Final Project Proposal Outline

Name of Project: Beyond the Code

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Abstract: The modern world proclaims itself to be more "social, mobile, and global" by the day, yet our schools fail to keep up with this transformation. Institutions nationwide adapt to other changes like the Common Core and bullying reform. Many, however, lament that these new changes lack any development in the realm of computer science. Unfortunately less than ten percent of American schools formally teach computer science to their students; test registrations support this troubling trend (Westervelt). In a society that values technology now more than ever, the youth of today must be ready to face the new challenges of tomorrow with a certain tech-savvy ability. In my community, I observed only five other peers in my AP Computer Science course, one of the smallest turnouts in the school. This moment made me realize, however, that perhaps the high school is not to blame; perhaps we ought to start the process earlier. My program, Beyond the Code, will develop skills in computing and logic at the middle school levels so that students will be ready to think critically in the world around them. Simultaneously, they will come closer to filling the one million job gap we face in the computer science field by 2020 (Baker).

Community Needs: Math and science achievement in Weymouth and surrounding towns has seen significant backward progress in recent years. My community needs revitalization, a new spark in the STEM arena; why not start with CompSci? Weymouth has always been known for producing bright minds in the STEM fields that go off to innovate, so I seek to keep that trend alive. Too many students enter high school with no prerequisite knowledge of basic computer systems. Beyond the Code will lay the foundation they need for a bright future.

Community Impact/Benefits: A typical complaint is that kids no longer enjoy schooling or any other aspect of the educational process. A program like mine will foster a fun **and** informative environment for students to expand their thinking and maybe even struggle a little bit – it shall only make them stronger. I would like to first target middle school students, in particular those in grades 5-8. This project in the long-term will create a culture where it is positive to love technology (this counters the stereotypes I see taking over my community). Furthermore, I will need to involve other adults in the process so they can carry on my mission as my direct involvement changes over time. Collaboration is key in an undertaking like this one; an early start is critical to success.

Personal Motivation: As I mentioned before, the exigence for this project occurred long this spring. I stepped into my computer science courses both last and this year, only to see stunning levels of enrollment. Immediately I knew that I had to reach the source of the issue if any significant change were to occur: middle school kids. Personally, I had little direction throughout my middle school years and now wish Beyond the Code could have come around during that point in my life. Certainly this project cannot become a

requirement in the middle school curriculum for logistical reasons; but who is to say it cannot be a great opportunity for kids in a place where they currently have so few?

Personal Qualifications: A computer science undertaking like this requires a certain level of skill in computing, programming, algorithmic development and collaboration. I develop all of these skills on a daily basis in advanced STEM courses including AP Computer Science. But this program will take a lot more than a tech-savviness on my part; collaboration will be critical. As captain of my school's football and basketball teams, I understand what it takes to connect students and faculty to achieve a common goal. While coaching youth basketball teams for the same students I wish to help, I also understand the daily issues they face. Given all of these characteristics, I am ready to take on this project and look forward to learning so much more along the way. I also have a professional relationship with numerous faculty members in my school district.

Personal Impact: As I look to expand my own horizons in the realm of computer science and other STEM fields, this program will only help. I will examine the behaviors of young people today to predict tomorrow's future in regards to computing and software development. In correlation with the goal of the Leadership Training Institute, I will discover the power I have to evoke change in my community by using the resources all around me. As I move forward with my educational career, I cannot only learn information for the sake of learning; it must have some purpose. Certainly I enjoy picking up new languages like Objective-C and Ruby on Rails on the side, but to actually apply them to real-life situations is my ultimate goal.

Supervisor: Beginning this project as early as possible is critical. Thus, I will forward this draft to multiple technology advisors in my school district for review alongside a face-to-face meeting scheduled through e-mail. I hope that Ms. Laura Stevenson, former principal of WHS and now technology director, will be a key mentor for me along the way. My computer science mentor and advocate Mr. Joseph Wilkins will also be of great assistance. The latter graduated from Brown University with a degree in Computer Science; the former has years of experience dealing with district budget and policy. I will be working hard to establish a repertoire with more faculty members in the coming weeks. Another key advocate in my project will be Ms. Betsy Harris. As a Community Relations Liaison in the district, she has many connections to those that will help me move the project forward.

Work Plan:

Sunday 3/8 LTI Session – already have communicated with Ms. Stevenson to lay the project's foundation; establish contacts with my town's two middle schools

Sunday 3/15 LTI Session – begin to examine the hardware available at these schools and develop a plan to accommodate students; develop strategies to engage young students in the platform; create advertisement strategies (i.e. logo)

--- NO LTI SUNDAY 3/22 ---
^^^ Open Registration for Beyond the Code (the CompSciChapman chapter) via a GoogleDocs registration form ^^^

Sunday 3/29 LTI Session – continue to accept registrations, yet begin the sessions in the coming week (early April)

>>> Sessions will run from early April through school year – approximately 6 sessions

>>> Obtain feedback from all parties involved via a Google Docs survey

- I am keeping a detailed portfolio of every staff member/student I contact about the project

Other Important Dates ***

In coalition with Weymouth Public Schools, Beyond the Code and LTI, I will be advertising my project at several upcoming venues.

Wednesday, March 18th
College and Career Readiness/Success After High School Seminar
Abigail Adams Middle School, 6 PM
- Discuss the important of STEM with a brief address at an assembly.
- Engage parents so they will push children into STEM opportunities.
- Address Beyond the Code as one of many great programs.

Thursday, March 19th
Parent University
Weymouth High School, 6 PM
- Similar to above venue – engage parents
- Have a table set up with the Beyond the Code logo *** and information about program

Saturday, April 11th
STEM Conference for Girls
Weymouth High School, 8 AM
- Program for middle school girls grades 5-8 to discover new STEM opportunities
- Working with classmate Stephanie Smith to demonstrate applications of Computer Science in all other fields
- Will be teaching three hour-long sessions throughout the morning
- Address Beyond the Code – **increase female enrollment in Computer Science courses*****
- Learn effective strategies for appealing to youth

Works Cited

Baker, Celia R. "Computer Science Classes in High School: Why Too Few Kids Take Them." Computer Science Classes in High School: Why Too Few Kids Take Them. Discreet Media Group, 28 Jan. 2014. Web. 01 Mar. 2015. <http://national.deseretnews.com/article/909/computer-science-classes-in-high-school-why-too-few-kids-take-them.html>.

Westervelt, Eric. "A Push To Boost Computer Science Learning, Even At An Early Age." NPR. NPR, 17 Feb. 2014. Web. 01 Mar. 2015. <http://www.npr.org/blogs/alltechconsidered/2014/02/17/271151462/a-push-to-boost-computer-science-learning-even-at-an-early-age>.