Technology at Wesleyan Christian Academy

Skype, Twitter, iPad, Netflix, YouTube Snapcat, Smartphone, iCloud, Facebook, Instagram – these are just a few words of technology jargon that are easily recognized in today's culture. From the youngest of children, a parent will find quick direction in how to operate his or her new technological devices such as a smartphone or iPad. This knowledge seems to be innate in our children. How do they know so much about technology at such a young age?

The inventions and improvements of technology throughout centuries have been vast, and many of these have made it relatively easy to gather needed information, connect with family and friends all around the world, or for just pure entertainment. Throughout history, the God given inventions of man have made a dramatic impact upon life as humans once knew. Edison's light bulb, for example, opened up many more opportunities for humanity. Few would want to go back to life without light bulbs and nearly all human kind would view this technical advance as a wonderful and "good" thing.

When talking about technological advances, it may be helpful to distinguish between the technical and moral dilemmas they bring. Technology is a wonderful Advancement that has already substantially influenced most of our lives. Christians rightly acknowledge it as yet another kind gift from the hand of the Lord. While it is within the technical discourse profoundly good, within the moral discourse it is neither good nor evil; it is amoral.

Therefore, Christians know that such technology is neither a savior nor an inherent evil. Thus in our fallen world, we want our children to be directed in the beauty and opportunities for good that this technology brings them and be keenly aware of the dangers the same affords.

With this in mind, we must ask ourselves the following question…is the constant barrage of quick information gathering helping or hurting our children's learning process? The Internet has become the primary source for information gathering. Enter a library and you seldom see a student working on an assignment with piles of books, newspapers, or magazines. Instead, that student is seated in front of a computer. No need for pen, paper, and dictionary - the computer provides all that is needed. The Internet certainly has become the medium of choice for information gathering.

You may be asking yourself, is the internet a poor way to do research? Is not the quick and instantaneous gathering of information helping our children to be more efficient with their time and even more intellectual?

In his book, *The Shallows…What The Internet is Doing To Our Brains,* Nicholas Carr states the following:

> "The Net seems to be chipping away at our capacity for concentration and contemplation…the more we use the Web, the more we have to fight to stay focused on long pieces of writing." This quick, convenient way of gathering information, on the surface, seems to make sense as being very efficient and productive; however, scientists are discovering that its constant use changes the way a person thinks. Carr refers to University of Michigan faculty member and blogger, Bruce Friedman, who stated this about his own mental alertness after years of internet use, "I now have almost totally lost the ability to read and absorb a longish article on the web or in print. My thinking has taken on a "staccato" quality. I can't read *War and Peace* anymore. I've lost the ability to do that. Even a blog post of more than three or four paragraphs is too much to absorb. I skim it" (p. 7).

The constant use of the Net seems to also greatly impact linear thinking. Reading a book promotes the linear thought process. Reading an article on the Web with all its hyperlinks tends to make one scattered in his or her thinking. There seems to be a loss of patience with most who try to simply read a book, so instead they find themselves reading a short web article or post. Carr addresses this problem by stating that the "calm, focused, undistracted, the linear mind is being pushed aside by a new kind of mind that wants and needs to take in and dole out information in short, disjointed, often overlapping bursts - the faster, the better." According to Carr, the linear, literary mind that has for centuries been at the center of art, science, and society, may soon be yesterday's mind.

Back as early as the 1800s, experts began to discover the plasticity of the brain. Plasticity or neuroplasticity describes how experiences reorganize neural pathways in the brain. In his book, *Principles of Psychology*, American psychologist, William James wrote, "the nervous tissue seems endowed with a very extraordinary degree of plasticity; either outward forces or inward tensions can, from one hour to another, turn that structure into something different from what it was." Carr admits that through the years, it has "been hard to discern the influence of technologies, particularly intellectual technologies, on the functioning of people's brains. We can see the products of thought – works of art, scientific discoveries, symbols preserved on documents - but not the thought itself." However, in dozens of more recent studies, the same conclusion is always drawn: "when we go online, we enter an environment that promotes cursory reading, hurried and distracted thinking, and

superficial learning." <u>Due to the Internet's "repetitive, intensive, interactive, addictive stimuli", it has been proven to deliver "strong and rapid alterations in brain circuits and functions."</u> When the (information) load exceeds our brain's capacity to store and process the information, we are unable to retain the information or to draw connections with the information already stored in our long term memory. We can't translate the new information into schema. Our ability to learn suffers, and our understanding remains shallow.

In the 1980s, schools around the country began investing in computers and experts believed that hyperlinks would do nothing less than promote learning and students would become greater intellects; however, the opposite was discovered. Studies showed that students who used the hyperlinks stayed very distracted and could not retain the information that they read. In fact, researchers worked with two groups, who were asked to answer a series of questions by searching through specific documents that they were given. One group used an electronic hypertext document, while the other used traditional paper documents. The results showed that the latter group outperformed the hypertext group. It was also discovered that the hypertext readers often forget what they had and had not read. Hypertext also appears to affect a person's comprehension. In one study, the researcher found that "comprehension declined as the number of hyperlinks increased." The readers were so busy worrying about all of the links that they were unable to take the time to try to comprehend what they were reading.

In the year 2013, America's educational system, including public, private and charter schools are greatly emphasizing the role that technology will play in the learning process of their students. The administration and faculty at Wesleyan has taken a considerable amount of time and research to study the effects technology has in our classrooms. The results from the studies named in this document along with other research have led us to be very intentional with the role of technology and hand-held devices at Wesleyan.

Our students continue to have access to and benefit from some of the latest technological advances, but we deliberately choose a controlled classroom or lab environment as the method to broaden their exposure and increase their understanding of utilizing technology. In other words, you will not be likely to find our students walking around campus with hand-held devices checking in on their social status. It is also doubtful that we will throw out textbooks, novels, or libraries as some schools are dangerously choosing to do.

The technology at Wesleyan that is already in place or in route includes: iPads in the Enrichment Center, mobile Mac and iPad carts, two labs including both a Mac and Microsoft platform, and Panaboards and document cameras in most classrooms.

Because our vision demands us to pursue God's excellence in all matters, the administration and technology staff have spent a considerable amount of time researching and visiting some of the leading high-tech private institutions in the region which has led us to be more intentional in articulating how we both define and integrate technology at Wesleyan. Below you will find a few of our beliefs:

- Wesleyan believes that technology is an incredible resource in which to encourage and expand learning efficiencies.
- We believe that parents should rightly expect a safe academic environment in which their student can research, learn, explore, and navigate the web.
- We believe our students need to have access to some of the latest technological advances and also demonstrate strong competencies in an increasingly technologically global society.
- We believe that technology does not replace the effectiveness of human interaction and personal interaction.
- We believe teacher interaction to be instrumental in a student's ability to learn and thrive intellectually as well as relationally.
- We value the dynamics of vocalized communication that expresses genuine empathy, emotion, and reflection.
- We value employing reasoning and analytical skills and the ability to demonstrate understanding of said skills over total reliance of technologically acquired solutions.
- We believe students need periods of time in which they "unplug" from technology. We must guard against compromising a student's ability to learn due to overexposure to online stimuli.
- We believe in nurturing our students' cognitive development without consigning their minds to externalized problem solving.
- We believe our students sustainable success will largely be measured by the expansion and retention of their personal knowledge and a genuine ability to communicate effectively and relate well with others.
- We are supportive of and implement several STEM (science, technology, engineering and math) initiatives throughout the campus.
- We embrace technology as a tool to facilitate learning and preparedness for our students to positively impact and excel in the world in which they live.
- We believe our technology philosophy and integration reflects good fiscal stewardship with the resources God has given us.

A summary

Elementary School
Pursuit of Knowledge

Wesleyan has utilized a comprehensive computer curriculum guide for our elementary students since 1998. Our goal is two-fold: provide our kindergarten through fourth grade students exposure to foundational computer knowledge and navigation while also strengthening their core academic competencies in reading, spelling, math, and keyboarding skills. Wesleyan utilizes specialized educational software that initiates an individualized review strategy for each student, allowing the student to work at his or her own pace. The lab provides a natural progression of learning allowing students to work beyond their current grade level. An interactive art program encourages students to explore and express their creative side, fostering their expanding artistic imagination. All elementary students attend weekly classes in their own dedicated computer lab and have consistently demonstrated accelerated competencies in core educational criteria. The elementary school will also be implementing an Apple MacBook Learning Lab in the fall of 2013 and seeking funding for a K-8 STEM lab to inspire both a collaborative and hands-on environment.

Middle School Pursuit of Competence

The goal of our dedicated middle school lab is for students to gain proficiency in the necessary computer skills required to successfully navigate in and contribute to an ever-increasing technological society. Students will continue advanced keyboarding begun in elementary school for a total of six years exposure, while also developing necessary skills in word processing to support their maturing scholastic requirements. Students will leave middle school with an efficient and effective understanding of Word, Excel, PowerPoint, Internet research and appropriate technological use practices. The opportunity for electives in Photoshop and Basic programming are also provided to students who have interest in those technologies. The middle school has a lab with a full Mac environment. They are also partnering with the elementary school in seeking funding for a K-8 STEM lab.

High School Pursuit of Advancement

Students are exposed to interactive media, hands on learning and guided discovery opportunities as they acquire the necessary prerequisite skills to compete in a technologically immersed world. Several STEM initiatives throughout the science and technology departments allow exposure to the ever-changing technological advances without limitations associated with school-issued personal devices destined to become outdated and/or obsolete.

References

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