wearable technology in the classroom indicating, “Another issue with wearable’s is simply that some of their apps can be disruptive to the classroom” (A. Borthwick, C. Anderson, E. Finsness, and T. Foulger, 2015). Lastly, wearable technology is unfortunately very expensive and costly to local school districts. The expense of these devices is just not feasible for low socioeconomic schools. Google Glasses, being an extremely expensive investment, is the most recent innovative technological device that is being implemented in schools today and will be in even more schools by the year 2020.

One wearable device product that is fairly new and innovative to the educational classroom is called, “Google Glass” (See Blendspace, 4). Google Glass is defined as, “A type of
wearable technology with an optical head-mounted display (OHMD)- essentially it is a pair of glasses you wear that has a mini display screen you can see in the corner of your vision” (E-Learning Update, 2014). Google Glasses are standard glasses that display a mini screen on the user’s right lens. Not only is there a screen included in the glasses but there is also a touch pad on the side of the glasses where the user can access other information such as the Internet, apps or even a camera to capture written notes or other activities in the classroom that might be going on. For individuals that are visually impaired, Google Glass includes a microphone for voice recognition for commands. This command center is called, “Google Now” rather than “Siri” or “Cortana”. Google Glass will be a fantastic tool to use in the classroom because it allows teachers and students to use functions on the device such as the ability to “search”, “record a video”, “translate a language” along with other various functions that enhance teacher and student use in the classroom. Teachers can utilize Google Glass in the classroom for not only instructional methods but for taking attendance or even opening a webinar for students. Another amazing attribute Google Glass offers is their dependency to be a part of classroom field trips for students that cannot attend for financial reasons or for other personal reasons. Google Glass can immediately display live video coverage as well as data, facts, and crucial information on the artifacts on the field trip. Outside of the classroom, Google Glasses can be used in many different ways, for example it can be used as a GPS for drivers (See, Blendspace 10). Not only can students and teachers utilize Google Glasses in the classroom but parents can also access it at home to receive test scores, homework scores, and report cards from the teachers almost immediately.

Although Google Glass includes multiple favorable attributes, there are various negative sides to Google Glass including; distractions, visually impaired students that already have glasses, and that the screen is essentially too small too see and also time consuming. With Google Glass, it can be determined that students will become easily distracted when navigating through the Glasses different functions, teachers will find students getting off task and not doing
the appropriate work. For example, many young students that are introduced to iPads in today's classroom will most likely start downloading apps, play games, and take pictures or videos and more. Young students will most likely do the same with Google Glasses (See Blendspace 8). Another negative aspect to Google Glasses may also include visually impaired students that have glasses already. How can students with glasses wear Google Glasses on top of their own glasses? It is simply not fair for those visually impaired students to not be involved in such an innovative, engaging, and interactive opportunity. The last negative feature to Google Glasses is it is time consuming. Google Glasses can be time consuming for all students and teachers because the screen is essentially too small to see the written text. Text that students could read in seconds in a textbook before is now read on Google Glasses using more time because students may not be able to clearly see what is being read. Google not only offers these Google Glasses for classrooms but, they offer alternative inexpensive devices called, “Google Cardboard” Glasses that work with smartphones for students to go on realistic virtual field trips. “Google Cardboard” Glasses is a pair of glasses where students insert their smart phone into a cardboard pocket. Thus, students can download applications where they can view anything from concerts, google street view, and taking realistic field trips to space or even across the world (See Blendspace, 3). In the article, Wearable Tech Expands New Horizons by Alison DeNisco, she states that wearable technology is defined as, “Anything electronic and worn on one’s body- will mainstream in schools within four to five years, predicts the 2015 New Media Consortium Horizon Report” (DeNisco, 2015). Utilizing Google Cardboard Glasses in the classroom will help potential classroom management problems thus allowing students to become more engaged and interactive in class. Students that have ADHD or other behavioral problems in class, now are offered the opportunity to move freely and independently around the classroom and virtually walk, run, and jump through realistic locations around the world. Alison DeNisco also states that, “The report forecasts that the classroom wearable technology market in the nation will grow at an annual rate of 46 percent from 2016 to 2020” (DeNisco, 2016).
Although Google Cardboard Glasses is an affordable investment to implement into the classroom, it is important to understand the negative attributes it delivers to the classroom as well. Some of those attributes may include price, distracting, and inconvenient for note takers. In spite of the fact that Google Cardboard Glasses are significantly cheaper than “Google Glasses”, cost is still an issue. Lower socioeconomic schools or areas might not be able to afford the Google Cardboard Glasses for each student as they are $20-25 per pair. Another negative attribute of Google Cardboard Glasses includes students being distracted. Teachers can deliver specific directions for students to connect and navigate virtually; nonetheless, it cannot be determined whether they are indeed following the class virtual field trip or if they are playing games. Students will have the urge and temptations to go play games or engage in other non-academic applications. Lastly, students that do attend these virtual field trips will most likely be required to write notes or answer questions on a worksheet. But, how will students write notes or work on worksheets during these virtual field trips when they are wearing these full eyewear cardboard glasses. They would have to pause, put the cardboard glasses down, write their notes, put the cardboard glasses back on, and play again; it is simply inconvenient for the students.

As a future college educator, I will pursue technology in my classroom because I feel as though it truly does engage and educate students of all ages. Furthermore, after researching wearable technologies in the classroom and learning the positive attributes it holds towards student success, it is crucial that some form of wearable technology be implemented to further pursue students future career. Although the cost may hold schools back from implementing such devices, it is crucial we look towards grants or funding opportunities and as educators we develop an educated reasoning behind why wearable technology should be implemented into our schools. After all, technology and wearable technology is continuously changing and therefore we must implement it now to prepare for the technological future. (See, Blendspace 9)
As wearable technology is continuously growing in this world and continuously being implemented and utilized in and out of the classroom, it is so hard for schools and districts to keep up to date with the different software that is available for purchase. There are so many choices and options, how can schools make an educated decision that is best for their students without sampling or having somewhere to try out the product? Also, at the rate technology is developed, how does a school know this is the best? In the fast paced world of technology development, something better can and probably is right around the corner.
References


Juliana Berkowitz. (2014). Wearable Technology & its impact on Education at all levels. Video retrieved from: https://youtu.be/BrhJIH8e0q0


