

TECHNOLOGY IN EDUCATION: A STUDY IN ATTITUDES AND LEARNING
STYLES

A Paper

Presented to

The Department of Instructional Design and Technology

EMPORIA STATE UNIVERSITY

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

by

Benjamin J. Myrick

May 2006

Dr. Armand Seguin, Chair

Dr. Jean Morrow

Table of Contents

Chapter 1	
Introduction.....	1
Background.....	1
Research Problem.....	2
Chapter 2	
Review of Literature.....	3
Technology Integration.....	3
Technology and Motivation.....	4
Technology and Learning Styles.....	5
The Future of Technology in Schools.....	5
Chapter 3	
Design Model.....	8
Overview.....	8
Analysis.....	9
Instructional Goals.....	9
Design.....	10
Learner Profile.....	11
Tutorial.....	11
Learning Styles.....	12
Development.....	13
Implementation.....	13
Evaluation.....	14
Chapter 4	
Results.....	16
Chapter 5	
Conclusion.....	18
References.....	21
Appendix A.....	22
Appendix B.....	23
Appendix C.....	24

Chapter 1

INTRODUCTION

Background

In thinking back over my scholastic career many memories fill my mind. Best friends and field trips stand out among the rest. But one of the most vivid memories I have of elementary school isn't a sight or a smell, but a sound. I can remember hearing the sound of the audio tape that accompanied the film strip projector; specifically I remember the beep that cued the operator to advance the filmstrip. It was distinctive. I recall the excitement of something different. The class gathered around the screen and I waited anxiously for the ancient filmstrip to begin. This was my first experience with technology in education. I'm quite sure that my teacher received no mandate to show us those films, but she knew that they would interest the class. It is amazing to me that those early experiences stand out for me when I likely spent 1000 hours completing worksheets and working out of workbooks for every hour I spent operating a computer. This is partially due to the fact that my classrooms didn't even have computers until I was in high school. Nevertheless, the time I did spend engaged with technology motivated me. Technology had that effect on me even then. Stemming from my own experience, a natural question arose. Does technology have this same effect on all students, or was it just me? Did the film strip tape stick with me because I am an auditory learner? These issues came into sharper focus for me when I took over teaching a course called explorations in technology. In this setting the integration of technology is mandated and I wanted to gather data to support my intuition that technology does positively impact students.

Research Problem

I am required to introduce technologies to my students and I wonder whether or not the new “toys” help students learn. My specific classroom setting is different than most. In my class, explorations in technology, the program standards are the various technologies. Word processing, presentation, and spreadsheet software are almost the entire curriculum. So my job is to integrate math, science, social studies, and reading and writing into technology and not the other way around. I have a unique problem; the traditional classroom teacher has the challenge of preparing students for state assessments while also trying to throw in technology wherever possible. So, if ever a scenario existed where research could be conducted to measure the effectiveness of technology, it is mine. My project deals with an exploration of the effectiveness and pedagogical soundness of integrating technology into education. The identified problem is that technology integration is mandatory in my teaching situation, and I want to conduct research in an effort to demonstrate that the effective integration of new technologies results in increased performance and achievement on the part of my students.

If I can demonstrate that the technologies I currently utilize do positively impact student achievement, then not only do I have job security but a justification of why my school board is investing in hardware and software and a springboard from which other teachers might benefit as they struggle to leave no child behind. Many people have an almost blind faith that technology is the answer to so many problems. Is it the answer to the problems that plague education? Does putting a laptop in the hands of every student really make a measurable difference in student achievement?

Chapter 2

REVIEW OF LITERATURE

Technology Integration

We live in the digital age. Technology is everywhere. Hardly a moment goes by where we are not bombarded with it. Technology in education is among the most hotly debated topics in recent years. School districts around the globe have scratched together their nickels and dimes and have invested heavily in technology with the hope that the investment would yield achievement dividends. Pouring money into tangible technologies is en vogue. Propelled by federal, state, and local initiatives, K-12 schools spent an estimated \$6.9 billion in 1999 on desktop computers, servers, routers, wiring, Internet access, software, and everything else involved in making modern technology available (Gordon, 2000). That number only figures to go up. In my own school district in Wichita, Kansas, \$2.5 million is being spent to equip just the middle school technology labs with up-to-date equipment from 2005-2008. Along with that heavy monetary investment comes a charge to utilize the new equipment effectively and demonstrate results. So if I am required to put all of this hardware into my curriculum, where is the research to support such a mandate? The truth is my research yielding little in the way of academic evidence to back the dollars being spent. All the research I've read asserts that technology has the potential to revolutionize education, but several things need to happen before the full potential of technology in education can be realized. Until these things do happen, the fortunes that have been spent will gain school children little or no measurable advantage.

Technology and Motivation

One key issue in the technology debate is motivation. If technology can increase the drive of students to achieve then the investment of money makes sense. Research falls on both sides of the fence on this issue. Heafner (2004) conducted research that supports the claim that technology improves motivation, which, in turn, improves student performance. It points to some key features.

Technology empowers students by engaging them in the learning process.

The nature of the task shifts from teacher centered to student centered.

Given the flexibility of technology to diversify tasks, the activity was designed to build students' prior knowledge and to address student interests. Research indicates that challenging and engaging tasks that build upon students' prior knowledge and enable students to construct their own understanding of the content are more apt to enhance student motivation and increase student self-confidence in their cognitive abilities

According to Heafner (2004) technology improves student interest due to familiarity and natural affinity for computer-based instruction. The same study also warns that technology by itself does not improve student performance. In fact, it can have several negative effects on learners including isolation and a belief that all information coming from a computer is good information. However, Heafner (2004) does support the use of technology in conjunction with a variety of sound teaching strategies, methods, and practices to engage students in challenging and diverse educational tasks.

Technology and Learning Styles

Differentiated instruction is a concept that all teachers are familiar with and very few attempt to implement in the classroom. Most educators would say that, in theory, differentiated instruction is ideal. In practice I find that designing lessons that are rigorous and tailored to the needs of each of my students is often beyond my abilities. Gibson (2001) has conducted research in this area and suggests that technology can enable teachers to create dynamic classrooms where students achieve regardless of preferred learning style. Gibson (2001) also indicates that student needs should drive the integration of technology in education and that many barriers exist that deter educators from effectively using new tools when designing instruction, primarily a didactic approach which reduces learners to mere sponges soaking up whatever knowledge they can from their seats. He concludes that a paradigm shift needs to occur in how teachers teach so that technology can be integrated into student-centered learning environments for maximum positive impact on achievement.

The Future of Technology in Schools

Most of the research is written with a tone of guarded optimism. Many feel that thus far educators have missed the boat with technology in schools. One only needs to look back at past technological innovations to see that a pattern of ineffective application in the field of education exists (McKinnerney, 2004). Many believe that pattern will be broken, must be broken. Gordon (2000) notes that:

Certainly, interactive, networked, portable technologies have potential as educational tools beyond that of static materials like pencils or books, or broadcast media like radio and television.

When used by knowledgeable teachers in a supportive educational context, these new technologies can significantly enhance teaching and learning.

However, Gibson (2001) puts it another way:

To suggest that simply using technology will bring about all needed changes in education is simplistic. The presence of technology alone will not change schools. But technology integrated into effective learning environments by reflective and flexible educators will assist in the restructuring of classroom practices for the benefit of all learners.

The emerging theme was that the first step in realizing the potential of modern technologies in education is to fundamentally change the way teachers teach. This would necessarily include radical changes in pre-service teacher training as well as extensive in-service teacher training. Gibson (2001) described a continuum within which classrooms fall. On one end is the teacher-centered classroom. In this setting instruction generally consists of some combination of lecture, drill and practice, whole-group activities, rote learning, and workbooks or worksheets. He states that technology in this setting is no more than a tutor, and on its best days is used to make lectures more visually stimulating. On the other end of the spectrum the focus is not instruction, but rather, the construction of knowledge. Teaching is de-emphasized and learning is emphasized. These classrooms are student-centered. In this setting, technology takes on the role of tool as opposed to

tutor. Technology provides learners with access to information, expert communications, opportunities for collaboration, and a medium for creative thought, expression and knowledge construction (Gibson, 2001). A move away from more traditional methods of information delivery would seem to multiply the benefits of technology in the classroom. The hot-bed of technology in America is in Southern California. In an area nicknamed Silicon Valley, a research study was conducted in an effort to explore the issue of technology integration (or lack thereof) in education. This study was centered not on students, but teachers. Hernandez-Ramon (2005) found that the key to unleashing the power of technology in education is literally teachers relinquishing their power in the class to a degree. Several conditions were identified as needing to be in place in order to see effective technology integration. These include: changing teacher beliefs about teaching and learning, sufficient and accessible equipment, placement, computer access at home, long-term planning, technical and instructional support, and technology integrated within the curricular framework (Hernandez-Ramon, 2005).

This research suggests that a paradigm shift in how teachers are taught, and then teach, is one of the critical issues to consider. Statistically, Hernandez-Ramon (2005) found that 72.5% of the teachers he surveyed who had been exposed to technology in their pre-service training utilized computer-based projects in their classrooms. This compared to only 57.6% of teachers surveyed who integrated computer-based projects in their classrooms and were not exposed to such activities during pre-service training. The numbers speak for themselves. Training teachers to use technology leads to the increased use of technology as a teaching tool.

Chapter 3

DESIGN MODEL

Overview

The design model used for my experiment was an adaptation of the ADDIE model. This model was selected for its flexibility. My application of this model was a little short on the analysis phase. The other phases were carried out in full. The idea was to first identify the preferred learning style of my kids through the completion of an on-line survey. Next a brief survey would be given to ascertain the comfort level of my students with technology, specifically computers. Then a lesson on Microsoft Excel would be taught. One group would receive instruction in a whole-group setting as I demonstrated the necessary skills to complete the project. The second group would complete the same project on Excel, but the instruction would be delivered via video tutorial. Both groups would be scored on the same rubric. The scores would then be compared to see if any statistically significant differences exist. I also checked for a correlation between learning style and instructional delivery method. My hypothesis was that visual learners would perform better than auditory learners, and that the control group would score slightly lower than the experimental group. The idea being that the new technology would provide additional motivation for my students resulting in improved performance. Visual learners might perform better being that the tutorial was a visual medium. Also, the video tutorial would allow the more autonomous learners in my class to move at their own pace. This should improve their overall perception of the project since they will not be restrained by other student's questions.

Analysis

In analyzing this problem it became clear that the needs assessment had to do more with me than with my students, who were the target audience. The need was mine, and it could best be described as a felt need. A felt need is a desire or want that an individual has to improve the performance of a target audience (Morrison, 2004). In this case my desire was to improve the performance of my students by adding new technology into a project. Morrison (2004) suggests that the best way to identify possible solutions for such needs is through interviews and questionnaires. As I pondered how best to assess my students' technology skills I decided I should follow the experts' advice, so I settled on a pair of surveys. The first would be a learning style survey. This would serve to identify the dominant learning mode of my students. This is good information to have in general, but I wanted to see if learning style was in any way connected to the results of my research project. The second was a technology survey. The technology survey was needed in order to determine what prior knowledge my students had regarding the software and hardware necessary to complete the project.

Instructional goals. Both surveys, being targeted toward a group of 6th grade students, needed to be fairly simple. It was easy enough to find an on-line learning style inventory that would give me a rudimentary idea of how my students learned best. The technology survey, while it needed to reveal areas of technical strength and weakness, it also needed to be short enough to be completed within a single class period. I settled on a basic yes/no question format to increase the validity and reliability of the data. The survey was constructed and administered without incident. From this data I designed the

following instructional goals. First, the students will select the appropriate tools to complete the project within a predetermined time frame. And second, the students will demonstrate technical proficiency with the software package by accurately using it to create an exact replica of the modeled end-product.

Design

With the instructional goals in mind, and with a very full scope and sequence for my class, I selected a project that fit into the program standards for my course. The students that enter my class in the 6th grade have vastly different experiences with technology. Some of them are very proficient and some are computer novices. The elementary feeder schools approach technology education in different ways. Of the software used in my class, the greatest discrepancy seemed to be in Microsoft Powerpoint. Some of my students had extensive experience and others had no experience at all. As this represented a variable I could not control, I selected Microsoft Excel instead. This software generally isn't used in the elementary schools, so all of the students who completed the project started on a relatively level playing field. The desired outcome of the project was to isolate technology as the factor that resulted in improving student performance. So every effort was made to control as many variables as possible. A control group and an experimental group were selected. The project requirements were the same and each group was given the same amount of class time for completion. Each group was scored on the same rubric. The difference was in the method of instructional delivery. In the control group instruction was delivered in a whole-group setting. The lessons were teacher centered and lecture was the primary

mode of information dissemination. Each necessary skill was demonstrated both visually, via LCD projector, and orally, through direct instruction. In the experimental group the instruction was delivered individually via video tutorial. This added technology guided the students through the project. The tutorial mirrored the whole-group instruction received by the control as closely as possible. For both groups I made myself available to answer individual question as needed.

Learner profile. The population analysis of students who were involved in this project revealed that all were sixth graders in good academic standing. The control group and the experimental group had approximately the number of participants. There were 22 students in the control group, of which 13 were males and 9 were females. In this class 3 students were identified as being special education students. All of the students were 12 or 13 years old and they were all native English speakers. The experimental group had 21 students. That class had 11 boys and 10 girls with 6 students being identified special education students. The age range was the same. All of these students were native English speakers as well.

Tutorial. In designing this project I settled on utilizing a video tutorial for a variety of reasons. The creation of video tutorial represented new technology for me creating a level of enthusiasm on my part. And, it lent itself well to being the delivery method modification while also being the representative technology difference between the control group and the experimental group. The technology survey indicated that none of my students had ever used a tutorial in class to complete an assignment so it was square one for the entire experimental group regardless of technical expertise. Also,

tutorials, whether synchronous or asynchronous, offer the opportunity for individualized learning (Beyth-Marom, 2005). The same study also found that tutorials enable flexibility in teaching and learning allowing for a better match between the kind of pedagogy and the student's preference regarding learning (Beyth-Marom, 2005).

Another feature of tutorials that appealed to me as an educator was repeatability. That is, my students could pause, rewind, and replay the tutorial as needed. Also, certain students chose to skip forward through certain portions of the tutorial that covered content they already felt comfortable with, such as importing graphics. This level of control in the instructional process came with some individual responsibilities, but it also allowed for greater freedom for students and less wasted time for faster workers.

Learning Styles. As I considered the design of the project and the resulting data I decided to incorporate a learning style inventory within the project. Learning styles can be categorized in a variety of way. Howard Gardener proposed that people acquire knowledge through the filter of different intelligences. Other research supports the division of learning styles into groupings such as concrete-sequential, random-abstract, or thinker, feeler, intuitor, or sensor (Gibson, 2001). For the purposes of this project I sorted my students into the following groups: visual learners, auditory learners, and kinesthetic learners. The potential connection between the changed instructional delivery method and the project results prompted me to consider the factor of preferred learning style. The tutorial delivery method essentially eliminated auditory component of instruction for the experimental group. As many students hone their ability to learn via oral instruction, the preferred teaching style in American Education, I wanted to be able to account for

any significant variance in scores that could attributed to a pedagogical approach poorly suited to the customary learning style of my students.

Development

The first order of business was to create the project. The content of this project needed to be easily adaptable to a tutorial format. I downloaded and explored several possible tutorial programs. After consulting with our site technology specialist, I selected a program call Camtasia Studio which is authored by a corporation called TechSmith. This program is essentially screen-capture software, but instead of screen still pictures, it records in video format. In order to create the tutorial I completed the student project myself at my “teacher computer”. After completing the recording process, the software allowed me to edit the footage in something similar to Windows Movie Maker format. During this process I added what are called call outs. These were written instructions that popped up on-screen at times I determined were critical to the successful completion of the project. These call outs clarified important steps in the process. In selecting where to include the written instructions I drew from past experiences teaching similar lessons and attempted to target traditional problem areas where students typically had more difficulty. As it turned out, the call outs mirrored the direct instruction received by the control group. This was a fortuitous coincidence as it increased the similarity of information delivered to each group.

Implementation

The timeframe for project completion was set at 4 class periods. Each group commenced on a Monday and the stated deadline was Thursday. Friday was a designated

make-up day for any students who might have missed a day during the week. I wanted as many completed projects as possible. Task one was the completion of the on-line learning style assessment. The site worked and all students completed the survey. Task two was the completion of the technology survey, and it too was completed appropriately. Work on the actual Excel spreadsheet then began. The technology utilized in both classes performed as expected with no glitches or other technical difficulties. One noteworthy irregularity occurred with the experimental group. The tutorial was loaded on a network drive so that all of the students could access it simultaneously. The first day of the project, however, I neglected to map all of the computers to the specified drive so a significant portion of day one was spent getting the students connected to the tutorial. After that hurdle was jumped the remaining days were problem free.

I was very pleased with how both groups responded to the project. The instructional design process resulted in a well conceived, well executed series of lessons. As each day passed the students had fewer and fewer questions and worked productively from bell to bell. While my role was vastly different from class to class, in both settings I noted that I became less and less critical to my student's success. As each group worked there was not a discernable difference in the quality of work produced.

Evaluation

The projects produced by both classes were very good. On the whole, both groups demonstrated the ability to navigate Microsoft Excel and create a spreadsheet that met the specific requirements of the assignment. The projects were scored on a criterion-

based scoring guide. Both sets of projects were scored by the same standards according to the same scoring guide. The required elements included: saving the document in the appropriate location, proper formatting of text and cells, inclusion of images harvested from the internet, a data table, and a graph created from the data table. The required elements were rated on a scale from 1 to 5 with 5 representing satisfactory completion of each element. A cumulative score was given with 25 points being a perfect score.

Chapter 4

RESULTS

I dove into this project with some preconceived notions and expectations. My hypothesis was that the addition of a new technology would result in a measurable increase in student achievement. Further, I believed that the unique features of a video tutorial would lend themselves well to autonomous and visual learners. Some of my predictions were met to varying degrees and some were not. One of the difficult things about analyzing the results of this project was the fact that the data was not solidly cut and dried. Many variables entered into play, not the least of which was the novelty of the tutorial itself. Many students seemed to approach it as if it were literally a new toy. This certainly could have skewed the results. If I repeated this same project a dozen times with the same group of kids, surely they would have been less and less inclined to engage in the tutorial so deeply. They were engrossed. But novelty wears off and I had no way to measure exactly what impact this “fun” factor had on the final scores. Also, I found that I dove more deeply into this assignment than I regularly do. Perhaps the results were due to a greater effort on my part to construct a sound project; the novelty would wear off for me as well. So, could the results be directly attributed to the mere inclusion of a new technology, or was it the human factor. While the data wasn't rock solid, it did tell a tale.

The projects submitted were of a high caliber in both classes. The average score for the control group was 21.8 out of 25 and the average score for the experimental group was 23.1 out of 25. While the margin was slightly smaller than I anticipated, the experimental group did outscore the control group by an average of 5.2%. Regarding

learning styles, those within the control group who were identified as visual learners outperformed the auditory and kinesthetic learners by only 2.1%, while in the experimental group where the instruction was almost totally in the visual domain, the visual learners outperformed the others by 5.2%. The auditory learners in the control group scored 6.4% higher than the auditory learners in the experimental group. Not surprisingly the lower performers in both groups identified themselves as being relatively inexperienced with technology in general indicating that they did not own a family computer and spent less than 3 hours per week working with computers. It did not appear that learning style impacted the scores of these technologically inexperienced learners. Those students who indicated that they had a high level of experience with computers scored 12.4% higher than the students with little or no previous computer experience.

Chapter 5

CONCLUSION

I found this process to be quite rewarding. I had never taken this much time to design and implement a series of lessons. Data driven instruction has been heavily emphasized in all of the staff trainings in USD 259 the last three years. Until this project I had yet to delve into the data stemming from my lessons. The numbers brought to light certain elements that would ordinarily have gone unnoticed. The most obvious conclusion to be drawn from the data in this experiment is that if one had to select a single factor in predicting the success of a student on a computer-based project, it would be prior computer experience. I don't think this would open many eyes in the field of education as it makes logical sense. Based on the data several other correlations also exist.

Based solely on the scores, it would follow that the addition of new technology had a positive effect on the experimental group. While the results may not have been earth shattering, the tutorial did something. Scores went up. The students achieved more. As an educator that was my goal in putting the project together and it worked, but why. The answers I found had very little to do with technology itself, and much to do with a pedagogical approach that centered on student learning.

Technology can and should be an integral part of effective instruction. Presently, one would be hard pressed to find any evidence suggesting that children today will not need technical skills for the jobs of tomorrow. The new equipment, in my opinion, should not

negate traditional approaches to educating children. Rather, the technology available should facilitate a transformation in education. Already this process has begun on a small scale within school districts across the United States. Colleges and universities should take note. School districts and school boards seeking results should be informed that teachers desperately need additional training in this area. The issue of student-centered classrooms appeared in some form or another in nearly all of the research I read leading up to this project. Most researchers seem to be in agreement on the fact that technology in the classroom packs the biggest punch when utilized for constructivist type activities. Gordon (2000) notes that many teachers are quite comfortable integrating technology for such purposes as word processing or drill and practice activities. These teachers would likely say they effectively integrate technology in their classrooms. What they mean is they have found ways to use computers while continuing to do what is comfortable. The integration of technology has come a very long way in the last 20 years. But, the perception that having students sit in front of a monitor for so many minutes a week is an effective use of technology in the classroom must be changed.

Students are more technologically savvy now than ever before. They want well-designed, collaborative, challenging and intriguing projects in which to participate. Including technology in the classroom is exciting. Whether a filmstrip or Web quest, the key is getting teachers to move beyond what is familiar and safe. In a student centered classroom the roles of expert and learner are not assigned by age or title. Surely many

teachers feel threatened by the possibility that they might be the individual in the room that knows the least about what is happening around them. Teachers assume that parents, administrators, and students expect them to be the subject matter experts all of the time. I feel these same pressures daily in my own classroom. But, if I determine that I will be in charge and deliver technology instruction in the traditional way, then all of the amazing equipment in my room is rendered only as useful as I can make it. When I let go just a bit and invite my classes to explore, then the impact of the technology may be multiplied. It becomes as useful as we can make it. The tools that teachers have access to are marvelous indeed, but tools are only as effective as the craftsmen who use them.

References

- Beyth-Marom, R. Saporta, K. & Caspi, A. (2005). Synchronous vs. asynchronous tutorials: Factors affecting students' preferences and choices. *Journal of Research on Technology in Education*, Vol. 37, 245-262. Retrieved April 12, 2006, from http://www.eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/2c/e6/9e.pdf
- Gibson, I. (2001). At the intersection of technology and pedagogy: considering styles of learning and teaching. *Journal of Information Technology for Teacher Education*, Vol. 10, 37-62. Retrieved April 12, 2006, from [http://taylorandfrancis.metapress.com/\(nmmqody5wrt44145giiast3x\)/app/home/contribution.asp?referrer=parent&backto=issue,4,13;journal,2,14;linkingpublicationresults,1:120101,1](http://taylorandfrancis.metapress.com/(nmmqody5wrt44145giiast3x)/app/home/contribution.asp?referrer=parent&backto=issue,4,13;journal,2,14;linkingpublicationresults,1:120101,1)
- Gordon, D. (2000). *The Digital Classroom: How Technology is Changing the Way We Teach and Learn*. Cambridge, MA: Harvard Ed Letter.
- Heafner, T. (2004). Using technology to motivate students to learn social studies. *Contemporary Issues in Technology and Teacher Education*, 4(1), 42-53. Retrieved April 12, 2006, from <http://www.citejournal.org/articles/v4i1socialstudies1.pdf>
- Hernandez-Ramos, P. (2005). If not here, where? Understanding teachers' use of technology in silicon valley schools. *Journal of Research on Technology in Education*, Vol. 38, 39-64. Retrieved April 12, 2006, from http://www.eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/2f/71/cc.pdf
- McKinnerney, E. (2004). Reality bytes: a formative technology implementation plan for public schools. Retrieved April 24, 2006, from <http://uweb.txstate.edu/~ps07/mckinnerneyarp.pdf>
- Morris, G. Ross, S. and Kemp, J. (2004). *Designing Effective Instruction*. Hoboken, NJ: John Wiley and sons.

Name: _____

Hour: _____

Technology Survey

Instructions: Answer the following questions accurately and honestly. This survey will help me create a class that meets your needs. This will not affect your course grade in any way so you have no reason not to be totally honest. Write yes or no for each of the following questions or statements.

1. Do you own a home computer?
2. Do you have experience with Micro Soft Power Point?
3. Do you have experience with Excel?
4. Do you operate a computer 3 or more hours per week?
5. Do you think using computers helps you learn?
6. Have you ever used a video tutorial to complete a lesson at school?
7. Do you enjoy school projects that include computers?
8. Do you have an e-mail account?
9. Do you own a cell phone?
10. Do you ever operate a computer outside of school?
11. I feel comfortable using new software and hardware.
12. I think my computer skills are very good for my age.
13. I have no problem accessing the internet and finding information.
14. I think I will learn many new things in technology class.
15. I think learning to use computers is important for my future.

Excel Project Scoring Guide

Teacher Name: **Mr. Myrick**

Student Name: _____

CATEGORY	5	3	1	NS
Naming and Saving Document	Document is accurately named and the file is successfully saved to the student H: drive	Document either named correctly or saved correctly	Document named and saved incorrectly	Failed to name or save the document
Formatting text and cells	Variety of text formats included (font, size, and color) Cells appropriately formatted (merged, aligned, rows and columns adjusted as needed)	2 or more text types Cells formatted correctly	Single text type Cells formatted incorrectly Rows and columns unformatted	No variation in text Cells unformatted
Images	Creative inclusion of multiple images that relate directly to the content of the document	Multiple images, some not related to the content of the document	single image or images unrelated to the content of the document	no images included
Data Table	Data table included Data accurately entered with no errors	Data table included, but with minor errors	Data table included, but with multiple errors that affected graphing	No data table included
Graph	Accurate graph included Reflects the data from the data table	Graph included with minor errors	Inaccurate or unrelated graph included	No Graph included

1. **I follow written directions better than oral directions.**

Often Sometimes Seldom

2. **I understand things I hear better than things I read.**

Often Sometimes Seldom

3. **I enjoy classroom activities where I can participate over listening to a lecture.**

Often Sometimes Seldom

4. **My notes have lots of pictures, arrows, or other symbols in them.**

Often Sometimes Seldom

5. **I learn to spell better by reading a word out loud than by writing it on a paper.**

Often Sometimes Seldom

6. **I understand and follow directions on maps.**

Often Sometimes Seldom

7. **I enjoy working with my hands.**

Often Sometimes Seldom

8. **Before beginning an unfamiliar task, I prefer to see someone else do it first.**

Often Sometimes Seldom

9. **I often need verbal explanations of graphs, charts and diagrams to understand them.**

Often Sometimes Seldom

10. **I can "picture" the right answer in my notes while taking a test.**

Often Sometimes Seldom

11. **I prefer that the professor write the information on the board during lecture.**

Often Sometimes Seldom

12. **I think better when I have the freedom to move around.**

Often Sometimes Seldom

13. **Before beginning an unfamiliar task, I would prefer to have someone tell me the correct procedure.**

Often Sometimes Seldom

14. **I remember material better when I summarize it out loud.**

Often Sometimes Seldom

15. **I make pictorial representations of ideas, like graphs and charts, to help me better understand concepts.**

Often Sometimes Seldom

16. **It is difficult for me to study in a noisy area.**

Often Sometimes Seldom

17. **When I can't think of a specific word, I use my hands a lot.**

Often Sometimes Seldom

18. **The best way for me to remember something is to picture it in my head.**

Often Sometimes Seldom

19. **I prefer to listen to a speech than read about some material.**

Often Sometimes Seldom

20. **When learning something, I often ignore the directions and just start doing it.**

Often Sometimes Seldom

21. **If I sat near a window in a classroom, I would probably be distracted by it.**

Often Sometimes Seldom

22. **I often tap my foot or pencil when thinking.**

Often Sometimes Seldom

23. **I follow oral directions better than written ones.**

Often Sometimes Seldom

24. **I have a good sense of direction.**

Often Sometimes Seldom

25. **I prefer to engage in some activity, like snacking, while studying.**

Often Sometimes Seldom

26. **I can remember more about a subject through listening to a lecture than reading a text.**

Often Sometimes Seldom

27. **I get restless when I am required to sit still for an extended period of time.**

Often Sometimes Seldom

This survey was accessed at http://www.ulc.arizona.edu/learn_styl_ass.html.