

Examining Educational Technology

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## Educational Technology

Technology has advanced from a mere convenience to a potential powerful tool for learning. One of the many questions educators must ask in regard to technology is, “*How* can I tap into that potential and enhance learning?” It’s easy enough to claim the use of technology as effective, but the key lies in finding practical ways to implement technology in the classroom. Though education has been slower to catch up to the “tech trend,” many schools across the U.S. and around the globe have already incorporated the digital world into everyday learning. This report seeks to examine the existing research in educational technology and draw a conclusion as to best practices.

### **Internet Usage: Search Engines and Online Encyclopedias**

According to Piccano (2011), “ Navigating the Web for information and communication is becoming one of the more popular applications,” (Piccano, 2011, p. 150). The era of visiting a physical library as the only means of acquiring research information has long since passed. Search engines such as Google, Bing, and YahooSearch exist, giving users access to images, articles, and forums. It has become necessary to instruct students in the most effective methods of finding “good” sources and valid information. For example, a well-known online encyclopedia such as Wikipedia is simple to navigate to look up background information on nearly any subject. However, this site is an “openly editable” project, which allows anyone access to write this information, and in some cases, the content may not be very accurate. Wikipedia usually flags questionable content, yet students should still be encouraged to use a site such as this as a secondary source of information.

Other more reliable means of seeking accurate information includes academic journals and online libraries. Students should be shown how to correctly cite their sources, as some may think that because it is found on the internet, it is free information. Yes, the information may be

publicly available, but it is subject to copyright laws just the same. Even borrowing pictures for a presentation requires a citation to give credit to the original source.

### **Digital Devices**

New digital tools, such as tablets, laptops, and smartphones allow learners to, "...actively research, collaborate, innovate, and share their ideas" (Holland & Holland, 2014). One of the benefits to these digital tools is fast and efficient knowledge acquisition. Current digital devices provide excellent access to the many resources available for educators and students. Portability allows users to easily snap photos, write notes, or look up information. Although technology is always advancing and it may be difficult to keep up with every current device, schools should endeavor to update their equipment every three to five years (Davis, 2010). Outdated computers or tablets will only create frustration and produce inefficiency.

Although it is ideal to renew devices consistently, it is not always cost effective or feasible in lower income districts. Educational leaders must be resourceful and savvy when it comes to budgeting. Some schools or districts use a "lease to own" program in order to acquire devices. In many cases, if the machines are working moderately well, they can be shelved and used for parts later (Davis, 2010).

### **Engaging the Learner Through Technology**

Sheninger (2014) makes the argument that "school should reflect real life" (Sheninger, 2014, p. 133). The skills taught in school should of course include elementary skills such as math, reading, and writing. However, with the advent of the internet and various technological devices, it is becoming more crucial for young people to foster creativity and critical thinking – especially if educators wish to see them have a successful career. A school that treats technology as a "frill" or "distraction" rather than an important part of modern life and learning is missing the big picture (Sheninger, 2014).

**Developing critical skills through technology use**

Essential skills for students and teachers include: creativity, collaboration, communication, critical thinking and problem solving, entrepreneurship, global awareness, technological proficiency, digital media literacy, and digital responsibility (Sheninger, 2014). All of these skills can be developed through the use of digital tools. For example, Adobe products are excellent for developing creativity. Social media sites can encourage collaboration and communication, as well as promote teamwork and a sense of ownership. In general, young people adapt to many types of technology easily and need only be given the proper tools and (in some cases) instructions as to how to use the software or program.

**Differentiating instruction**

Teachers are always looking for ways to reach every learner at all different levels. Technology offers the means to differentiate learning through the use of games, apps, and other resources to accommodate student needs. Although there is an overwhelming array of options available to learners, educators can wade through options with research and discussion with other teachers.

**Reading technology.**

A study by Spencer and Smullen (2014) examined the effectiveness of using technology for reading in education. The results of this study showed that students adapted quickly, interacted with texts in new ways, and utilized different functions to support their own reading (Spencer & Smullen, 2014). The research also concluded that technology "...motivates and encourages, gives students responsibility (and a choice in what they read or study), encourages self-regulation and a flexible learning environment, and provides the means by which to develop literacy skills" (Spencer, et al., 2014, p. 30).

**Collaborative workspaces.**

Online educational workspaces now exist to give students access to assignments, projects, and grade. Edmodo take the same premise as social media, but refines it and makes it appropriate for the classroom. This app makes it possible for students and teachers to communicate with one another while sharing their ideas and questions. Other similar apps such as schoology and wikispaces share the same sot of functions. Learnboost is a free usable site for teachers to post assignments and grades and share them with students and parents. This website even allows the teacher to use various grade weight scales, and calculates the total score, which makes keeping track of grades and attendance convenient.

### **Social media.**

One are of profound influence is social media. Many students are almost addicted to the process of creating their own profile, posting pictures or status updates, and browsing other people's accounts. Some popular media sites include twitter, facebook, instagram, snapchat, and tumblr to name a few. These sites give anyone the freedom to share about themselves, and communicate with friends and followers. It would be easy as an educator to brand these websites as "time-wasters" that detract from learning. Yet Sheninger proposes harnessing the instantaneous power of social media for learning. How can this be done? These websites grant the user the chance to share something they are proud of or want other people to see (Sheninger, 2014). When students are given the freedom to share their work with others through social media, they will feel that sense of ownership about learning and education in general. Parents, stakeholders, and other schools can stay in the loop as well to see what students are capable of doing in an exciting, digital learning environment.

### **Teaching digital responsibility**

It should not be assumed that students always make wise choices when sharing about themselves through social media. Such behavior as cyber bullying, sexting, and posting

inappropriate content should be discouraged. Schools that incorporate technology into their daily framework can hold seminars or special classes for example, that spend time discussing the above mentioned topics (Sheninger, 2014). It should be made clear that the things students post or upload to the internet do not simply disappear, but remain and create a “footprint” that will stay with them. Sheninger suggests having students google themselves to see what comes up. This activity is generally an eye-opener for many students who had not previously considered the result of sharing information.

### **Managing Classroom Technology**

One of the “side effects” of allowing/encouraging digital devices in school is the need for technology management in the classroom. The use of technology should actively involve students in the learning process – reinforcing and enhancing learning rather than preceding it (Marcinek, 2014). In addition, technology use should be organized and simple, with a smooth transition from digital to analogue learning (Marcinek, 2014). For example, students could be instructed to put their devices in “listening mode” when it is time to focus on discussion or lecture (Sheninger, 2014). As with classroom management in general, a plan is necessary to communicate expectations to students.

### **Leading the Way**

Implementing any kind of curriculum change, guidelines, etc. begins with educational leadership – this goes for technology as well. An educational leader must have vision and organization in order to successfully introduce or adjust current technology practices (Hall, 2008). One of a leader’s primary responsibilities therefore, is to accurately assess the current situation and come up with a plan. Of course, this should not be a one-person process. It’s vital for educational leaders to incorporate individuals with varying levels of expertise in the planning process (Sheninger, 2014).

**Technology plan**

A technology plan is a detailed description of what the district/school intends to achieve through the use of new or improved technology. This plan includes a timetable, budget, specific outline of what is needed, and student outcomes. The information included should be specific and answer any questions as to “how, when, and why.” Again, the plan should have a purpose as identified by school leaders, such as to enhance learning, update older technology, etc.

**Individuals involved in planning**

A wise educational leader will need a solid team to assist in planning and development. This team should include such individuals such as technology directors, principals, teachers, librarians, and anyone else either involved in learning, leadership, or technology that can contribute to the overall success of the technology plan. In addition, these team members can provide legitimate data to support decisions. Data analysis has a strong role in planning, although it does not replace expertise, experience, intuition, and judgment (Piccano, 2011).

**Professional Learning Network**

Due to the many available social network apps, it is now more important than ever for educators to reach out to other professionals in their field. A PLN (professional learning network) “...enables leaders to harness the power inherent in twenty-first century technologies in order to create a professional growth tool that is accessible whenever and wherever necessary” (Sheninger, 2014, p. 124). This method of communication provides educators with thought-provoking conversation through posts or chats, and access to hundreds of resources. One of the most popular means of developing a PLN is through twitter, which is an instant access social media cite. Scheduled twitter chats can be joined by anyone and many will have a new educational topic weekly.

**Conclusion**

Technology offers so much to the world of learning. While navigating the many apps and devices may seem daunting, an educational leader needs to keep in mind that they are not alone. It is vital to develop a support team and research the usefulness of digital devices and technology. Developing a technology plan should be part of the process of integrating or adjusting current procedures. Seeking out quality apps, games, and other educational resources can lead to differentiated learning. A balance of technology integration and planning can greatly add to learning. Educators need not feel confined to merely one avenue of media, but should explore new things and seek out what works for students, in order to reach them in a real-world way.



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