Memorandum

To Kathryn Hoene
From Nick Messenger
Date February 1, 2017

Subject Proposal to Study Computer Science and its Impact on Jobs

Introduction

Computers and technology are a huge part of many people's lives and they are evolving into a normal part of everyday communication and they are also essential tools in today's workforce. This research project will explore some of the jobs that are available in today's times with the help of computers as well as how computers and Computer Science are shaping the new generation of careers. This research will also look at how generations are learning computers and learning with computer as well as how this is affecting society and jobs of future generations.

Problem Statement

With the computer industry and computer science growing rapidly, many people see the potential of computers and technology. Though many people do not know how computers are shaping jobs and future generations as well as how people are learning from computers in newer generations. There are many jobs out there in the world that use computers and new jobs are being created as time goes on. Many people do not know of all the job possibilities of the computer industry in today's time. Technology is a normal tool in our society and people should know how it is used as a work tool as well as how it will soon be the future of most jobs and careers. People should be more aware of how younger generations are learning with computers and how the future might change because of this.

Proposed Solution

Computer-based jobs are slowly rising to become a very common job and many will have to adapt to such a thing. By looking at how this is being made so and why it is happening, people can embrace it much more easily, as well as appreciate the power of integrated technology and computers in the workforce. With knowledge of what is becoming of future jobs, one can further explore their interests and use technology to get involved with the new wave of technology and computer-based careers.

Objectives

To educate those who are interested in computers and technology about the computer industry and future of jobs, this research project will look to do the following:

- Look at and investigate how society and generations are changing with computers and specifically look at how people are growing up with/learning with computers in today's society and school systems
- Explore and further analyze both current jobs in the computer industry as well as potential future jobs and careers and how they affect our society
- Generalize the computer industry today and explore/analyze what it will look like in the future, as well as how it will affect people in the future

Methods and Scope

The computer industry is very broad and covers many different fields, but in this research project, Computer Science will be looked at exclusively since it is the major career path for current and future generations. Research from others on possible future jobs hasn't been looked into specifically, but general assumptions of future jobs have been made. The current research discovered below has been on current and past times with some insight into the future. Further research will need to be conducted for future jobs and education since this information will take

a longer amount of time to find and Computer Science is now becoming a big field of study. Some of the research below briefly explores some of the beginnings to new ways of education in and with computers. Research from the past and present as well as exploration into upcoming future careers will help analyze the way people learn from computers and how computer-based jobs are evolving with time. Research may be limited to Washington State specifically if need be.

- Hoske, Mark T. "Hot Technology Jobs: Computers, Telecommunications, Biotechnology, Artificial Intelligence, Robotics." *Control Engineering* (2013)*ProQuest.* Web
- Levy, Frank, and Murnane, Richard J. *The New Division of Labor : How Computers Are Creating the next Job Market*. New York : Princeton, N.J.: Russell Sage Foundation ; Princeton UP, 2004. Print.
- Heermann, Barry. *Teaching and Learning with Computers : A Guide for College Faculty and Administrators*. 1st ed. San Francisco: Jossey-Bass, 1988. Print. Jossey-Bass Higher Education Ser. Print
- Ladner, Richard E., and Maya Israel. "For All" In "Computer Science For All." *Communications Of The ACM* 59.9 (2016): 26-28. *Business Source Premier*. Web.
- Guzdial, Mark, and Briana Morrison. "Growing Computer Science Education into a STEM Education Discipline." *Communications of the ACM* 59.11 (2016): 31-33. Web.
- Naps, Thomas L., et al. "Exploring the role of visualization and engagement in computer science education." *ACM Sigcse Bulletin*. Vol. 35. No. 2. ACM, 2002.

- Guzdial, Mark. "Bringing Computer Science To U.S. Schools, State By State." *Communications Of The ACM* 59.5 (2016): 24-25. *Business Source Premier*. Web.
- Barr, Valerie, and Chris Stephenson. "Bringing computational thinking to K-12: what is Involved and what is the role of the computer science education community?." *Acm Inroads* 2.1 (2011)
- "Computer Science & Engineering." *Computer Science & Engineering*. University of Washington. Web. Feb. 2017. <https://www.cs.washington.edu/>.
- Brown, Emma. "Top business leaders, 27 governors, urge Congress to boost computer science education." *The Washington Post*. WP Company, April & may 2016. Web.

Schedule

For successful research, one should space out the work they do. Approximately 5-10 hours of research and reading of research will be conducted per week to ensure sufficient and reliable sources. Some days may be more research driven, while some will be more reading driven. Some days may result in very little new information or sources found, especially in the later weeks if research is done regularly.

	This Week	**Week 6**	**Week 7**	**Week 8**	**Week 9**	**Week 10**
	1/30 – 2/5	2/6 – 2/12	2/13 – 2/19	2/20 - 26	2/27 – 3/5	3/6 – 3/12
Continued Research & Reading	3-5 Hours	5-8 Hours	4-5 Hours	8 Hours	4-5 Hours	
(Possible Interview with OC faculty member)			1-2 Hours			
Final Research; Review						2-3 Hours
MWA #3				3-4 Hours	4-5 Hours	4-5 Hours
Review of Materials & Final Rough Draft					2-3 Hours	3-5 Hours
Write & Submit Paper						~10 Hours
Back-up						1-2 Hours

Plans are to do about an hour or two of research or reading of research every day or so. If behind schedule, extra time will be given for research on later days in the week. If given the chance, an interview may be conducted around week 7. MWA #3 will be worked on as soon as possible and final research will be done the last week. Writing and submitting the paper will be the main focus for the final week followed by backup.

Qualifications

Researcher qualifications are as follows:

- Graduated High-School last year with an Associate's degree through Olympic College and Running Start
- Have taken many CIS and computer-based classes in college as well as public speaking, psychology, and other communications and people-based classes
- Currently applying for the BAS-IS program at Olympic College

Conclusion

This research will help one gain understanding of how computers are evolving and integrating with our lives. With this knowledge, one can also understand how the computer industry and computer science are being implemented in learning and how younger generations are using computers. One can not only think and imagine the future of the computer industry and how it fits into society, but one can predict it and prepare themselves for career and job opportunities. Computers and technology have been around a long time and have been implemented to aid humans for a long time as well. This research looks to help one understand that computers and technology are only beginning to evolve and will continue to evolve and become even more integrated into the lives and workforce of everyday people.

Audience

The audience for this research topic is those interested in the fields of computers, whether it is Web development, game design, computer science, computer information systems, or anything similar. Even those who are unaware of the types of computer-based jobs in the world can learn from this research since computers are a big part of everyday lives in today's times. With those who know what they want to do as a career or job with computers, or are at least aware of the different fields of study, further knowledge can be gained on how not only are we looking up to older generations for guidance, but we are also looking down to younger generations too.