Getting started with BYOD

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"If we teach today as we taught yesterday, we rob our children of tomorrow."

-John Dewey

Today's education system is evolving to take full advantage of the potential of mobile technology devices to inspire learning and create independent, critical thinkers. However, with tight budgets, many schools are hoping to bring technology into the classroom without the costly burden of purchasing a device for each student.

One potential solution that is being explored is BYOD, or Bring Your Own Device. This allows students to bring their personal laptops, tablets, and smartphones from home and use them for educational applications in the classroom. At a time when budgets are shrinking, school districts are considering BYOD programs to integrate cost-effective technology into their educational programs.

It's a promising idea, especially for schools that lack sufficient technology budgets. BYOD takes advantage of the technology that students already own and are familiar with. However, BYOD programs have been met with some criticism from staff and administrators who believe the challenges outweigh the perceived benefits.

Setting the Stage for 21st Century Learning

A brief glimpse into any typical classroom will reveal that today's students are not the same learners that we were. These digital natives have grown up surrounded by computing technology as a natural part of their everyday lives. They live in a multimedia world, they constantly connect and collaborate, and they access information that is live and on-demand through mobile devices.

The vision of a learning environment that will best support and prepare students for life outside of the classroom is evolving. Today's world is constantly changing, requiring independent learners with new skills for changing work environments. 21st century learning is connected, mobile, and on-demand. Educators recognize the power of technology tools to support 21st century learning and create an environment that focuses on the "Four Cs" of 21st century education: communication, creativity, critical thinking, and collaboration.

BYOD Benefits

As education systems evolve to better prepare tomorrow's workforce with 21st century skills, the shift towards eLearning becomes increasingly significant. Since many schools have the infrastructure to support wireless devices, allowing students to bring their own devices gives educators access to immediate technology integration in the classroom. The access advantage—anytime, anywhere, any device—gives BYOD a significant benefit over more traditional technology integration models.

Often, this increasing demand for school technology coincides with decreasing school budgets. BYOD is cost-effective, as parents provide both the devices as well as the repair and maintenance costs. The devices are personalized, and are typically more robust and up-to-date when compared with traditional computer labs or mobile technology carts. Additionally, BYOD models have shown greater student accountability and engagement when the device is personally owned. Competitive pricing of tablets, smartphones, and laptop computers is making BYOD a viable option for districts needing to stretch their technology budget through parent financing.

As teachers strive to prepare students for their future, BYOD replicates a technology-rich environment that is already common in higher education and business. The flexibility of personalized devices supports different learners with different needs, helping students to identify skills that will make them life-long learners. With more engaged and motivated students, BYOD has the potential to positively affect educational outcomes.

Challenges and Considerations

Administrators hope that BYOD initiatives will help cut costs and increase student engagement. But BYOD brings with it a host of security concerns, including data protection and compliance with the Children's Internet Protection Act (CIPA). Protective wireless infrastructure for a BYOD program provides a segmented student network that is separate from the one used by teachers and administrators, thereby avoiding data security conflicts and protecting student information. Built-in authentication procedures enable monitoring of Internet usage while ensuring that only legitimate users are allowed to access the network. A web filter can provide Internet access controls, but it can negatively impact access speed or block desired content.

In addition to extensive planning for network security, wireless infrastructure must also have the capacity for growth. An increase in the number of mobile devices presents a growing demand for bandwidth, requiring schools to devote a large amount of their BYOD budget to infrastructure investment.

Even with the support of network security and infrastructure, a BYOD program needs the support and buy-in of all parties involved, including parents, students, staff, and administrators. Before implementing BYOD, it is important to consider the school demographics to determine if it is a viable technology financing option. Parental support, average household income, and the percentage of students who already own a device all play a large role in the success of a BYOD program. Some program models use anonymous polling to garner viable information in determining whether BYOD is the best model for technology funding.

Another consideration for BYOD is the ongoing professional development and extensive training for staff members who are responsible for implementing the program and procedures on a daily basis. Teachers may be more comfortable with a traditional technology model, which offers controlled, filtered and exclusive environments for mobile learning. BYOD is uncontrolled and offers less filtered environments, requiring effective classroom management strategies and a greater depth of knowledge about technology.

Although mobile devices have their advantages, such as anytime—anywhere learning and on-demand communication, there are limitations to the features and usability of these devices. Small screen size, Internet browser speed, battery life, software availability, and support for certain multimedia files are just a few of the considerations. As a result, mobile devices are best used as companion devices to supplement the work done on regular computers.

Planning and Implementing a Successful BYOD Program

Successful BYOD programs have strategies in place to help with classroom management of different devices and activities. They establish and communicate a responsible use policy that specifies where and when devices can be used, as well as policies for social networking and messaging. Direct instruction on Internet safety, search strategies, and netiquette can also be incorporated into a BYOD curriculum.

Schools that implement BYOD programs must also provide mobile technology solutions for students who do not have their own device, and they must support the mix of the school's technology with the students' own devices. An effective program budget allows for purchasing or leasing school-owned devices, including costs for upgrading, repairing, or replacing the devices regularly. In the past, successful BYOD models report generous sharing of devices among students as well as donation programs for new and used equipment.

With a wide variety of personal mobile devices, successful BYOD implementation makes use of platform-independent tools. Web-based applications work on most platforms and can accommodate common software needs, including photo editing and multimedia presentations. To prevent file compatibility issues, BYOD programs are most effective when they use cloud-based online storage for sharing and collaboration that works on all devices.

Educational Impact

The use of individual personal devices in a BYOD program highlights the shifting roles of both teachers and students in a technology-rich classroom environment. Teachers are moving towards a facilitator role as students take more ownership of their learning and share what they have learned using integrative technology tools. BYOD embraces the idea that when students are viewed as key contributors to their learning process, they tend to take ownership, and when they are given important responsibilities, they tend to perform better.

Leveraging the tablets, smartphones, and laptops that many students already have, BYOD is bringing learning to the 21st century and giving students a preview of how their future workplaces will operate. BYOD reduces competition for scarce PC computer labs and empowers students to be self-directed learners. BYOD also allows students to tap into their individual learning preferences. Successful BYOD program models have been shown to boost test scores significantly, with increased student engagement and motivated learning.

With BYOD, teachers can take full advantage of common features that are found in most mobile devices. This includes data organization tools, web-based applications for classroom polling and quick tests, audio for podcasting and radio broadcasts, or video for creating multimedia products. Other uses of mobile devices include QR codes, digital storytelling, language learning, and probe attachments for measuring data. New technologies are constantly emerging, making BYOD a useful long-term solution for technology integration.

Conclusion

With the convergence of widespread broadband and the growth of powerful, platform independent web-based tools, BYOD has finally arrived as an effective educational alternative to other plans that require expensive purchasing and maintenance. Viewed within a realistic perspective of both its benefits and limitations, BYOD can provide a workable solution for the many schools seeking to upgrade their educational technology.