Real Time Project Management

for

Youth from Low Income Single Parent Households

By

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ABSTRACT

Real time project management has been underutilized as a tool to help youth grow personally and professionally. The thesis Real Time Project Management (PM) for Youth from Low Income Single Parent Households develops a study that seeks to result in a higher percentage of youth attending and completing college. The concept is to have youth from low income single parent households work as project managers each summer doing real time small projects for private companies. The youth would start at age 14 and conclude at age 18. They would do five summers of project management, managing small projects each summer while learning not only about project risks, budgets, scheduling, resources, supply chain logistics and relationships that each project encompasses, but also about communication skills, mathematics and science, self-discipline and professional behavior, and teamwork. This thesis develops and details the Real Time Project Management for Youth from Low Income Single Parent Households concept and introduces a potential structure and path for its testing and implementation.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

It may be more difficult for today's youth that come from low income single parent households to obtain a competitive edge when applying for and attending college because class divide may be expanding (Alon, 2009). The Department of Education cites that students who do not attend college or who drop out quickly are predominantly persons from low-income families, living in underdeveloped areas within major cities or in sparsely populated rural areas (U.S. Department of Education, 1999). Based on the Federal Department of Education "inadequate preparation is the key factor in the lack of college success (U.S. Department of Education, 1992). The challenges of obtaining professional and personal success may be harder to achieve today and tomorrow versus yesterday for the youth from low income households (U.S. Department of Education, 1992).

With the lightning pace of technology advancements the youth from low income single parent households that have fallen behind may find it harder to catch up with respect to their professional and personal lives. There is a need for youth from low income single parent households to have a level playing field and this thesis introduces a competitive advantage for youth from low income single parent households.

This thesis is geared towards a study of introducing youth from low income single parent households to real time project management. Real time means the youth will be on the job as a project manager at age 14. Federal law allows youth age 14 to work full-time when school is not in session.

Youth need to see mentoring and leadership when they are growing up (Big Brothers Big Sisters Arizona, BBBS). The earlier youth are involved with or are around leadership can only benefit them. Youth from low income single parent households generally are surrounded by poverty, family dysfunction (mostly single parent households), and inadequate schools. This environment by default doesn't contain the leadership youth need. This puts them at a disadvantage and "behind the curve".

Through this real time project management study the youth will develop leadership skills, work with successful people, get well paid, learn about budgets, schedules, risks and relationships. These components should yield measureable results for these youth over a long period of time. The proposed study will catalog the success of these youth over a period of time and considers potential grant funding from the Federal government over a duration of nine years. Over this nine year study period it is anticipated a conclusion can be reached regarding the concept that exposure to project management helped the youth in obtaining a college degree.

PROBLEM STATEMENT

Youth from low income households are less likely to attend college, have family stability and have successful role models (Paediatr Child Health, 2007), (Social Security Administration, 1961). These are only a few of the barriers the youth will face. With these barriers it's difficult for the youth to see success or be around leaders whom they can models themselves after. Table 1 clearly shows that youth from low income families do not attend college at the percentage of youth from higher income families. The Center for Education Statistics (n.d.) issued data shown in Table 1 that clearly shows low income versus high come youth completing college. The Center for Education Statistics (n.d.) table data was collected from U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS) from October, 1975 through 2016. The thesis author omitted the middle income youth from the table for clarity. An unintended consequence for youth that come from for low income single parent households is they don't know what they don't know. If they don't know what success looks like then how can they strive for success?

Table 1

Percentage of recent high school completers enrolled in college, by income level…

Table 302.30. Percentage of recent high school completers enrolled in college, by income level: 1975

[Standard errors appear in parentheses]

	Percent of recent high school completers\1\ enrolled in college\2\ (annual data)						3-year moving averages\3\									
							Percent of recent high school completers\1\ enrolled in						Difference between percent enrolled			
Year	Total		Low income		High income		Total		Low income		High income		High-low income		High-middle income	
1	2		3		5		6		7		9		10		11	
1975 ..	50.7	(1.29)	31.2	(3.65)	64.5	(2.13)	49.1	(0.75)	34.7	(2.79)	63.7	(1.49)	29.0	(3.16)	20.2	(1.94)
1976 ..	48.8	(1.33)	39.1	(4.27)	63.0	(2.09)	50.1	(0.75)	32.3	(2.21)	64.6	(1.20)	32.3	(2.51)	20.8	(1.57)
1977 ..	50.6	(1.30)	27.7	(3.56)	66.3	(2.02)	49.9	(0.75)	32.4	(2.23)	64.4	(1.19)	32.1	(2.53)	21.4	(1.57)
1978 ..	50.1	(1.29)	31.4	(3.76)	64.0	(2.06)	50.0	(0.75)	29.8	(2.14)	64.5	(1.18)	34.6	(2.45)	20.5	(1.56)
1979 ..	49.3	(1.29)	30.5	(3.80)	63.2	(2.05)	49.6	(0.75)	31.6	(2.12)	64.1	(1.19)	32.6	(2.44)	20.8	(1.57)
1980 ..	49.3	(1.31)	32.5	(3.49)	65.2	(2.09)	50.8	(0.75)	32.2	(2.15)	65.3	(1.20)	33.0	(2.47)	20.2	(1.58)
1981 ..	53.9	(1.31)	33.6	(3.93)	67.6	(2.10)	51.3	(0.76)	32.9	(2.12)	67.9	(1.20)	34.9	(2.44)	23.4	(1.57)
1982 ..	50.6	(1.38)	32.8	(3.87)	70.9	(2.16)	52.4	(0.80)	33.6	(2.33)	69.6	(1.27)	36.0	(2.65)	24.2	(1.67)
1983 ..	52.7	(1.41)	34.6	(4.07)	70.3	(2.20)	52.8	(0.81)	34.0	(2.23)	71.7	(1.25)	37.8	(2.55)	26.7	(1.66)
1984 ..	55.2	(1.39)	34.5	(3.67)	74.0	(2.12)	55.1	(0.82)	36.3	(2.29)	72.9	(1.25)	36.6	(2.61)	24.9	(1.69)
1985 ..	57.7	(1.47)	40.2	(4.20)	74.6	(2.19)	55.5	(0.83)	35.9	(2.21)	73.2	(1.27)	37.3	(2.55)	24.1	(1.71)
1986 ..	53.8	(1.45)	33.9	(3.64)	71.0	(2.31)	56.1	(0.85)	36.8	(2.26)	73.2	(1.29)	36.4	(2.60)	23.5	(1.75)
1987 ..	56.8	(1.48)	36.9	(3.94)	73.8	(2.19)	56.5	(0.85)	37.6	(2.25)	72.6	(1.32)	35.0	(2.60)	21.5	(1.76)
1988 ..	58.9	(1.60)	42.5	(4.46)	72.8	(2.56)	58.4	(0.94)	42.4	(2.58)	72.5	(1.46)	30.2	(2.97)	19.1	(1.96)
1989 ..	59.6	(1.58)	48.1	(4.40)	70.7	(2.52)	59.5	(0.90)	45.6	(2.57)	73.2	(1.44)	27.6	(2.95)	18.4	(1.90)
1990 ..	60.1	(1.60)	46.7	(4.76)	76.6	(2.54)	60.7	(0.92)	44.8	(2.63)	75.0	(1.44)	30.2	(3.00)	19.0	(1.92)
1991 ..	62.5	(1.62)	39.5	(4.50)	78.2	(2.39)	61.5	(0.92)	42.2	(2.62)	78.0	(1.40)	35.8	(2.97)	21.4	(1.88)
1992 ..	61.9	(1.58)	40.9	(4.37)	79.0	(2.35)	62.3	(0.92)	43.6	(2.60)	78.8	(1.38)	35.3	(2.94)	21.4	(1.87)
1993 ..	62.6	(1.59)	50.4	(4.56)	79.3	(2.46)	62.1	(0.91)	44.7	(2.55)	78.7	(1.39)	34.0	(2.90)	21.5	(1.86)
1994 ..	61.9	(1.54)	43.3	(4.27)	77.9	(2.40)	62.1	(0.89)	42.0	(2.45)	80.4	(1.31)	38.4	(2.78)	23.4	(1.80)
1995 ..	61.9	(1.41)	34.2	(3.57)	83.5	(1.87)	63.0	(0.81)	42.1	(2.16)	79.9	(1.21)	37.8	(2.48)	21.0	(1.65)
1996 ..	65.0	(1.42)	48.6	(3.78)	78.0	(2.27)	64.7	(0.82)	47.1	(2.18)	81.3	(1.19)	34.3	(2.49)	21.4	(1.66)
1997 ..	67.0	(1.37)	57.0	(3.65)	82.2	(1.98)	65.9	(0.80)	50.6	(2.13)	79.3	(1.24)	28.7	(2.47)	16.6	(1.67)
1998 ..	65.6	(1.38)	46.4	(3.62)	77.5	(2.20)	65.2	(0.80)	50.3	(2.13)	78.4	(1.24)	28.1	(2.47)	16.6	(1.66)
1999 ..	62.9	(1.38)	47.6	(3.77)	75.4	(2.26)	64.0	(0.80)	47.9	(2.13)	76.6	(1.29)	28.7	(2.49)	15.1	(1.70)
2000 ..	63.3	(1.41)	49.7	(3.67)	76.9	(2.22)	62.7	(0.82)	47.1	(2.16)	77.4	(1.29)	30.3	(2.52)	18.6	(1.72)
2001 ..	61.8	(1.41)	43.8	(3.61)	80.0	(2.08)	63.5	(0.78)	49.9	(2.07)	78.3	(1.22)	28.4	(2.40)	19.3	(1.63)
2002 ..	65.2	(1.31)	56.3	(3.64)	78.2	(2.12)	63.7	(0.78)	50.9	(2.14)	79.5	(1.20)	28.6	(2.45)	21.0	(1.61)
2003 ..	63.9	(1.35)	52.8	(3.83)	80.1	(2.02)	65.3	(0.77)	52.5	(2.20)	79.5	(1.18)	27.0	(2.49)	18.9	(1.58)
2004 ..	66.7	(1.31)	47.8	(3.95)	80.1	(1.98)	66.4	(0.77)	51.4	(2.24)	80.5	(1.15)	29.0	(2.52)	18.5	(1.56)
2005 ..	68.6	(1.31)	53.5	(3.86)	81.2	(1.98)	67.1	(0.76)	50.8	(2.26)	80.7	(1.15)	29.9	(2.53)	17.4	(1.55)
2006 ..	66.0	(1.33)	50.9	(3.92)	80.7	(2.01)	67.2	(0.75)	54.5	(2.18)	80.0	(1.15)	25.5	(2.47)	16.7	(1.55)
2007 ..	67.2	(1.26)	58.4	(3.57)	78.2	(2.01)	67.3	(0.73)	55.3	(2.11)	80.2	(1.14)	24.9	(2.40)	16.8	(1.51)
2008 ..	68.6	(1.21)	55.9	(3.50)	81.9	(1.90)	68.6	(0.71)	56.1	(2.08)	81.4	(1.11)	25.3	(2.36)	16.2	(1.47)
2009 ..	70.1	(1.23)	53.9	(3.75)	84.2	(1.84)	68.9	(0.70)	53.3	(2.02)	82.8	(1.10)	29.5	(2.30)	16.6	(1.44)
2010\4\	68.1	(1.49)	50.7	(3.88)	82.2	(2.34)	68.8	(0.71)	52.6	(1.97)	83.0	(1.12)	30.4	(2.27)	16.4	(1.46)
2011\4\	68.2	(1.45)	53.5	(4.25)	82.4	(2.46)	67.5	(0.89)	51.6	(2.47)	81.7	(1.42)	30.1	(2.85)	15.9	(1.81)
2012\4\	66.2	(1.59)	50.9	(4.39)	80.7	(2.54)	66.8	(0.94)	50.3	(2.63)	80.4	(1.59)	30.1	(3.07)	15.5	(2.03)
2013\4\	65.9	(1.58)	45.5	(4.31)	78.5	(2.68)	66.8	(0.98)	51.6	(2.74)	80.8	(1.46)	29.2	(3.10)	16.8	(2.00)
2014\4\	68.4	(1.67)	57.8	(4.42)	83.6	(2.17)	67.8	(1.00)	57.5	(2.54)	81.7	(1.41)	24.2	(2.91)	18.5	(1.96)
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2016\4\	69.8	(1.64)	65.4	(3.82)	82.5	(2.48)	69.5	(1.25)	67.1	(2.85)	82.9	(1.69)	15.8	(3.32)	19.2	(2.30)

\1\Individuals ages 16 to 24 who graduated from high school or completed a GED or other high school

\2\Enrollment in college as of October of each year for individuals ages 16 to 24 who had completed high school earlier in the calendar year.

\3\A 3-year moving average is a weighted average of the year indicated, the year immediately preceding, and the year immediately following. For 1975 and 2016, a 2-year moving average is used: The moving average for income groups in 1975 reflects an averag

\4\Beginning in 2010, standard errors were computed using replicate weights, which produced more precise values than the generalized variance function methodology used in prior years.

NOTE: Data are based on sample surveys of the civilian noninstitutionalized population. Includes enrollment in 2-year colleges and in 4-year colleges and universities. Low income refers to the bottom 20 percent of all family incomes, high income refers to

SOURCE: U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS), October, 1975 through 2016. (This table was prepared July 2017.)

OBJECTIVE

The basis of this thesis is to use real time project management as a tool to help youth from low income parent households develop better so they are more equipped to attend and finish college. The objective of this thesis is to develop and introduce a concept that, if implemented, will measure the youth over a long period of time after these youth have been working in real companies performing project management roles as a project manager. Success will be measured with respect to entering and finishing college. The youth from low income single parent households chosen for the study are proposed to come from the Big Brothers Big Sisters (BBBS) nonprofit organization. Using real life company project managers as mentors to the youth, the youth will learn about all the knowledge areas of project management such as project risks, finances, budgets, supply chain, procurement, schedules and communication.

LITERATURE REVIEW AND BACKGROUND INFORMATION

The objective of the literature review was to find formal real time project management programs for youth of low income single parent families. Formal is important because formal means the program is structured in a way it can be studied. The research encompasses database researching and interviews with industry and youth program leaders. The databases that were search extensively were ABI-INFORM, JSTORE, Science Direct ELS, Google Scholar, and PMI website. Appendix A shows tables of the key words, the “hits” for those key words and the researched results. In addition, a table on work based training is presented. The research uncovered numerous formal project management classroom programs for youths and only one real time project management program. The one real time project management program was structured around troubled adolescents in Slovenia. None of the databases and journals were fruitful in finding real time project management studies for youth.

By way of background information, the research also conducted interviews with industry leaders to collect information that may exist outside of traditional databases and search engines. The thesis author spoke with Chonnie Blair from Project Management Institute Education Foundation (PMIEF)

on July 17th, 2017. Chonnie Blair is a PMIEF Director. Blair indicated PMIEF is not aware of any formal real time project management programs which have been studied with respect to youth development. The Project Management Institute (PMI) is a worldwide project management organization. Project Management Institute Education Foundation (PMIEF) is PMI's nonprofit educational branch. Blair also indicated that they have never thought about studying results of real time project management for youth. When Blair made this statement the thesis author knew the subject of this thesis was unique.

Many K-12 project management classes were found during the research. These are very important because the basis of these classes validate the importance of youth learning about project management to help them develop better. There is widespread information that K-12 project management classes helping youth develop (Drewery-Brown, E, 2002), (Garfein, S. J. & Noeldner, J, 2011). However, these are only classes and not real time project management.

One real time project management program does exist for adolescents. The thesis research has shown only one formal study directly related to real time project management for troubled adolescents. The paper titled "Project Based Integral Development of Youth in Slovenia" Bozic, Bostjan. (2007), has similarities but diverges from this thesis. The paper talks about the leadership qualities obtained from project management that are essential for youth to develop. The paper talks about integrating companies, education and students. The paper clearly has the same mission as this thesis. The conclusion of the paper states this "*Regardless of the methods the project work with/for youth is being implemented in Slovenia, the common characteristic of all three programmes is the aim to develop young people into competent, responsible and motivated individuals"*. However, the paper has fundamentals differences or divergences from this thesis. Youth admitted to the program are youth who have already dropped out of high school and then want to change their lives. This is where the paper diverges from this thesis. This thesis will start with youth from low income single parent households that before they would have dropped out of high school. The paper also discusses the challenges of providing project management education for the youth. This thesis takes care of this educational part by having PMIEF develop distance or online project

management classes. The paper also doesn't have conclusions on the effects of project management on the development of the youth. This is where the paper and this thesis diverge again. This thesis will study the effects of project management on youth from low income single parent households through their teenage years and into college or trade school.

There are also many studies and papers that have project management courses in K-12 classroom but none that take project management outside the classroom. A few classroom examples are "My Future, a successful project", (Napolitano, I, 2014) and "Washington State breakthrough: project management for high school students", (Garfein, S. J. & Noeldner, J, 2011). During the discussion with Blair stated that PMIEF is starting a project with introducing girls in small town on the east coast to real time project management but nothing is formalized and they will not be studying it. The thesis author discussed creating distance learning or online learning for the thesis. PMIEF appeared interested in developing distance learning for youths.

The research has shown that the United States (US) Department of Labor Job Corps and Year Up are two huge youth development programs here the United States. However, neither offer real time project management as an opportunity for youth development.

US Department of Labor Job Corps is in 125 locations around the US. Job Corps offers hands-on training in more than 100 career technical areas, including: automotive and machine repair, construction, finance and business services, health care, hospitality, information technology, manufacturing, renewable resources, and many more. All training programs are aligned with industry certifications and are designed to meet the requirements of today's careers. Job Corp does not introduce project management.

Year Up is in 18 locations around the US and growing. 250 companies are part of Year Up. In 2018 Arizona Public Service granted $25,000 to Year Up Arizona. Year Up serves 3500 young adults. The program combines hands-on skills development, courses eligible for college credit, and corporate internships to prepare students for success in professional careers and higher education.

Year Up motto is “Year Up empowers low-income young adults to go from poverty to professional careers in a single year”.

The YouthBuild (n.d.) initiative is a widespread program across the USA for low income young people. YouthBuild (n.d.) has been around for 40 years. YouthBuild teaches, funds employment and empowers young people. Based on the YouthBuild (n.d.) website “low-income young people learn construction skills to help build affordable housing and other community assets such as community centers and schools”. The YouthBuild (n.d.) website identifies a lot of hands on work on many projects but doesn’t use project management opportunities for the low income youth.

Corporate philanthropy was also researched. This was researched because this is critical to the success of the study. Corporations and governments need to supply summer time projects and provide a high wage to the youth study participants. Corporations are interested in giving back to the community (Hess, Rogovsky, & Dunfee, 2002). An example within Arizona is Arizona Public Service (APS). APS has 6,000+ workers, in 2017 gave more than 110,000 hours of employee volunteer hours and contributed $9.8 million to Arizona communities (Pinnacle West Corporation, 2018). At one power generation site, Palo Verde, has 2000 employees, and in May 2018 took on 24 summer internships. That’s greater than 1% of the worker population that the company was willing to add for the summer. Another larger example is The Boing Company. Boeing gave $181 million to enhance communities in which Boeing sites are located (The Boeing Company, 2018). These are just two examples that show how companies want to give back to their communities.

At this time the research has revealed that there are no formal studies or papers that show results of the effects of introducing real time project management to youth from low income single-parent households or any youth. The biggest youth programs Year Up, Job Corps and YouthBuild do not include the idea of introducing real time project management to youth. Real time project management is completely underutilized with respect to developing youth.

DEVELOPMENT OF THESIS IDEA

Through life's experiences the author developed the thesis idea. The author is and has been a big brother off and on with Big Brothers Big Sisters nonprofit for the past 17 years. The author didn't have an engaged father figure or big brother growing up. The author has been a project manager on and off for 15 years and realized that project management work is different from most other career fields. The author realized it requires so many additional skills than most other careers. The author realized it's different because it's a mixture of so many careers. A sample of the mixture is management, sales, marketing, finance, leadership and communication careers. The author knew in order for a project to be successful the project manager needs to be highly engaged and responsible. The author thought this type of engagement and responsibility if learned at a young age could provide discipline that a fatherly figure should have provided. The author thought that this kind of discipline and learnings acquired at a young age could only benefit youth who didn't have mentoring figures in their lives. This was the basis for this thesis idea.

Since the author is a big brother with Big Brothers Big Sisters of central Arizona the author approached BBBS of central Arizona to ask whether they would like to participate in this type of study. The author spoke with the vice president of programs who then spoke with the CEO. BBBS stated they were onboard as long as they didn't have to acquire any study data.

The author knew the youth would need classes to learn about the knowledge areas of project management. The author knew the youth would need formalized project management training. The author then contacted the Project Management Institute Educational Foundation to ask whether they would be interested in being part of the study and developing or revising their already created youth based project management classes. PMIEF already has existing youth project management classes and the author was aware of this fact. This is why the author thought about PMIEF as a thesis stakeholder. PMIEF expressed interest.

Then the author knew data would need to be collected to determine if the thesis idea could be successful or not. The author spoke with a high school guidance counselor with regards to if they

collect data after the youth finishes high school. The guidance counselor stated in years past it was very difficult after the youth departed from high school but with today's technology it's becoming easier. Parents and Students are keeping their cell phone numbers much longer than they did with landlines in years past. So connecting with them after high school is becoming easier. The author realized that collecting data during and after the youth's study participation is feasible.

The author then looked for a windows of opportunity to talk with executives from the authors company. The author explained the basis of the thesis idea and asked if our company would be interested in sponsoring summer time projects. The interest was there from the vice president level to executive vice president level.

Once the author started gathering interest from the potential stakeholders then the author started to assemble the thesis idea.

REAL TIME PROJECT MANAGEMENT PROCESS METHODLOGY

The process methodology follows Appendix B process flow chart. Appendix B flow chart shows the high level thesis methodology. The methodology initiates by gathering buy in from all five stakeholders Big Brothers Big Sisters nonprofit or alternative, private companies, Federal Government, PMIEF, and university PhD students). Upper left hand corner of Appendix B shows the stakeholders. The below list is a high level overview of study commitments needed from stakeholders.

1. Federal Government – Grant money for study
2. University Faculty and PhD students – project manage entire study
3. BBBS (or alternative) – identify the youth for the study and commitment from parents
4. Private companies / Government Institutions – Each summer commit to small number of projects for the youth
5. PMIEF – Create online project management online classes for the youth

The university faculty and PhD students will apply for federal grant money. The grant writing would emphasize the buy in from private, nonprofit and government organizations. When the federal government sees commitment from private companies, nonprofit companies, and state government stakeholders on a project they are more apt to authorize federal grant money (Appalachian Regional Commission). This will be a multi-year study. A multi-year study so that the faculty and PhD students can collect needed data on the youth over a long period of time. The federal grant money would be used to cover university expenses for the long the term study. In addition, the federal grant money would be used to procure a laptop, laptop bag, all necessary project management software (MS Office, etc…) for all the youth in the study and for the creation of online or distance learning project management classes for the youth.

The proposed study will use PhD students with different areas of expertise. Using a construction management PhD student to oversee the study. A behavioral science PhD student would identify the type of data to be collected, method of collecting and then analyze the data. Both PhD students would work together and have overlapping responsibilities. The behavioral science PhD student would help the construction management PhD student to project manage the study. The PhD students would get commitment from the private companies / government institutions to pay the youth $20/hr. This pay is an incentive for the youth to continue using project management for their growth and to show the youth if they work hard they will be well paid.

Big Brothers Big Sisters nonprofit organization would identify youth to participate in the study and get commitment from their parents. July 12th 2017 at 3pm the thesis author met with BBBS Vice President of Programs (Susan Wiltfong) and a Director to discuss this thesis. Wilfong returned an email afterwards stating the CEO was onboard with the thesis study. Year one BBBS would identify ten 14 year old youths to participate. Year two BBBS would identify another ten 14 year olds to participate in the study. Each year up to year five BBBS would identify ten 14 years to participate in the study. At the beginning and end of 5 years there would be 50 youth in the study ranging from age 14 to 18 years old. After year 5 no more additional youth would be added. The remaining youth would stay in the study for the remaining four years until the reach the age of 18.

Private companies would identify small projects that can be started at the beginning of the summer and completed by the end of the summer. The private companies would identify a project manager mentor for each youth who will be managing the summer time project. This mentor would guide the youth from day one to the last day of the project. The mentor would guide the youth in creating a charter, building schedules, creating contracts, resource load schedules, etc. The youth participating in the first year of the study the mentor will need to be side by side with the youth during the project lifecycle. Private companies always have many small projects ongoing or scheduled. For example, a company potentially interested in participating started these two small projects in May 2018 and will be complete June 2018, see Figure 1 and Figure 2. These two small projects are on one floor of a multi-story building. This work is only one building of more than a dozen on site. There are many opportunities within private companies and even government facilities for the youth to manage small projects during the summer. The summer time small projects could range from meeting room technology upgrades, bathroom renovations, new offices, office space reconfigurations, etc. Private companies are more apt today to be part of the social fabric then years past (Hess, Rogovsky, & Dunfee, 2002). This is why gaining commitment from private companies for summer long projects is achievable.

Figure 1. New Office

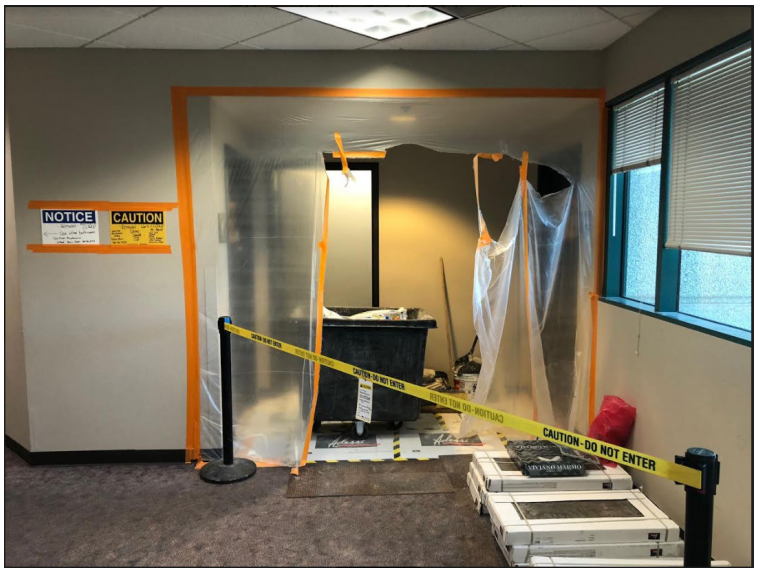

Figure 2. Male / Female Bathroom Upgrade

Year one of the study 10 small projects will be needed from 5 private companies or government facilities. Two small projects per company are needed. These 10 projects will be for 10 youth in the study. Then the second year 20 small projects from 5 or more companies. These 20 small projects will be for 20 youth in the study. The second year BBBS will identify an additional 10 youth. The second year will have 20 youth participating in the study. At beginning of the fifth year 50 small project will be needed because there will be 50 youth participating in the study. Year six 40 small project will be needed, Year seven 30 small project would be needed. Year eight 20 small project would be needed. Year nine 10 small project would be needed. Table 2 shows this breakdown of needs.

Table 2

Number of Projects Needed per Year

Year / Youth Ages	1	2	3	4	5	6	7	8	9
14	10	10	10	10	10				
15		10	10	10	10	10			
16			10	10	10	10	10		
17				10	10	10	10	10	
18					10	10	10	10	10
#Projects Needed	10	20	30	40	50	40	30	20	10

PMIEF would be contracted to either revise existing youth project management courses or create new distance learning (online) classes. The leadership classes would encourage the youth to use leadership learnings on the job and in life. A set of project management revised or newly created classes would be geared towards youth exposed for the first time to project management. These classes would be used during the youth's first year in the study. Then PMIEF would create classes for the more experienced youth. These classes would be more detailed and geared towards youth that have been in program one or more years. The youth would take these classes during the school year between their summer project management work. The classes would cover the project management essentials such as understanding scope, risks, budgets, schedules, quality, communication, and procurement. . The PMIEF classes would be specific to each knowledge area. For example: One class specifically to understand risk. Another class specific to understand scope. In all there would be 3 classes per knowledge area. Each class would be more and more detailed. As the youth's gain experience from the summer long projects they would take a more detailed class during the following school year after the summer long projects.

At the end of each summer when the projects are complete the PhD students will perform the data gathering process. The type of gathered data will be determined by the PhD students. The methods to gather the data will be determined by the PhD students. From the data collected the PhD students will be able to determine if project management is helping the youth from low income single parent households became better prepared to enter and finish college.

PROCESS METHODLOGY SUMMARIZED

The youth will start at the project initiation phase and work through the project launch and execution phase during their summer breaks at companies that are committed to this study. During the school year the youth will take condensed and focused online (distance) project management classes specifically developed by Project Management Institute Educational Foundation (PMIEF) to stay engaged and continue learning about project management fundamentals. The study will ask the youth to implement their online learnings and summer project management learnings into their daily lives.

The PhD students will study these youth from low income single parent households as they complete their summer time project management roles. Studying the youth year after year, after they leave the study at age 18 and when they enter trade school or the university. The PhD students will study whether these youth from low income single parent households to determine if positive growth is evident. The PhD students will talk with the youths' parents to see if the parents see differences in youth after they complete summer project management roles.

The end goal of the multi-year study is to expose youth from low income parent households to skills and experiences they wouldn't have experienced otherwise. The end result should yield that the youth are more prepared to enter and finish college.

BENEFITS OF PROJECT MANAGEMENT

Youth learning about cost control, schedule development, adherence, quality, and safety below are a few characteristics that project managers learn while on the job. The below list are characteristics that project managers learn throughout their careers and carry with them throughout their lives. If the youth learn these characteristics over the five year study period it will prepare them well for college and life.

1. Time management
2. Communication skills
3. Leadership

4. Team management
5. Planning
6. Budgeting
7. Negotiating
8. Legal knowledge
9. Resource management

The following list are softer attributes learned when performing project management. This list is from a construction management lecture, CON 598, at Arizona State University (Sullivan, 2015). This list is important because youth from low income households see a lot of dysfunction (Paediatr Child Health, 2007). If a child learns they don't have influence over people or understand they can't control people than they might be less apt to argue with their bosses or other people.

1. They become more "perceptive" and perceive at a faster rate, change at a faster rate, and are more accurate with their predictions
2. When something goes wrong, they look inside first
3. Control their own destiny
4. Cannot control others
5. Create their own "environment"
6. Realize they have no influence over other people
7. Realize measurement is the only way to align

APPROXIMATE STUDY COSTS

The summer wages for the youth will come from the private businesses. Each private business will fund the youth that is working for them over the summer. The additional needed funding will come from federal grant funding. The estimated costs needed to fund the study over the ten year period is approximately $2,559,150.00 dollars (see Table 3). The first year is for the PhD students to gather the commitment letters, request grant funding, and build the study charter. Then the following nine years are the actual study.

Table 3

Needed Federal Grant Funding

		Cost over ten years	
Two PhD Students	$94,000/year	$1,485,200.00	58% F&A rate
Faculty	$15,000/year	$237,000.00	58% F&A rate
Travel	$1,500.00	$23,700.00	58% F&A rate
Supplies	$2,500/year	$39,500.00	58% F&A rate
Tuition for Two PhD	$37,000/year	$370,000.00	
PMIEF Distance Learning Courses	$30,000.00	$300,000.00	
50 laptops	$50,000.00	$50,000.00	
Laptop software	$50,000.00	$50,000.00	
Laptop bags	$3,750.00	$3,750.00	
	Total	**$2,559,150.00**	

CONCLUSION

The effects introducing youth from low income single parent households to on the job projects as project managers and working with successful people every day has never been studied or evaluated before. Putting these youth around success and getting well paid as an incentive to work hard should prepare them well for college. The goal of the study is to have a higher percentage of youth from low income households attend and finish college than the US federal government statistics (U.S. Department of Education, 1992)

Through the project management role the youth from low income single parent households will learn to succeed by completing their projects each summer. Successful completion of their projects each summer will provide confidence and memorable experiences to the youth.

Project management is different than most employment opportunities. Project management offers a wider selection of developmental growth opportunities for an individual compared most other career fields. This wide selection consists of understanding costs and finances, schedules, building and maintaining relationships, understanding safety, supply chain and quality control. This wider selection of experiences will give the youth in the study an advantage at a young age. This

advantage should bleed over to a higher percentage of attending and completing college then the current federal government statistics.

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APPENDIX A

VARIOUS SITES, FOUND JOURNALS INCLUDING FROM PMI SITE

1	PM4Kids (project management for students in elementary school)
	http://www.pmi.org/learning/library/project-management-students-elementary-school-1023
	Drewery-Brown, E. (2002). PM4Kids (project management for students in elementary school) Paper presented at Project Management Institute Annual Seminars & Symposium, San Antonio, TX. Newtown Square, PA: Project Management Institute
2	Project management for a sustainable model for education in Congo
	http://www.pmi.org/learning/library/project-management-sustainable-model-education-5891
	Cobos, E. (2013). Project management for a sustainable model for education in Congo: the Kubunina program. Paper presented at PMI® Global Congress 2013—North America, New Orleans, LA. Newtown Square, PA: Project Management Institute.
3	My future, a successful project
	http://www.pmi.org/learning/library/pm-course-high-school-students-8707
	Napolitano, I. (2014). My future, a successful project. Paper presented at PMI® Global Congress 2014—EMEA, Dubai, United Arab Emirates. Newtown Square, PA: Project Management Institute.
4	Washington State breakthrough project management for high school students
	http://www.pmi.org/learning/library/project-management-high-school-curriculum-6187
	Garfein, S. J. & Noeldner, J. (2011). Washington State breakthrough: project management for high school students. Paper presented at PMI® Global Congress 2011—North America, Dallas, TX. Newtown Square, PA: Project Management Institute.
5	What Works In Job Training: A Synthesis of the Evidence
	https://www.dol.gov/asp/evaluation/jdt/jdt.pdf
	see page 22 for departments for grant money
6	https://www.youthbuild.org/
7	Employers' Approaches to Work-Based Training in Britain.
	https://eric.ed.gov/?id=EJ543883
	Hillage, Jim
	Vocational Training: European Journal, n8-9 p43-49 May-Dec 1996
	ISSN: ISSN-0378-5068

8	The role of governments in a market economy: Future strategies for the high-tech industry in America
	S0925527396000722-main.pdf?_tid=af398228-4953-11e7-8c6a-00000aab0f01&acdnat=1496601123_8c8c1061467f0bc4b621f63d70f4d38b
	John E. Merchant
	Int. J. Production Economics 52 (1997) 117-131
9	An Age-Graded Model for Career Development Education'
	http://www.sciencedirect.com/science/article/pii/0001879174901043?via%3Dihub
	Journal of Vocational Behavior Volume 4, Issue 2, April 1974, Pages 193-212
10	Fair Labor Standards Act Advisor
	https://webapps.dol.gov/elaws/faq/esa/flsa/028.htm
11	LABOR DEPARTMENT ANNOUNCES AVAILABILITY OF $5M IN GRANTS TO HELP AT-RISK YOUTH EXPLORE CAREER PATHWAYS IN JUSTICE CAREERS
	https://www.dol.gov/newsroom/releases/eta/eta20160407-0
12	Youth websites for career help
	http://youth.gov/youth-topics/youth-employment/career-exploration-and-skill-development
14	THE YOUTH EMPLOYMENT PARTNERSHIP
	http://www.yep.org/
16	Educate Texas
	http://www.edtx.org/
18	Year Up
	http://www.yearup.org/

APPENDIX B

KEYWORDS USED IN DATABASE SEARCHING

ABI-INFORM database		
Keywords	**Hits**	**Results/comments**
child project management	17	No relevant hits
youth project management	0	
su.exact("project management" and k-12)	76	No hits were specific to k-12 managing actual projects
su.exact("project management") and su.exact("k-12")	0	
su.exact("project management") and x.exact("k-12")	0	
su.exact("project management") and su.exact("adolescents")	0	
su.exact("project management") and su.exact("ojt")	0	
su.exact("project management") and su.exact("training")	409	Classroom only PM for stduents No hits were specific k-12 managing actual projects
su.exact("project management") and su.exact("internships")	0	
su.exact("project management") and su.exact("at risk kids")	0	
su.exact("project management") and su.exact("high school")	0	
su.exact("project management") and su.exact("young adult")	1	No relevant hits
su.exact("projct management for kids")	0	

ABI-INFORM database		
Keywords	**Hits**	**Results/comments**
su.exact("projct management for kids") and "for young kids"	122	Not Too Young to Manage the Team Tulacz, Gary J. ENR; New York236.21 (May 27, 1996):
su.exact("project management") and su.exact("k-12 students")	0	
su.exact("project management") and su.exact("k-12")	0	
su.exact("project management") and k-12	96	No relevant hits

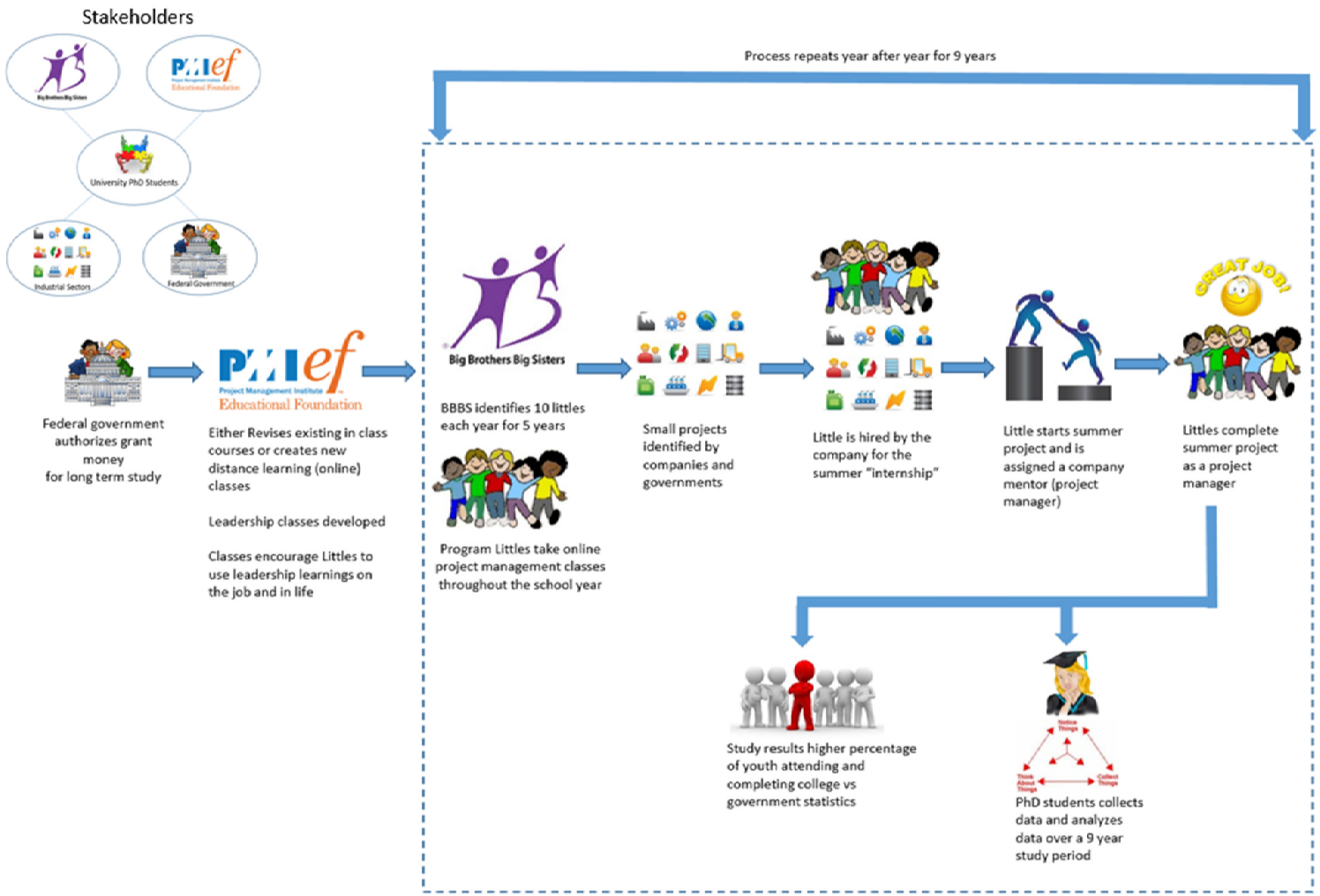
Google Scholar			
	Keywords	**Hits**	Results
any words		100	
exact	"childhood development" "work based training"		No relevant hits
	work based training for young adults	1	
	work based training for disadvantaged kids	0	
	work based training for adolescents	0	
	childhood work based training	0	
in title only	work based training"	70	No relevant hits
in title only	adolescent job training	0	
additional word	auto industry		
in title only	adolescent training	0	
additional word	auto industry		
in title only	adolescent job training	0	
in title only	adolescent workplace training	0	
anywhere in doc	adolescent workplace training	0	
anywhere in doc	adolescent on the job training	0	
title	adolescent on the job training	0	
title	"k-12 "project management"	1	In classroom projects
title	youth "project management"	23	1 solid hit. Program does discuss PM and youth. Definite similarities to thesis PROJECT-BASED INTEGRAL DEVELOPMENT OF YOUTH IN SLOVENIA http://www.icoste.org/ZPM_Bozic.pdf

JSTORE Database			
Keywords		**Hits**	
au: = author			
ti: = title (journal)			
tb: = title (book)			
ca: = caption			
ab: = abstract			
jo: = journal name			
la: = language			
ty: = type of item			
ty:brv = book review			
(ab:ti"project management") AND (ab:"childhood")		4	no relevant hits
(ab:ti"project management") AND (ab:"adolescent")		10	no relevant hits
(ab:ti"project management") AND (ab:"young adults")		5	no relevant hits
(ab:ti"project management")		2	no relevant hits
(ab:ti"project management") AND (ab:"childhood development		0	
(ab:ti"project management") AND (ab:"K-12")		15	no relevant hits
(ti"project management") AND (ti:"K-12")		32	no relevant hits
"project management" and "k-12"		411	no relevant hits

Science Direct Els						
	Keywords			**Hits**		
exact	work based training			0		
exact	childhood development					
exact	childhood development			3556		no direct matches
exact	childhood development			159		no direct matches
	workplace					
exact	childhood development			0		
exact	on the job training					
exact	on the job training			0		
exact	industry training			874		no direct matches
exact	industry training			13		no direct matches
	childhood					
exact	industry training			7		no direct matches
	adolescents					
exact	american industries			70		
	children					

APPENDIX C

PROCESS FLOW CHART


Stakeholders
University PhD Students
Industrial Sectors
Federal Government
Federal government authorizes grant money for long term study
Educational Foundation
Either Revises existing in class courses or creates new distance learning (online) classes
Leadership classes developed
Classes encourage Littles to use leadership learnings on the job and in life
Process repeats year after year for 9 years
Big Brothers Big Sisters
BBBS identifies 10 littles each year for 5 years
Program Littles take online project management classes throughout the school year
Small projects identified by companies and governments
Little is hired by the company for the summer "internship"
Little starts summer project and is assigned a company mentor (project manager)
GREAT JOB!
Littles complete summer project as a project manager
Study results higher percentage of youth attending and completing college vs government statistics
PhD students collects data and analyzes data over a 9 year study period