

Mini Technology Manual for Schools: An Introduction to Technology Integration

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July 1, 2012

Advantages of Educational Technology

Integrating educational technology into the student learning experience is an effective way to engage learners and improve student achievement. Internet, mobile devices, Social media, Web 2.0, cloud computing, and other technology resources are an avenue for teachers to use instructional technology for note-taking, assessing, discussions, and other activities that may not typically include technology. This allows the teachers to “design and develop digital-age learning experiences” (ISTE, 2008) to promote student learning. Effective education technology integration does more than simply provide teachers and students researching on the Internet. Today, educators can use technology to connect with human resources that cross geographic boundaries and enables teachers to voluntarily engage in professional growth of their own choosing. Educational technology meets the needs of a diverse group of learners while assisting teaching in getting all students to achieve at high levels. Students are using technology in their personal lives and will be using advanced technology in their professional lives. Society cannot afford to let education be the weak link in the area of technology development. In fact, society needs educators to take advantage of the amazing opportunity to integrate these same technologies that students enjoy into the learning process. Technology enables students to take a more active role in learning through increased student involvement in and responsibility for their education. “Being literate no longer only involves being able to read and write. The literate of the twenty-first century must be able to download, upload, rip, burn, chat, save, blog, Skype, IM, and share” (Mullen & Wedwick, 2008). The integration of Web 2.0 tools and other technology tools into the instructional process positively impacts student achievement and provides experience in using various twenty-first century literacy skills.

Types of Technology used for Learning and Teaching

The Association for Educational Communications and Technology (AECT) defines educational technology as the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources (Januszewski & Molenda, 2008). The list of technology tools is as endless as the list of people using them. Everything from student information systems that hold student data and profiles to the use of a digital camera in the classroom and even the network that connects them together are all examples of technology used for learning and teaching. Examples of newer educational technology are tools that are part of Web 2.0. These allow students to not only consume data but to be the producers of that data. These tools are examples of the “current generation of Internet applications that allow users to collaboratively generate their own content” (Oliver, 2010). These blogs, forums, wikis, social media websites, etc. can also be used by teachers to “communicate relevant information and ideas effectively to students, parents, and peers” (ISTE, 2008).

How to make Good Decisions about the use of Technology in Schools

It is easy for teachers to fall into the trap of using technology just to be using it and then technology becomes the focal point. Therefore, educators need to make sure that technology is enhancing the learning process and is not a randomly chosen means of instruction. Technology should promote and improve student learning and should not be used just for the sake of keeping students busy. "Technology is integrated when it is used in a seamless manner to support and extend curriculum objectives and to engage students in meaningful learning" (Dias, 1999). Decisions about technology in schools has to include a systematic way of evaluating how technology is being used and then has to follow through on making sure that technology is

improving student learning. Performing a needs assessment is a vital part of this process. A needs assessment identifies the current state of educational technology and what the technology leaders believe the current state should be like. The next step is to perform a gap analysis to develop ways to go from the current state to the desired state of educational technology. Decision makers also need to align good technology decisions with the other decisions that impact student learning. Decisions must consider all variables to make sure that the end result of the technology decision will be to improve the academic performance. The educational technology tools must assist students in achieving learning outcomes that match the curricula in a way that also enhances the education experience. Good decisions about the use of technology in schools are a continuous activity and not a one-time endeavor.

The Need for and Types of Staff/Professional Development

Staff development is a key component of integrating educational technology. Unfortunately, teachers are not always knowledgeable about how to effectively integrate technology and are often unable to employ technology to create learning environments that cultivate technology skills. Schrum states, “At present the technological capacity available to schools exceeds our ability to use it effectively to enhance learning” (Schrum, 2005). Technology professional development can close this gap. Teachers must be capable of providing opportunities for students to be actively engaged in learning with technology to improve learning outcomes. Technology professional development concentrates on building teachers’ capacity for developing 21st century skills in their students and integrating technology effectively into class instruction to improve student performance. Professional development needs to involve all stakeholders in the planning process so that the staff can receive the most relevant information

for their needs. The same interactive and engaging instructional techniques that teachers are expected to use in the classroom should also be used in educating the teachers. The opportunity exists, through an effective PD curriculum, to develop teachers that are more enabled to integrate technology and provide them with more support to make their efforts successful. “Self-efficacy will have the greatest influence on intention to use emerging educational technology” (Ball & Levi, 2008). Professional development is continuous and follows a curriculum instead of a string of unrelated seminars. “Teachers crave a constant support person, in close proximity and available to fill in the gaps that arise with the rapid changes associated with technology” (Plair, 2008). Professional development opportunities should be evaluated by the participants and by administration. The final goal needs to be that the information is used to directly improve student performance.

How to Form a Successful Technology Committee

A successful technology committee should include teachers, administrators, students, parents, and community members. Having all these groups represented in the technology committee and working together to collaboratively make technology decisions will enable the committee to gain the support of all stakeholders. Membership should be voluntarily but those members may need to be recruited. There should be a commitment to forming a diverse group with various skills but that also are unified in their recognition of the power of educational technology. Committee members will all have an equal voice but may have to accept different roles. They also need to recognize that planning, implementation, and integration of technology is a continuing process and not a short-term commitment. A technology committee made up of

diverse members that represent all stakeholders and who are actively dedicated to using technology to improve student learning will be successful.

The Role and Actions of the Technology Committee

The technology committee has to accept responsibility for technology integration in the classroom to improve student performance. In other words, the technology committee has to follow through and actively assess that their actions are impacting students. Technology needs to be integrated into all aspects of the educational process including curriculum, instruction, and assessment. A technology committee has much more to do besides evaluating, selecting, and purchasing technology tools. The committee needs to support on-going activities related to the successful integration of educational technology. This includes being up-to-date on current instructional technology research and providing professional development that enables teachers to develop technological skills so that they can utilize the available technologies. Members of the technology committee must also act as role models by effectively integrating technology and as co-teachers who can help others implement these abilities related to educational technology. The technology committee must research the value and success of technology in the learning environment and provide data to demonstrate these assertions. Finally, the technology committee must involve all stake holders in creating and improving upon all technology-related policies.

Evaluating Resources and Information Literacy

Our students live, learn, and work in a world where they have access to more varieties of information than we could have imagined just a generation ago. The American Association of School Librarians (AASL) states, “Information literacy has progressed from the simple definition of using reference sources to find information. Multiple literacies, including digital, visual,

textual, and technological, have now joined information literacy as crucial skills for this century” (AASL, 2007). All parts of our education system need to embrace this new era of information literacy by exposing students to multiple literacies and teaching them multiple strategies to succeed in an informational technology-driven world. The ability to assess technology-based resources and information literacy skills of the twenty-first century need to be integrated into the curricula of every grade level and subject. Educational technology decision makers and all leaders in education need to acknowledge that the vast amount of information available makes it necessary for our students to possess the ability to “select, evaluate, and use information appropriately and effectively” (AASL, 2007). Students and teachers need to know how to evaluate if their sources are reliable. Information should be supported with research and the research should have validity to it. Evaluation is important to the educational establishment, because critical thinking is arguably one of the most important of all educational outcomes for students (Engeldinger 1991). Students and educators need to know that technology and information literacy are going to be necessary skills in order for today’s students to succeed in tomorrow’s workforce. Students will not be fully prepared to meet the challenges and expectations of society unless schools prepare them to be technologically competent and information literate (Vedra, 2004). It is possible that students, through their lives outside of school, may be more technologically competent than their teachers. However, that does not excuse teachers from the responsibility of making sure their students know how to properly evaluate and effectively use the unlimited information that is at their fingertips. Students need to begin realizing that not all information is created the same and that developing their critical thinking skills is as important now as any other time in history.

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