When I began working in elementary schools in the mid 1990’s technology in the classroom included one computer in the classroom for teacher use, maybe one for school use, an overhead projector, and a VCR or DVD player. Students attended the computer lab for lessons in basic programs that reinforced classroom curriculum, and computer vocabulary. During the decade after 2001 interactive whiteboards, and computer connected projectors to use with them began to show up in classrooms. Laptop computer carts began to emerge in many schools. The Microsoft Power-point, and Word programs, and on-line encyclopedias and other internet sites, were being taught and utilized by students and teachers for curriculum projects.

A few schools were piloting 1:1 laptop programs, and the i-movie program was added to the list. This decade has brought, not only a new wave of technical devices, but new ideologies about how technology will be used in schools to benefit our students. New technology devices such as Smartphones, iPads, smaller stream lined laptops, which allow students to connect to a more expansive high speed internet service and more developed computer programs than in previous decades.

The ideologies introduced during this decade represent a step outside the box from traditional school technology ideologies from earlier decades. With the exponential growth of technology devices, the internet, and computer programs educators are now falling behind. In a world where “There are over 2.7 billion searches performed on Google each month,” and “9 out of 10 teenagers have a home computer, a mobile phone, and a games console,” we need to think outside the box to catch up. (Phelan, 2012). “Today’s school system is simply not ready to prepare students for life in the information age” (Phelan, 2012). School districts will need to take the giant leap into a curriculum in classrooms that are rich with technology integration. The current movement to provide an integrated curriculum in education includes BYOD (Bring your own device), flipped classrooms, virtual classrooms, iPads in the classroom, and educational gaming.

BYOD (Bring Your Own Device) is a program where students bring their own device to school. This would benefit the district with not having to purchase 1:1 technology for their student population. The students would benefit from the comfort, and ease, of using their own device in the classroom. With having to provide less technology training for students their teacher would be able to provide more time on learning. The district would need to develop usage policies, and pay for an advanced Wi Fi filter and management system. Quality teacher training would be vital for the program to succeed. This is because a classroom with an integrated technology curriculum looks very different than a traditional one. For example students would be engaged in learning projects, such as using an app on their device to create a movie with a voice recorded explaination to demonstrate their learning. All the while the teacher is facilitating the students. This will take a major commitment on part of the district, the teachers, the students, and parents. Many of the challenges , such as loaner devices, cyber bullying and teasing, will need to be anticipated before-hand, and policies and procedures created ahead of time. Also, any other challenges that arise after the implementation will need to be dealt with quickly. Communication will be of the upmost importance between district, teachers, students, and parents to make a BYOD program successful. Expectations made clear up front lead to less issues later.

The flipped classroom happens when the teacher sends lectures, via a computer education program or DVD home for homework, and facilitates with students on work, and projects, during classroom time. The classroom work, and projects, done during class time connect student’s learning with the real world, and demonstrates student understanding. The teacher no longer conforms to the traditional model lecture, and textbook homework. Students are more engaged in the learning process because they are receiving help from the teacher with their questions on the work, or projects, in class. This type of learning gives the student more responsibility for learning. However, if an individual student has not listened to the lecture as homework, they can do this in class. For students that do not fit the flipped classroom mold, education can be differentiated back to the traditional model for them. Another possible challenge with this system is that not all students have internet access. For these students, a DVD can be sent home, or time can be set aside before, or after, school for them to listen to the lectures. They also could listen to the lectures in class and do the work as homework.

iPads in the classroom are used by teachers to integrate technology with learning. If used by teachers to differentiate instruction, and workflow, I Pads are a very effective learning tool. It allows students a kinesthetic - hands on, approach with their work. Students can use the i-Pads to take pictures, make videos, and record their voices. They can create recorded stories with their recorded voice, and use the device to draw their solutions to math problems. They can take field-trips to museums across the ocean, and look at cities up close across the globe. With the use of the iPads teachers are able to direct workflow, collect and grade student work, passing back graded student work with comments, and sharing materials with students. “Over the past few years K-12 schools and districts across the country have been investing heavily in i-Pads for classroom use” (Daccord 2012). However, the lack of teacher training in using the devices appropriately to support student centered learning has hindered its value in the classroom. Many schools have been purchasing a single set of i-Pads for a number of classrooms. Tom Daccord, in his article, “5 Critical Mistakes Schools Make With iPads (And How to Correct Them)”, states that it would be better use for administrators to pilot the iPads in only a few classrooms. iPads are not meant to be used like computers. “Administrators who fail to articulate the connection between iPads and learning often hamper their iPad initiative.” (Daccord, 2012). Communication, and adequate training for teachers seem to be the most important element when implementing iPad usage in schools, and cause the largest problems when iPads are not implemented with these elements.

The virtual classroom offers completely online, or blended courses for students, and virtual programs, and schools, are increasing in number across the country. There are virtual schools that are sponsored by the states, such as Florida. There are schools that offer online education for profit, and public school districts that offer completely on-line courses, or blended on-line courses, for their students. “The International Association for K-12 Online Learning, or INACOL, estimates that more than 1.5 million K-12 students were engaged in some form of online or blended learning in the 2009-10 school years.” (Editorial Projects in Education Research, 2011) This article also mentions that thirty eight states have on-line learning initiatives that offer k-12 courses. Some schools use these state courses, while others develop their own online classes. Some schools purchase online classes from vendors who sell them for a profit. Students can take online Advanced Placement classes, retake traditional classes they failed earlier, and online college courses offered to high school students. These courses are definitely growing in number, and also offer the flexibility of being able to use mobile devices for learning. Students are able to learn more in their own time. Students do need to be self-disciplined and self-motivated, which means this type of learning may not be for every student. However, virtual classes offer a large overhead savings, down the line, for school districts.

Teachers in many schools are beginning to see the value of educational games. Many educational internet sites offer tools for teachers to create simple games with learning curriculum, for a low, or no cost. Edu games that are designed by large companies are mostly sold to parents who can afford them for their students, because most schools would need better equipment to take advantage of what these games have to offer (Deamicis, 2013.) With the proliferation of gamers in the U.S. having purchased over 138 million Sony Playstation 2’s, and 65% of U.S. households that play video games, it becomes clear that we are a nation of gamers (Education Database Online, 2014). Playing educational games offers students learning that is engaging and personalized. Students receive immediate feedback, and learning that offers them a way to fail safely, because they can continue playing until they receive more success. (Sitzmaan, 2011). “A meta-analytic examination of the instructional effectiveness of computer-based simulation games,” found that students achieved an 11% higher factual knowledge level, a 9% higher retention level, and a 14% higher skill-based knowledge level” ( Knightly, 2013). To experience success with educational games for students, teachers must be sure that games are embedded into the curriculum, meet specific educational objectives, players should work in groups, and players play multiple times” (Knightly, 2013). If games are used appropriately within the curriculum and teachers debrief the games after playing they will be more successful in the classroom, (Marzano, 2013)

In my opinion I believe BYOD will be the most dominant in middle and high schools, and that iPads will be the most dominant trend for elementary schools. I believe that BYOD will show the most growth in middle, and high schools, simply because of the advantages of mobility, the convenience, and comfort level for students with the familiar device. Also, the financial advantages of not having to purchase/replace 1:1 devices by the district, and the fact that BYOD would also be used in flipped classrooms, will also contribute to growth.

i Pad growth in elementary schools has increased greatly in the last few years. When used with appropriate teacher training, they are helping to transform classroom learning, and workflow. Many schools, unfortunately, see them as a cost effective replacement for computers, when in actuality they are meant to be used along with computers. Also, iPads are meant to be a consistent part of daily learning for each student in the classroom to implement an integrated curriculum. If administrators make sure that their teachers have appropriate usage, and management training the iPad is an invaluable tool in delivering a technology integrated learning curriculum. As the appropriate use of I Pads is learned, and valued by districts and administrators, who see examples of success in other schools, we will continue to see more growth. I also believe that districts see the iPad as a cost effective way to bring technology into the classroom, and for this reason their numbers will continue to grow.