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Media Addiction



Rev. Edward Reading, Ph.D., LCADC
David W. Cochran, Ed. D.

What Schools Can Do

by Rev. Edward Reading, Ph.D., LCADC and David W. Cochran, Ed. D.

A student uses the cell phone to text message his friends virtually all the time. Another can't wait to return home from school so she can spend the remainder of her waking hours instant messaging friends while simultaneously listening to her MP3 downloads and taking a half-hearted stab at her homework. Meanwhile another student is in front of his Xbox playing Doom3 with a vengeance. These students spend an inordinate amount of time using technology. Is their use of these media an addiction? In this article, we will explore the central issues in what we will call media addiction, the unhealthy dependency on multimedia. We will show how this behavioral addiction can manifest itself in negative student behavior and what schools can do to address this problem.

Ubiquitous Technology

Today's students have more technology available to them than any previous generation. In addition to the ubiquitous television, which on average they watch 3-5 hours per day, students have endless entertainment, edutainment, and educational opportunities through interactive games, software, and the Internet. Some feel that these powerful multimedia enable students to build new skills that will position them well for the highly technological world of the 21st century. Others, however, feel that the over use of electronic devices is a form of addiction that will yield similar results as chemical and other dependencies.

Media addiction covers a broad range of "electronic substances." It is similar to narcotic addiction being an umbrella for several addictions to specific "drugs of choice." Television, cyber Internet, video/DVD, video-game, iPod, (and a few other media that have not even been invented yet) are all specific sub-sets of the generic media addiction.

Many of these have a synergistic effect when coupled with pornography, drug purchasing/sales/use, or various forms of online gambling. The term "behavioral addiction" can be applied to any medium that relates to the adrenalin flow and then creates a loss of control over certain aspects of our lives and diverts us from things we should be doing.

To determine how people can be addicted to media, we must first look at what addiction is and how it manifests itself. Over the course of the past century, the definition of addiction has changed and more importantly, so has our developing understanding of the diagnosis. In the early 1900s the concept was that of a bad habit, in the 1940s and 1950s the term took on an almost purely drug connotation, and in the 1980s the "behavioral addictions" came into the mix with gambling, sex, work, running, etc. Many traditionalists in addiction studies at this time are trying, with declining success, to keep the term associated with substance abuse. The behavioral addictions are,

however, much more generally accepted by professional organizations if we look at their annual meetings and journals. Both the American Society of Addiction Medicine and the National Association of Alcohol and Drug Abuse Counselors include behavioral addictions in their meetings and journals.

The relationship of media to other addictions

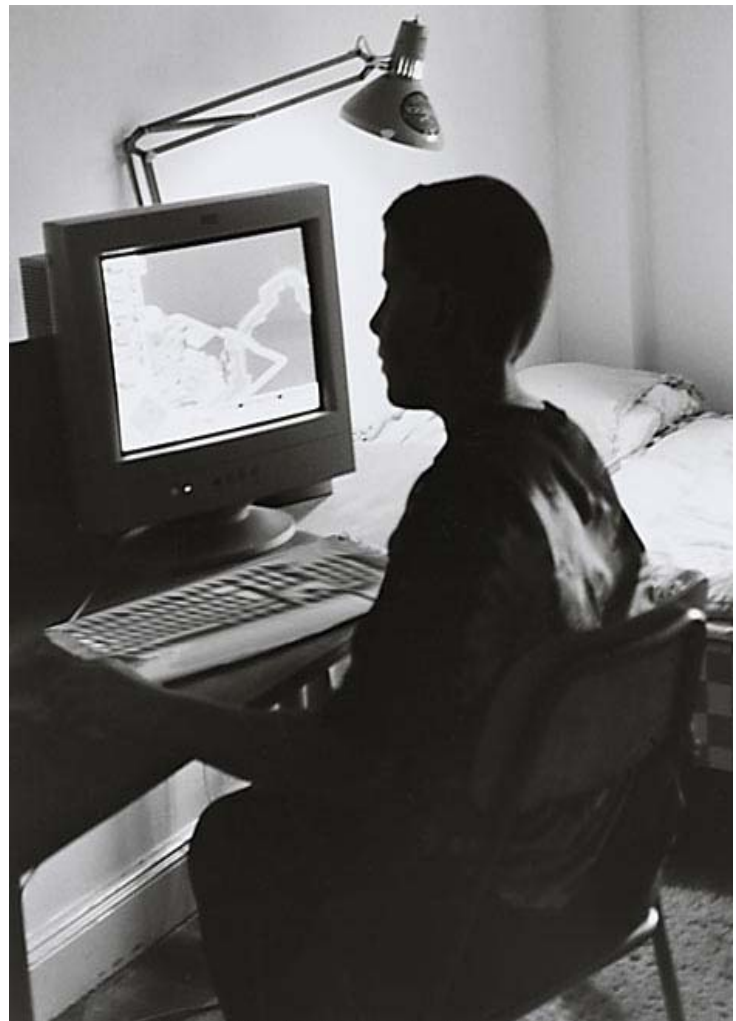
It is the new neurobiology and neuropsychology that has begun to once again update our clinical understanding of addictions. The pleasure pathways of the brain, which function because of the natural brain chemistry, show us that there are similarities between natural drugs (which are part of the brain) and the effect of introducing mood altering drugs (from outside the body) into the brain. Modern medical science, aided by PET scans and other diagnostic tools, can now show us that the brain functions in much the same way when a person uses narcotics or alcohol and when the compulsive gambler is gambling. The brain function of the cocaine addict is similar to the bungee jumper, racecar driver, or sexual addict. The neurochemical changes, which are believed to be caused by Dopamine, that occur with a pleasurable event have proven to be habit forming (Greenfield, 1999). For media-using students, the pleasure rush of a video game or the thrill of an Internet chat room may have the same effect.

Media addiction follows the classic signs of other addictions – tolerance and withdrawal. The addicted person may spend increasing hours and money getting to the same level of pleasure while feeling increasingly uncomfortable when the media is not available (Freimuth, 2005). Not all researchers agree that media can be an addiction. Grohol (2005) feels that many people engage in long periods of use of media without it becoming pathological. He notes that people may seem obsessed with reading a book, but still have control over their lives.

The current diagnostic categories used in understanding substance use disorders include the concepts of drug use, abuse and dependency. When we look at the way many people use technology, we can identify similar categories.

Diagnostic Category	Substances	Media
Use	Moderate use of a substance such as social drinking and legitimate prescription use	Healthy, balanced use of media to achieve goals.
Abuse	Use of drugs to seek euphoria, escape reality or to self-medicate painful emotions	Using media such as the Internet and TV to stimulate brain function, escape reality, and/or deal with emotional problems.
Dependence	Unable to separate from the chemical dependency without withdrawal.	Inability to separate from using media without withdrawal.
Addiction	Progressive symptoms of substance use, loss of control over use and behavior.	Increasing use of media with a loss of control, isolation, possible legal problems.

Figure 1: Diagnostic categories of substances and media





Like substance addiction, media addiction is a progressive disease that ultimately results in a total loss of control.

Personality profile of an addicted person

Like substance addiction, media addiction is a progressive disease that ultimately results in a total loss of control. We can describe the personality profile of a media addict. Active addicts of all kinds:

- are asocial, inadequate, immature and unstable.
- are selfish and self-centered, without any interest in the welfare of others, and they are only concerned with their own problems.
- are only concerned with the maintenance of their addiction.
- seek the immediate gratification of their desire for the object of their addiction, or the immediate gratification of their desire of their addiction.
- resort to any means, however unreasonable or dangerous, to satisfy this craving. They do this without concern for the distress they inflict on their relatives and friends.
- lack self-discipline, ambition and avoid responsibility.
- have a low threshold for pain and any form of discomfort. They are unable to tolerate criticism or bear frustration (Davis, 2001; Young, 1999).

This personality profile describes both the chemically and non-chemically (behavioral) addicted personality. Another way of describing primary symptoms of a media addict will include the following behaviors, along with the rationale that relates to media addiction.

These behaviors may manifest themselves a home, school, or work through psychological symptoms such as lying, neglect, or inability to control activity or through physiological symptoms such as dry eyes, back aches, or sleep disturbances (Orzack, 1997).

Where does media addiction occur?

If we look at the age group who might be vulnerable to media addiction, it is likely to be the late teen/young adult. People in this age group are usually tech-savvy and have grown up with technology being a part of their lives. They have an unsupervised independence over their use of technology, and they have the sophistication to be successful with their preferred medium.

It is unlikely that media addiction will be identified in schools because of the same denial factors that prevent substance use disorders from being identified. Teachers may see the results of media addiction revealed in the behavior of students just as they might see symptomatic behaviors in substance abusing students. Teachers might find that technology dependent students manifest these behaviors:

1. Moodiness
2. Disassociation with school work
3. Preoccupation with discussions of online activity
4. Inattention/short attention
5. Isolation, social alienation, changes in peer relationships.
6. Dropping out of activities that used to be important.
7. (In early stages) improvement in academic performance.

Behavior	Rationale
Living in a false reality	Media addiction (except when a web cam is present) can allow individuals to be perfect, physically, emotionally, socially, and intellectually, as part of a self-created fantasy world. When people spend most of their waking hours in a fantasy world, they can begin to believe that the fantasy is real. They start losing touch with reality, alone and isolated. The extreme use of video games can provide a fantasy world in which people can escape.
Isolation	The Internet allows for instant communication with more people than in any other time in human history, but the human connection is replaced by the electronic connection. That which appears, on the surface, to be able to connect humans can, during dependency and addiction, actually isolate. The more the addicts feel isolation and loneliness, the more time they spend online. This leads to a loss of social skills.
Loss of social skills	With increased isolation and loneliness, is the loss of ability to develop and/or maintain social skills. Pre-adolescents may not develop these skills, while young adults may actually lose the skills that they have. When one is self aware of the loss (or lack) of social skills, the easiest thing to do is retreat into the false reality and isolation of the Internet. This begins the vicious cycle, which leads to the progression, which is symptomatic of the addictive stage.
Obsession and Compulsion	The vicious cycle and progressive use takes on the obsessive thinking pattern that is similar to psychological dependency and addiction. Obsession and compulsion are different psychiatric concepts. Obsession is the thinking pattern where the person realizes he/she is out of control and would like to stop. The delusional person does not know that what he/she is doing is abnormal, and he/she has no desire to stop thinking about it. Compulsion is the behavior, not the thinking. Psychological addiction is the thinking and feeling pattern that leads to compulsive behavior.
Craving	Similar to the cravings for chemical euphoria for the drug addicted person, the media addict craves more and more time online. The cravings increase, as the progression develops.
Euphoric feeling/depression	The media addict gets into a state of euphoria/thrill/excitement when getting involved in his/her addictive behavior; or depressed mood and irritability, if denied access to the cyber world (also called withdrawal). The additional "rebound effect" of going from an extreme high to a clinical depression is another similarity with stimulant addiction.
Co-morbid addictions	It is rare that addicts are addicted to only one drug or behavior. Some experts theorize that most addicts have three addictions. Media addiction rarely exists alone. While substance abuse can be one of the co-morbid conditions, it is not the most common. More commonly, we see media addiction co-existing with: Sexual Compulsiveness/Addiction, Compulsive Spending/Spending Addiction, Compulsive Gambling/Gambling Addiction (includes some computer gaming, stocks and bonds trading/day-trading), Control/Power Addiction (includes those who experience the "thrill of the chase" when it comes to identity theft, creating destructive viruses, breaking into others' computers/programs/etc. Much of this category falls into the illegal arena) and Drug Addiction based on access to prescription drugs and non-controlled plants, seeds, etc. that can develop into a substance use disorder.

Figure 2: Behaviors of a media addicted person

According to Greenfield (1999), some important behaviors exist that may not be manifested in school. Factors such as the hours spent online or playing games, secret behavior while online, or experiencing consequences for behaviors can be strong indicators that a student may be technology dependent. Unfortunately, some students can mask this behavior well while leading a secret life of media addiction outside of school.

Which philosophies guide media addiction treatment?

Substance use disorders and compulsive gambling are most often treated with an abstinence model. Eating disorders and sexual addictions are treated most often with a model based on appropriate and healthy limits on the behavior. Technology is a permanent part of our lives, our culture and our civilization. Abstinence from media is probably unrealistic for survival in contemporary society. A developing philosophical model seems to be pointing towards the latter approach. Through counseling and limit setting, those addicted can begin to use technology in a healthy, productive way.

Media addiction awareness is at a stage of understanding that drug addiction was forty years ago. We now have the science of addiction studies to assist us in dealing with this new problem. There is hope and direction from these sciences. Additional research needs to be done as well as awareness.

What is the role of the school in addressing this problem?

Schools are often the window through which problems are seen. Professionals in schools are often the ones who call parents' attention to behaviors that are interfering with social or academic development. In the case of media addiction, schools may not know what the problem is, but they clearly see that something is problematic. Schools can help in several ways:

1. Awareness. They can be aware that the abuse, dependency and addiction to media can occur just as it does with substances. They can be made aware of the likely signs of addiction and how it looks in a school setting.
2. Relate symptoms to deeper problems. Technology is just the medium in which a deeper problem is exposed, just as alcohol may sometimes be the substance used to cover up emotional problems. While schools can't provide the treatment needed, they can make parents aware of problems they are observing, and identify competent resources to help deal with the problem.
3. Communication. As with all problems involving children, schools must communicate with parents to make them aware of behaviors that are interfering with learning.

4. Balanced perspective. While schools should be diligent about noting aberrant behavior, they must also assure parents that such behavior may be caused by any number of things. They need to identify knowledgeable professionals who can spend the time conducting a differential diagnosis of the presenting problems before they jump to conclusions. Because media addiction is similar to other addictions, there should not be a rush to judgment until all aspects of the child's life and personality are examined.

5. Parental Awareness programs. Informational programs can bring parents more up-to-date about computers, the cyber-world, the dangers of unsupervised online activities, as well as media abuse and addiction.

Conclusion

Media addiction may appear under many names such as Internet addiction, computer addiction, cyber-addiction, or technology addiction. Whatever its moniker, media addiction is a real phenomenon for some people. It presents itself with symptoms that are remarkably like other addictions, and it is almost always a mask for an underlying problem. The job of the teacher is to help counselors and parents understand that there may be a problem related to the students' use of technology and to provide support while the abusing students seek the professional help they may need to gain perspective on their behavior.

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NJAET



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NJAET Technologist of the Year



Julie Johnson

South Brunswick School District
2008

Congratulations to Mrs. Julie Johnson, a second grade teacher at Greenbrook School in South Brunswick as our Technologist of the Year 2008. Mrs. Johnson has distinguished herself by assisting a home-bound student to continue his learning through the use of technology while fostering a technology-rich learning environment in her classroom.

During the year a serious medical condition forced a student in Mrs. Johnson's class to remain home. His return was uncertain. Mrs. Johnson and her second grade team, the district's technician, and the child's parents began to look for ways to help him connect to his classmates. They sought to use technology to create a successful distance learning environment. They began with video conferencing during the morning meeting, which is an important part of Greenbrook School's character education program.

The student participated in guided reading lessons, word sorts and book discussions. During group discussions, using a TV connection, Mrs. Johnson's student was able to interact with his "Book Buddy" for real-time discussion.

His distance learning opportunities soon expanded to include *Math for All Kinds of Minds*, science, social studies and Writer's Workshop. In order for the home-bound student to effectively read what was written on the white board in Mrs. Johnson's class, the school district supplied her with an interactive SMART Board. This allowed her to stream curriculum to the student's computer at home in real time.

When the home-bound student was working with his partner on a *Math for All Kinds of Minds* project, his project reflected the objectives of the task as it did for his peers. While this student was learning from home, his partner, usually an easily distracted learner who struggled to complete a task, worked with him from school.

This experience, and the use of distance learning technologies, created an instructional environment where these seven-year-old students were using technology—opening documents, sending files, using presentation software, and planning for ways to use technology to demonstrate their thinking and learning. Other members of the class used paper and pattern blocks, but for this pair using the SMART Board was a benefit to both. The interactive design of the SMART Board helped keep both students focused on their task. Both children were able to see the project, engage in problem solving, make decisions, and assist and assess one another. The result was a thoughtful end product similar to that of their peers. The sense of accomplishment was felt by both. As one of them said of his presentation, "My parents won't believe I did this!"

This same seven-year-old participated in science experiments using weights and balances along with the class. A member of the school community who lived near the home-bound student took him the necessary equipment. The following day, the class and the student weighed and compared items via the connection.

Finally, Mrs. Johnson's class was involved in a class project about the community. As the class completed their PowerPoint projects, the home-bound boy could share pictures with his classmates to complete his project.

When the student returned to school four months later, there was no lag in his learning, no regressions, and no make-up work. Thanks to the skillful use of technology employed by Mrs. Johnson, the student was on par with other students in his class.

NJAET is honoring Mrs. Johnson for her creative and successful use of technology in helping not just the home-bound student, but all her students learn with the use of technology. She serves as a model for all of us and is representative of the many teachers in New Jersey who are helping students learn in exciting ways with technology.

Technology integration at low cost: A reality not just a dream

Franco Paoletti

*East Windsor Regional School District
Hightstown, NJ (USA)*

Lisa M. Carlucci

*Washington Township Public School District
Robbinsville, NJ (USA)*

Abstract

In this ever-changing world, technology is affecting how people view learning and the overall educational process. For an educator, the successful implementation of technology can be one of the most effective tools in the classroom. The introduction of virtual simulations of real life situations into what was once considered a teacher-centered classroom, allows the educator to meet the complex differentiated needs of a multi-faceted student population. In this modified classroom, the focus naturally shifts to the students and their interaction with the rest of the class and beyond. Effective integration of technology literally opens a window onto the outside world providing students with increased motivation and with the necessary expertise to enter the workforce or successfully pursue higher education. This work analyzes the impact of technology, the methodologies currently in use, and advantages and disadvantages, providing examples on how to successfully implement effective programs under budgetary constraints.



Introduction

In this study, we provide an analysis of what “technology integration” into education means, identifying the benefits and the challenges that educators need to meet in order to be successful in their efforts. The major expected outcomes of an efficient application of technology to enhance and support the educational process can be summarized as follows: 1) Provide the professional staff with the knowledge, skills, resources and freedom to actualize innovative educational programs; 2) be successful in challenging each student to reach his/her highest potential to ultimately increase academic achievement.

The study is organized as follows: in the first sections, a general descriptive overview of the theories and issues related to technology integration into education is presented. In the following sections, the importance of acquiring solid grant-writing skills to be able to successfully appropriate funds and/or equipment to support the incorporation of technology into the instructional process is stressed as one of the most important aspects of the process. A practical application of this approach is the recent implementation of a point-of-service computer station built at reduced cost. In the conclusion, a summary of the obtained results and a description of the expected outcomes of ongoing projects are presented.

The ideal setup would be to have the technology ready at all times right in the classroom.

1.0 Technology as a Complement to Instruction

When we talk about technology integration in the instructional process, we refer to the application of all the technology parts, including hardware, software, and all the subject-specific components, to aid both the teacher and the students during the instruction with the ultimate goal of enhancing education. Therefore, technology integration is used as an effective tool to support and complement the instruction to help improve the outcome of each lesson while better meeting the curriculum standards at all levels of K-12 education.

1.1 Computer Labs or Labs with Computers?

The strategy of concentrating all the technology resources in shared spaces often called “computer lab” or “technology center” is now being surpassed by new theories that support a “just-in-time” availability of computers directly in the class. Of course, the format of “media centers” provides a more economical solution and it is usually the most common choice we find in the schools. In addition, from a logistical point of view, concentrating all the resources in central common areas of instruction help technology administrators to better manage and maintain the interconnected network.

One of the main obstacles encountered by most of the teachers often using the single technology center in the whole school is represented by the limited availability of the resources. Computer labs are often booked on a first-come-first-served basis and provide, in most cases, a good opportunity for a break from the regular instruction since they might only be available in time windows where they are not needed. Therefore, in these cases, they are not used as a successful and efficient tool in support of instruction but rather as a form of escape from the routine.

The ideal setup would be to have the technology ready at all times right in the classroom. This is what we would refer to as a realistic and efficient way to incorporate technology into the learning process allowing teachers to switch from one media to another and therefore maximizing efficiency and impact. Not only will teachers have the chance of seizing that time window of opportunity whenever it becomes available but the students will more actively participate and become involved in the lesson since they are using the technologies they are most familiar with since their generation was born in this “era of technology.”

Most conservative administrators would be opposed to this full integration of “just-in-time” technology in the class claiming that it would be outrageously expensive to provide each class with a point of service for technology. As one of our major goals of this applied research study, we will demonstrate that the task could be accomplished with very limited resources.

1.2 A New Era of Instructional Methodologies

When the learning process shifts from a teacher-centered to a more active-interactive student-centered approach, the teachers figure as it was viewed until now should drastically change. In fact, the more conventional scheme of lecture, repetition, memorization and testing is currently transitioning towards an activity/enquiry based approach to learning. As it often happens in the online environment, also in the regular class, the role of the teacher changes from the depository and unique provider of knowledge to a facilitator or leader of the group of learners. In this capacity, the teacher provides guidance, supports students and motivates them, creating and maintaining the appropriate learning atmosphere.

The instructional methodologies of this new technological era are changing towards a setup where the student plays a more active role in the learning process. In this context, several assumptions on both the student and the instructor must be simultaneously verified to allow a successful completion of the learning experience. In particular, the successful students must transition from the passive/receptive state to an active/proactive attitude where they can most profit from

the guidance and assistance of their facilitator/leader. The second and, perhaps, most important assumption, relates to the learning process itself. In fact, in the conventional setup, the learning process often stops at the level of acquisition and storage of information. In the new student-centered approach, students and teachers are working at the same level as it would happen in a research team and assimilate/process information to be used to solve actual problems.

1.3 Obstacles along the Path of Technology Integration

In order to assure a successful implementation of a technology plan in support of the educational process, we have to identify the major obstacles that could arise along the way and propose possible solutions to overcome them. The first and perhaps the most important obstacle to effective technology integration into instruction is represented by limited teacher proficiency and lack of training which, often, is directly related to insufficient administrative support and to the characteristic that we define as “inertia to change” that is common among educators, especially if they always taught the same subject for a number of years. Of course, with proper training and motivational opportunities, teachers should eventually understand that technology can actually assist them in making their life easier, allowing more efficient lesson planning/preparation and tests/evaluation, production that does not necessarily require scissors, glue, paper, and a copy machine.

The other barrier preventing efficient technology use in support of instruction is represented by the limited availability of hardware. Improper choice of computer labs and/or multimedia equipment location often makes teachers’ access difficult and therefore, educators might revert to more traditional (more reliable and always available) methods of instruction with limited technology involvement. Budget constraints are often given blame as the main reason for this lack of hardware availability. In the applied part of this project, we will demonstrate that budget limitations are not as much of a problem as poor planning and inefficient research.

1.4 Technology Integration and the Learning Process

Whenever an educator can associate a learning activity to a real-life situation (s)he is applying the so called “authentic learning” methodology. This approach is usually based on hands-on, enquiry-based activities that follow the structure of the scientific method of investigation. The process involves defining a problem, formulating a hypothesis as a possible solution to the problem, collecting information, analyzing the data to reach a conclusion or make a decision related to an everyday life situation.

A central component in the “authentic learning” set of activities is commonly referred to as “problem-based instruction” where the students use their background knowledge or expertise to understand and possibly solve more complex problems using an investigational approach. This method of learning through discovery and exploration helps to engage and motivate the students throughout the entire learning experience.

In this context, the use of multimedia technologies involving audio-visual-graphics-animations provides the students with the necessary tools to solve higher-order-thinking problems allowing them to build the mental bridges required to discern and analyze complex concepts through critical thinking. Computer based applications which use the resources available over the Internet and the World Wide Web allow access to a virtually infinite amount of information (often too much and sometimes unverified or incorrect). This will, ultimately, help in organizing the work produced in paperless project reports to be posted on a local central repository where they could easily be accessed by the teacher as well as by the other classmates. This “portfolio-like” setup will represent an invaluable resource of exemplary work for other students approaching similar problems.

1.5 The ASSURE Model of Instruction for Effective Use of Technology

The ASSURE model² is a step-like procedural approach to the effective use of multimedia technology in the instructional process. Another method often used by educators to design, produce, and assess the integration of multimedia technology into the curriculum is the DDD-E model (Decide, Design, Develop, Evaluate)³ which is equivalent to the ASSURE model and will not be described in this section.

The first step in the ASSURE model is: Analyze the Learner. It is extremely important for the educator to know the level of proficiency and computer literacy of the students in a particular classroom. Of course, planning and executing the various technology-based activities will vary depending on the skill level of the group of students involved in the learning experience. A successful and efficient technology use in the learning process can only be reached through careful planning and dedicated tailoring of the plan itself.

The second step of the ASSURE model is: **State Objectives and Expectations**. Teachers and students both have to agree on a common ground of expectations and goals to be reached. These objectives should match the targeted curriculum goals and should drive the choice of the materials and media to be utilized.

The third step of the ASSURE model is a natural continuation of Step 2. At this level, teachers should carefully **Select the Materials and Media** to be used during instruction. The instructor should decide which method of instruction to apply which could include a demonstration approach, a tutorial, or an inquiry-based activity. The choice of the method of instruction should then guide the selection of the media required for a successful completion of the learning experience.

The fourth step of the ASSURE model is: **Utilize the Materials and Media** so they could provide the best support possible to the instruction. Here, the instructor should carefully prepare the classroom environment as well as study and evaluate the software to be used or review the audiovisual material to be presented. This will ensure that (s)he will be able to provide the necessary support and guidance to the students during the course of the lesson.

The fifth step of the ASSURE model is: **Require Student Participation**. This is probably the most important step of all. In fact, in order to create an effective and efficient active learning environment, the students should focus on completing the activities while aiming to reach the goals previously set for that particular learning experience.

The sixth and last step of the ASSURE model is focusing on **Evaluation and Feedback**. While the previous step was the most important to assure an active and proactive involvement of all the students in the learning activities, this step is clearly the most important in the process of assessing the effectiveness of the project. A correct evaluation of the learning outcomes of the lesson should also include students' feedback to ultimately provide guidance on how to modify the activities and the use of technology to improve that particular learning experience in the future.

1.6 Securing Funds in Support of Technology Integration

One of the most problematic aspects of a successful implementation of technology integration in the instructional process is securing the funds to support the expenses relative to the acquisition/upgrade of new technologies. Most of the budgets of public school districts are not large enough to accommodate all the requests for technology upgrade at all levels across the curriculum. In addition, since technology (both hardware and software) quickly becomes obsolete, this adds to teacher frustration by those wanting to see a fully functional implementation of technology in support of their instruction. Whether they would like to implement a new program or just stay current with an existing one, they are required to secure independent funding from different sources other than the District itself. In Section 2, an example of a "point of service" technology station recently developed at Hightstown High School, in central New Jersey is presented.

2.1 A "Point-of-Service" Multimedia Center Right inside the Classroom

We selected the implementation of a "point-of-service" technology station as the applied part of this study to demonstrate that limitations in the budget are not the main obstacles to the realization of such projects. The obvious question is: if the District is not paying who is paying for the project? It all comes down to doing good research and spending copious time to secure the equipment.

Most companies and corporations as well as universities upgrade their computer systems often enough to leave behind large stocks of hardware to be eventually discarded. This hardware is not obsolete and most of the time is perfectly suitable to perform the task required during



Figure 1. – View of the Princeton University Surplus warehouse



Figure 2. – View of the “point of service” technology station in one of the science classrooms of Hightstown High School

instruction in a school. Since the cost of computer hardware recycling could be quite high when we are taking about large inventories, companies/universities usually set up donation programs in aid of the local school systems. In turn, this provides them with a tax break.

Our donor institution for this project was Princeton University. Through their “Surplus Donation Program”, Princeton University supports the neighboring school districts with computers, material, office supplies and furniture on a first-come-first-served basis. A picture of the Princeton University Surplus warehouse is given in Figure 1.

In our case, we were able to secure 15 CPUs + monitors + keyboards + mouse + speakers at no cost to the District. The only incurred expenses were related to the installation of the hardware in the classroom, the reinstallation of the operative systems, and the purchase + installation of the required software.

Figure 2 shows the system of computers in its final destination in one of the classrooms of Hightstown High School. This “point-

of-service” station is currently being used to implement the innovative project “Science of the Real World within the Classroom Walls.” In the following section, a detailed description of this project is provided.

2.2 Science of the Real World within the Classroom Walls

The “Science of the Real World within the Classroom Walls” Project is specifically designed to allow participating students to use technology in science as an integral part of their learning. Innovative and alternative ways of learning science are introduced through the use of virtual activities which mimic real work environments in a science related industry or research facility. Students are provided with a realistic overview of what to expect upon either entering the work force or pursuing scientific research. It also provides an increased motivation to pursue studies in the sciences.

The project focuses on the design and implementation of a fully interactive paperless computer-based science program for the English as a Second Language (ESL) Science and Academic/Honors Science courses. The application of interactive technology is most beneficial to the ESL students who can extend, at their own pace, their proficiency of the English Language of Science while increasing their overall literacy skills.

Because science plays an integral part in the high school curriculum, students at all levels are exposed directly to the evolution and application of technology in the classroom through this project. Students are now able to produce presentations and paperless lab reports greatly benefiting by having real-time access to external resources and having direct access to models of exemplary work previously developed. Math, as a necessary tool in the experimental scientific instigation, is fully integrated throughout the project with the use of calculator technology for data acquisition and analysis. Group/team work is also a definite requirement in this type of environment. Students have the unique opportunity to enhance their sense of collegiality. Their willingness to share information and collaborate provides them with a passport into a realistic work environment.

Conclusion

In the first part of this study we address the issues related to technology integration into instruction highlighting the important aspects of the theory and applications most relevant to the presented project. The applied part of this project was aimed at implementing a pioneering “point of service” computer station in one of the classrooms of Hightstown High School. Its successful completion demonstrated the feasibility of this kind of project even in cases where there are severe budget limitations. This computer station is currently being used to implement the innovative project “Science of the Real World within the Classroom Walls.” This project is aimed at providing students with a set of virtual activities that mimic realistic situations of an industrial workplace. This particular setup allows the students to perform virtual lab activities that are an excellent vehicle of instruction and training specifically in the cases where the processes studied are either too complex or too sophisticated to be brought into the classroom environment.

Footnotes

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Making the MUVE



to Virtual Education

INTRODUCTION

Second Life, a 3D multi-user virtual environment (MUVE), is becoming an increasingly popular topic at educational technology conferences and in the media these days. What's all the fuss about?

Imagine entering a virtual environment with a few simple clicks of the mouse, to meet colleagues from all over the world, hold discussions, attend and present lectures or lessons, view media, and exchange ideas as well as materials. Imagine learning which new technologies hold the most promise, and how educators are implementing them in their schools. Imagine having access to a network of educators who are dedicated to formulating best practices in using technology to enhance learning. Imagine forming professional relationships with these colleagues in a virtual world that can transform into real life friendships. All this is literally available at one's fingertips without leaving the comfort of home, school, office, or favorite Internet cafe.

Second Life is a virtual, immersive world in which members, known as residents, not only interact but also create original content. Registration is free, although there are expanded privileges for paying members, and special software (the Second Life "client") needs to be downloaded. As part of the registration process, residents create online identities represented by avatars.

Educators around the world have been exploring Second Life and its uses in education for some time – professional development organizations like ISTE (International Society for Technology in Education) and Discovery Educators Network have a presence inworld, as do an increasing number of universities, libraries and other educational institutions. Individual educators are also setting up shop to share ideas and to create inworld resource centers.

There are many reasons to try Second Life. This article focuses on ways in which educators engage in the environment, including:

- Expanding one's professional network
- Innovating and exploring
- Professional growth
- Developing leadership skills
- Having fun!

EXPAND PROFESSIONAL NETWORKS

A virtual environment like Second Life can be a powerful social network for educators. One of the pleasures of spending time in Second Life is the serendipity of meeting new and interesting people. Education areas, like ISTE Island, Discovery Educators Network (DEN), and New Media Consortium (NMC) offer educators places to explore, create, and learn together. Community is built around interests and a willingness to share and learn together – as Marianne Malmstrom, aka KnowClue Kidd, likes to say, "Second Life is a virtual brain trust." One of its great strengths is that interactions regularly occur across a variety of ages, institutions, and cultures.

For example, Susan Toth-Cohen (Zsuzsa Tomsen) met a fellow educator from the University of Plymouth in Devon, England in a chance encounter at a Second Life mall. They began a conversation that eventually led to a collaborative project, the Sexual Health SIM described at: <http://sl-sexualhealth.org.uk>. These happy accidents occur frequently in Second Life; people come together to discuss and create new venues for education, opportunities across time and space that are less likely to occur outside of Second Life, if at all.

Educational organizations help facilitate these connections. Jennifer Ragan-Fore, the project director for ISTE's Second Life Program, notes that "The unique opportunity for membership-based organizations like ISTE and our Affiliates is the potential that Second Life offers



ISTE headquarters in Second Life

for deepening our infrequent face-to-face encounters with regular, real-time conversations, projects, and relationship-building. Our annual NECC conference offers important opportunities for members to network and connect with

fielding private questions, maintaining complete transcripts of presentations and questions afterwards to use for assessment and follow-up, and opportunities to create and build resources together in real time or over time. Second



Life is ideal for creating simulation projects and role playing. Participants are not bound to “brick & mortar” space; groups can travel to virtual locations and experience full sized 3D models of tsunamis, visit a holodeck for a virtual field trip around the world, or simply fly back in the time and explore the Renaissance. Try doing that at a conference or classroom in “real life!”

Second Life truly promotes active engagement and learning by doing and interacting with others. An unexpected advantage of being involved in Second Life as a MUVE (similar in some ways to WoW www.worldofwarcraft.com and Sims <http://thesims.ea.com/us>) is that it raises one’s “cool factor” with students. It also serves to give teachers perspective into the experiences of children and young adults who are sometimes called “digital natives.”

other educators, and our Second Life project provides the regular care and feeding needed to keep those relationships going strong year round.”

These include a better command of chat shorthand and a deeper understanding of the power of social networks. In addition, becoming more conversant in virtual worlds has the effect of leveling the playing field and may help students see teachers more as partners in their learning, and not adults who completely lack insight into their worlds (Second Life is available for adults age 18 and older; the Second Life Teen Grid is a community for 13 – 17 year olds).

INNOVATE AND EXPLORE

Second Life provides educators with new ways to learn and teach. Everyday tasks are transformed and become more fun. For example, presenters can lecture, show and discuss slide shows, video and audio clips and distribute handouts in ways similar to real life conferences and courses. Second Life facilitates interactions with one’s audience and students through instantaneous communication using text or voice, sharing Internet links,

PROFESSIONAL GROWTH

Second Life provides many of the same venues for growing professionally that real life (RL) affords. This includes

“...becoming more conversant in virtual worlds has the effect of leveling the playing field and may help students see teachers more as partners in their learning, and not adults who completely lack insight into their worlds...”

presenting at conferences as described above, attending seminars and professional development workshops, working on collaborative projects, and conducting special events such as a virtual backpack safety awareness campaign led by Susan Toth-Cohen and collaborating on publications such as this article.

In addition, Second Life helps teachers build 21st-Century skills by allowing them to explore new ideas and practices among colleagues in a supportive, cross-cultural arena.

Conferences and presentations bring colleagues together from around the world. For example, “Second Life Best Practices in Education,” an international conference, was held in May 2007 across a number of different sites inworld. 1300 educators from all over the globe attended the event to hear keynote/academic presentations, attend exhibits, participate in social events, and meet vendors from RL (real life) and SL (Second Life). Other

educational organizations, like ISTE, offer regular series of presentations and learning activities for continuing professional development.

DEVELOP LEADERSHIP SKILLS

Multi-User Virtual Environments are here to stay, that much is certain. Their role in education is rapidly evolving. Second Life has attracted the attention of K-20 educators who are using it for professional development (e.g., Kathy Schrock’s Lighthouse Learning Island: <http://nausetschools.org/lighthouselearning>) as well as day-to-day classes (e.g., Beth Ritter-Guth’s work: <http://colleageenglish.wikispaces.com/SecondLife>), not to mention social networking (<http://www.iste.org/secondlife>). Other educators have taken on leadership roles by teaching skills to colleagues, helping them build and create learning, and volunteering to share their expertise in other ways.



Lounge area at headquarters



Educators can take advantage of scheduled activities, but it's also fun to explore on one's own: hang glide, surf, skate, fly around, play games, and explore. On Genome Island, visitors can interact with a 3D cell. Travel to various parts of the globe - visit a virtual reality room (VRR) and click to the top of the Eiffel Tower and try out your French. Visit Tokyo, ancient Rome, explore oceans and the cosmos. Create something special - become a better teacher by revisiting the role of learner! Second Life is the perfect place to do just that.

CONCLUSION

Second Life has tremendous potential for educators. There is a learning curve to be sure, particularly for those who are new to virtual environments. A number of online tutorials and other resources are available to help newbies get started and learn more about how Second Life can enhance education. Once inworld, educators can find colleagues who are willing to help provide more of an orientation. ISTE in Second Life is a great place to start: <http://slurl.com/secondlife/ISTE%20Island/93/83/30>.

Enter a 3D environment and suddenly colleagues are face to face with visual representations of the people with whom they are communicating and interacting in a space that allows for shared experiences. It seems far more

KittyGloom Cassidy (Jennifer Ragan-Fore, Director, ISTE General Membership Program) having fun in the virtual snow

Educators who learn about this environment continue to build their credentials as technology leaders and can help champion its use, or at the very least, become a school or district expert on its strengths and limitations.

HAVE FUN!

Second Life provides new ways for educators to have fun by learning new things. Activities include developing skills to create virtual objects ("building") and writing programs to make objects interactive ("scripting"). There are many educational sites to see and interact with, as well as cultural events such as concerts and museums. Moreover, the prospect of sharing these new experiences with peers and students and capitalizing on them to create learning activities that are both fun and educational adds an extra dimension to the enjoyment. For example, every other Sunday one of ISTE's docents, Esme Quanha, guides educators on tours to interesting places all over Second Life.



ISTE sponsors "movie night" showing Machinima created by members at a drive-in movie setting

engaging to talk with a colleague “avatar to avatar” instead of just reading text, viewing video stream, or hearing their voices. Interacting in a common environment can feel more engaging and draw participants deeper into the experience.

There is something enticing about interacting with others in environments that appear to be both familiar and, at the same time, extraordinary.

LEARN MORE

Listed below are additional resources for learning about Second Life and education (These are available online at NJAET as links):

Educational Uses of Second Life Video:

<http://www.youtube.com/watch?v=qOFU9oUF2HA>

Educational Uses of Second Life Wiki:

<http://slededucation.wikispaces.com/educationaluses>

Global Kids Online Leadership Program:

www.globalkids.org

Lighthouse Learning Island:

<http://nausetschools.org/lighthouselearning/index.htm>

Literature Alive! In Second Life:

<http://literaturealive.blogspot.com>

Literature, Pedagogy and Second Life:

<http://nicosiapedagogy.blogspot.com>

Scott's Second Life:

<http://scottsecondlife.blogspot.com>

Second Life educators list:

<https://lists.secondlife.com/cgi-bin/mailman/listinfo/educators>

Second Life Education Wiki:

http://www.simteach.com/wiki/index.php?title=Second_Life_Education_Wiki

Second Life Education Wiki - Working with Teens:

www.simteach.com/wiki/index.php?title=Second_Life:_Educators_Working_with_Teens

SLED Picayune:

<http://sledpicayune.blogspot.com>

Sloan-C SL Net:

<http://sloancslnet.ning.com>

Story of My "Second Life":

www.storyofmysecondlife.com

Suffern Middle School in Second Life:

Taking Your First Steps in Second Life

By Kevin Jarrett

Ok! So you're ready to take the plunge and try Second Life out for yourself. Terrific! It's easy to get started.

BEFORE YOU BEGIN: Check the system requirements (<http://secondlife.com/corporate/sysreqs.php>) to determine if your machine is up to snuff. Second Life needs a fairly modern computer and reasonably powerful graphics card to run smoothly. If you're unfamiliar with these technical terms, find someone who is and get their help. Second Life will work on older, less capable machines but the experience will be much less enjoyable. Don't worry, if you have a machine less than two years old that has a dedicated graphics card (in other words, the system doesn't have "integrated graphics" or "motherboard graphics") or if there's any reference to ATI or NVidia chipsets in your system specs, chances are you're okay. If you or your kids play ANY fairly recent games on the computer (especially 3D games) you'll be fine.

WHAT'S IN A NAME? Ok, you've found your way to www.secondlife.com and pressed 'Sign Up.' You now have to choose a name for your avatar. You can have any first name you want but your last name must be among the choices provided. **IMPORTANT:** this can't be changed, and although you may create more than one account (called 'alts' for 'alternate' avatars), you'll want to choose your name wisely. Pick a first name you are comfortable being addressed with. Case in point: my first avatar is named "Digital Mincemeat." I quickly grew tired of being called "Digital" and created my second and current avatar, "KJ Hax."

CHOOSE A LOOK AND ENTER YOUR ACCOUNT DETAILS. You'll be presented with a series of choices for your basic appearance. Don't worry, you can change everything - **AND WE MEAN EVERYTHING** - later. Just pick one and go. Fill out the rest of the form. Yes, your real life credentials are required! Don't bother with choosing the 'Premium' (for pay) account option, you can always do that later.

Continued on page 22...

Getting Started in Second Life:

Second Life for Dummies by Sarah “Intellagirl Tully” Robbins and Mark “Typewriter Tackleberry” Bell (2008), Wiley Publishing: Hoboken, NJ.
Torely Linden’s Video Tutorials: www.youtube.com/user/Torley



A building class in Second Life



A building class in Second Life

Taking your first steps continued....

YOU’VE GOT MAIL! Check your email for an activation message, click the link, then download the software. Install it, log in with your avatar name (first & last) and the password you chose. When prompted, try to choose an orientation location OTHER THAN a regular Linden Lab “Orientation Island.” My personal favorite: Ben & Jerry’s! You’ll find fewer people at these custom-branded orientations and will be less likely to encounter people who, sadly, think it is fun to tease “newbies” as they show up for the first time in Second Life. It happens - just ask Kathy Schrock!

GET THEE TO ISTE! As soon as you complete the orientation, use the SEARCH feature (be sure you’re on the ‘Places’ tab) to locate ISTE Island. Teleport over! (You can also click this link: <http://tinyurl.com/yud38g>.) You may find some avatars there to converse about the eDocent schedule (on an easel board near the front desk). You’ll be able to see when you can expect to come back and find an ISTE volunteer who will be happy to assist you with everything from the basics (sitting, walking, flying) to finding free items, customizing your appearance and finding cool educational places to visit. Feel free to wander around the island and explore. Set a landmark so you can return easily (click the ‘World’ menu at the top, then, ‘Create Landmark Here.’).

You’re on your way! All you need to do now is join ISTE in Second Life (it’s free, just search using the ‘Groups’ tab and press *Join for \$0*). Then you’ll get notices of upcoming events and more.

See you in Second Life!



MEET THE AUTHORS



Future of 3-D Worlds: <http://metaverseroadmap.org>

The authors of this article are NJAET members who initially met in Second Life through ISTE, a vibrant network of over 2,200 educators who meet, network, explore, and learn together in Second Life. More information about ISTE in Second Life can be found here: www.iste.org/secondlife.

Kevin Jarrett (KJ Hax) is a K-4 Technology Facilitator at Northfield Community School in Northfield, New Jersey. He also teaches online, part-

time at Walden University's Graduate School of Education. In Second Life, he is an ISTE docent and also currently chairs the ISTE Second Life Speaker Series program. He volunteers on the Teen Grid at Peggy Sheehy's Ramapo Islands (<http://ramapoislands.edublogs.org>) project. He blogs about his Second Life experiences at www.storyofmysecondlife.com.

Caren Levine (Claird Loon) is an educational consultant based in northern New Jersey. She serves as lead docent for ISTE in Second Life.

Marianne Malmstrom (Knowclue Kidd) is a middle school technology facilitator at The Elisabeth Morrow School in Englewood, NJ. In Second Life, she is an ISTE docent, runs Project Theater and the Multimedia Works group. She advises FireSabre Consulting on its Teen Second Life Project, Virtual World Campus. www.knowclue.com

Fil Santiago (Sabian Hawks) is a K-12 Technology Integration Specialist for the West Orange Public Schools in West Orange, NJ. He serves as an ISTE docent in Second Life.

Susan Toth-Cohen (Zsuzsa Tomsen) is a faculty member and program director at Jefferson College of Health Professions in Philadelphia. In Second Life, she is an ISTE docent and runs the Occupational Therapy Education Center in Eduisland II.

This article was written collaboratively over a period of weeks using Google Docs. For more information about Google Docs, visit <http://docs.google.com> or contact the authors.

“Multi-User Virtual environments are here to stay, that much is certain. Their role in education is rapidly evolving.”