

# Technology Use in Physical Education

## 體育與科技應用

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### Abstract

Technology today is changing continually and physical educators need to learn to utilize it. Handheld devices and apps are being used by students and parents in almost every aspect of their lives. Rather than fight their use, should we not use them to enhance the physical education experience? This article explores the different types of technologies available to physical educators in order to enhance their classes and better relate to their iGeneration students. From devices that monitor heart rates and steps taken, to apps to break down skill analysis, this article aims to introduce teachers to alternative learning styles through the use of technology that their students and parents will appreciate and embrace.

Technology has changed at an incredible rate in the past few years. For example, it took the radio over 40 years to reach 50 million people and it took the telephone 20 years to reach the same amount. This compares to websites such as YouTube and Facebook reaching the 50 million mark in less than two years (Rosen, 2010). This incredible feat seems improbable, but it makes sense, as the accessibility of internet access has made it easy for a website to reach a massive audience across the world. Websites not only blossomed right in front of us, but they also helped advertise many electronic devices by spreading the word of their benefits with speed and convenience. Electronic devices are easier and cheaper to obtain than in the past and this is evident by the popularity of some products. The iPod in particular, is one that has reached 50 million users at a record rate and there are many other devices growing in popularity thanks to the ability to get the word spread quickly. Because of how fast technology is changing and with the ease of access, people are growing up in a whole new world than many can remember and with its popularity, it is only likely to continue.

Just as technology is always changing, it is now changing how students learn and also how they are taught. In order to keep up with the changes in technology and educate the iGeneration, teachers must be able to adapt. This age group (born after 1995) was given the title of “iGeneration” because many of them have the desire to be unique and have their devices different or customized. They were also given this name because the amount of Apple “i” products, such as the iPod or the iPhone, that this generation uses (Rosen, 2010, 2011). Just like every generation before them, they do not know anything different than what they have grown up with and what they have grown up with is technology. This is not to say that they will not learn without technology or that they cannot go one second without their beloved iPhone, but educators will need to keep the characteristics of this generation in mind while using the advantages of technology to their benefit.

Every generation has very different characteristics than the generation before them. The iGeneration has been raised on technology and are used to having



information immediately at their fingertips. Since everything can now be found in an instant, research-based tasks are more of a struggle for them and might need a little more encouragement to avoid frustration, potential burnout, or loss of self-confidence. Whereas past generations are more independent and accustomed to less input during a project, the current generation depends on feedback throughout their whole project. Next, they are used to multitasking such as listening to music while studying or keeping conversations going while doing a different task. They also embrace the challenges of new technology and want to search through every setting they can, trying make it unique to them. Social media has become an obsession for some, from the moment they wake up to right before going to sleep.

The previous generation grew up just as the internet was in its infancy stage and are sometimes referred to as the Net Generation. These parents are comfortable working with technology and almost expect that their children's teachers are also comfortable. They have no problem going online to check on how their child is doing through report cards or to read school newsletters (Rosen, 2010, 2011). It is important to stay up to date with technology as student's characteristics and learning styles are molded by having constant interaction with technology and their parents are also accustomed to it.

Because of the abundance of technology and the iGeneration's dependence on it, physical education lessons need to adapt and integrate to this new reality. Some would argue that there is no need for fancy gadgets to be used in a Physical Education (PE) class because students have never needed them in the past. This is more of a reason to bring in new ideas, especially since student obesity rates are rising at younger ages and getting students engaged in physical activity is becoming increasingly more difficult. These gadgets that the students are already addicted to can be a bridge to their engagement in physical activity and consequently, they may become more active their whole lives.

Others would argue that gadgets takes away valuable time from important tasks, such as actual physical skill development. This argument is very valid because PE classes are not very long to begin

with, especially after getting ready before and after class is taken into consideration. Nevertheless, this is where technology can be beneficial. It could be used as a means to speed up other functions of class such as attendance, grouping students, and getting or dispersing information.

Many different forms of technology can be used to improve a lesson and get students engaged (Myrum, Deutsch, & Christianson, 2012). Some examples of popular items for physical education classes are pedometers, heart rate monitors, video game consoles, fitness bands, tablets, apps, and even websites such as YouTube. The first main point is that the educator must make sure the technology is actually beneficial for the students learning; if not, then it is a waste of time and money. A very important question to answer is whether or not a device would help students during assessments, improve the teaching process, or make everyday life easier for the student and teacher. If there is no benefit to using a certain piece of technology, then it should not be used at all.

One very basic example of the use of technology would be to have an assessment for a group of students on a tablet where the teacher would be able to see how the students answered questions right away and give them instant feedback instead of potentially waiting until the next day (Docheff & Mears, 2006). Pedometers and fitness bands are great for the iGeneration because students would be able to see the number of steps that they have taken throughout the class or even the day. Depending upon how advanced the fitness bands are, the students would be able to check their calories burned or heart rate while participating in an activity. This feedback gives students a feeling of instant gratification in relation to what they are doing and could lead to students being more engaged because they can see the outcomes so easily.

An excellent way to get the Net Generation parents to become involved with their students is to have YouTube videos made by their own children, teaching a skill set to another student, such as shooting a basketball or a specific dance routine. This keeps the parents up to date on what is going on in the class. This also helps with giving the students a way to learn that is more interesting to them, but letting them use technology and be creative at the same



time (Rosen, 2010, 2011). These are just some simple examples, yet there are many other ways technology can be implemented and numerous exciting outcomes that can result from their use.

Although there are many great ways to implement technology into lessons, one must keep in mind many issues that can arise. For example, YouTube is a great resource that most children are familiar with, which makes it easy to implement. Even though it may be easy to fit into a lesson, YouTube does have its drawbacks. When using YouTube, it can be very difficult to monitor what is being watched, and thus, students may not be watching videos related to the concepts being taught. This is why everything that is going to be used for class must first be screened to avoid the possibility of issues such as a song using inappropriate words or a video not being suitable for viewing. Screening videos or songs can be easy, but if the lesson allows for students to search for their own videos, then a process to monitor what is being viewed would need to be put into place. One option would be to have a station that is in the teacher's view that students may use for a particular time while the rest do an activity and then switch when done with the computer. Another option would be to set up an account with age restrictions in place. This will still need some monitoring, as not everything is blocked. Advertisements on websites can also be a problem because they may look like games or videos at times, leading students to undesired websites. This issue can be taken care of by using a "pop-up blocker" that is approved by the school, but monitoring is still needed, because some ads might get through the blocker. There are many educational websites that can offer students reliable information, it is especially important though to keep them safe from the undesired websites in the process.

The iGeneration knows everything can be found with a simple search engine, but search engines are also an area that needs to be taken seriously. Search engines need to be monitored very closely, as they can lead students to inappropriate sites. First of all, an age restriction needs to be set before any student starts searching. Next, anything that is searched needs to be monitored or verified by the teacher. Finally, students should be instructed on what a safe website link looks like so they can also be informed. Along with the possibility of viewing inappropriate material, some

documents or applications may seem free to download yet really are being pirated illegally from sites that do not have permission or ownership to give away software. Not only can software be taken illegally, but also audio or video can become illegal if the resources were not first requested (Pittman & Mohsen, 2005). If students are allowed to browse the internet and download documents, first check with the school or district to make sure that sites are blocked. The only people that should be downloading anything, are the teachers who have been given passwords or permission from administration.

Heart rate monitors are another popular piece of technology in the PE classrooms. The most accurate ones use a band that is wrapped around the torso. This may lead to some students feeling uncomfortable putting them on, so this should be talked about with the students and have the bands only put on in locker rooms. Along with use during class time, students could check out these bands, fitness tracking watches, and even iPods, for use outside of class. Students could then track all of their physical activity or even have a program to track what they are eating with some useful applications. If this is an option, students should be signing contracts to make sure the devices are used as they are intended and to cover any problems that might arise such as if a device gets damaged. These contracts should also be sent out to parents to let them know what is expected, consequences, benefits of using them, and how to help their student to be responsible with the device. With fitness tracking throughout a class or a day, the educator can look within the application and view all the statistics of the students and use that tracking as a means of assessing. Although useful information is being gathered, the information can also be very sensitive and needs to be kept private.

Keeping parents up to date and informed on what is happening in the classroom is absolutely necessary. Contracts, newsletters, and emails are all great ways to get them the information they need. Parents also need to be notified if any video or photos of their child would be posted online or shared with anyone outside of the classroom. To help alleviate any issues, a permission form should be sent out or a handout given to students, to get their parents' permission beforehand. If a parent does not want their child videotaped or shared, then the teacher will have to monitor who is featured in the videos more carefully or possibly not videotape at all.



With great smartphone and tablet apps like “Coach’s Eye”, one could break down and analyze a student’s form during a skill performance and give feedback both visually and verbally for that student. This is a great way that technology can help reach more students by using many different learning styles. There are many great tools that can be found as apps but if anything is posted, shared, or emailed, then permission must first be granted. Keeping parents involved is beneficial in many ways, like helping to justify grades or even to show how valuable physical activity is (Trout, 2013).

Educators need to be mindful when lesson planning, due to the abundance of technology available to them. Teaching through technology has become a norm in everyday life for the iGeneration, as well as for their parents. Every new generation has its own set of characteristics that are driven by their surroundings. Technology in the classroom is so important since these students have always been engulfed with gadgets and it shows within some of their characteristics. This is not saying that technology is a necessity, but when it is understood and embraced by the teacher, the benefits are immense. When teachers can connect lessons with technology, their students will learn more efficiently, while enjoying and challenging themselves more. This enjoyment can lead to students growing up to become lifelong physically active adults which could help to change the obesity epidemic that is a health crisis today.

When technology is brought into the classroom, the first question to ask should be whether it will benefit learning, help with assessments, make daily tasks easier, or improve the teaching process. If it does not do any of those, it should not be utilized. Technology is a great tool for teachers, students, and parents, as long as it is used properly and safely. Educators need to keep learning how to use and implement technology into their lessons to help accommodate for the iGeneration to effectively help them learn. Change is often difficult for each generation. The best way to handle this is to embrace the change and to continue to learn what motivates students. From there, educators can implement new ideas and prepare for the next generation.

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