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Assessments of the Educational Value of Federal Work Study and Community Service at WPI

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Assessments of the Educational Value of Federal Work Study and Community Service at WPI

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1. Introduction

1.1 Objective

The objective of this project is to discover ways to relate federal work study (FWS) at Worcester Polytechnic Institute (WPI) and the associated community service to specific majors at the school. The intent is to take steps toward significantly improving the educational value of the program at WPI and making it one of the best FWS programs in the country.

1.2 Rationale

In recent years, there has been a rise in the amount of college students in the FWS program. The largest increase happened when the rate of undergraduates employed went from 53% in 1994 to 76% in 2009 (Hall 2010). Some of these students found negative effects on their academic performance, as shown in Table 1. According to another study done in 2011, 24% of undergraduates experienced negative impacts on their academic performance as result of time spent at their work study job. This same study found that only 28% of federal work study jobs have a relation to the curriculum offered by respective colleges (Scott-Clayton 2011). The percentage of federal work study jobs offered at WPI that relate to majors is approximately the same, and if more of these jobs incorporated what students learn classes, it may improve academic performance and be useful later on in students' career paths.

Table 1: Work Study Effects on Students in 2009 (Hall 2010)

Question	Percent Reporting no Impact	Correlation with work hours
Hindered ability to devote enough time to study	15.3	.48
Affected performance in courses	17.8	.43
Caused longer time to complete degree	56.0	.35

The FWS program began in 1964 as part of the Economic Opportunity Act. At the time, roughly 90% of public universities' fees and tuition was covered by a students' FWS award. This percentage dropped under 20% by 2016 due to a large increase in the cost of attending college (Scott-Clayton 2017). These findings show why more students are seeking employment while attending college. It could be hypothesized that if more students could use this time to extend what they learn in academics it may go a long way later in their careers.

1.3 State-of-the-art

There are different regulations and requirements of the FWS program set by WPI and by the federal government. WPI sets the wage for federal work study at \$12 per hour and they require each student to complete at least 15 hours of community service each year. The professors and employees at WPI determine what students do in their work study jobs. The federal government requires students be paid at least minimum wage in their respective state, and they also determine if students are eligible to receive a FWS award and how much they can earn per year. The Federal Student Aid (FSA) handbook issued by the United States Department of Education details all of these requirements set by the government. Observe Table 2 outlining in more detail regulations set by WPI and the federal government:

Table 2: FWS Regulations

Federal Government	WPI
Requires students to be paid at least state’s minimum wage	Students paid \$12 per hour (MA minimum wage is also \$12per hour)
Requires at least 10% of FWS to be used towards community service	Students must complete at least 15 hours of community service each year
General recommendations for work study positions	Determines what students can do for work study
Requirements for what is considered work study	Approves/disapproves community service sites
Determines students eligibility for FWS award	Allows approximately 400 undergraduates in FWS program each year

There have been studies done on the issues of the FWS program in recent years. There was study done at Georgetown reporting that approximately 75% of their college students are employed, yet very few relate student’s curriculum. The report suggests there be a “stronger connection” between student jobs and their education, yet no potential solutions are suggested (Smith 2015). Judith Scott-Clayton, an Associate Professor of Economics and Education at Teachers College, Columbia University, has also done multiple reports on the subject. She has conducted many surveys on FWS college students and does a great job summarizing and simplifying the results. Some notable findings from her reports include FWS funding has been nearly cut in half in the past decade and she finds no direct improvement on academic performance as result of being involved in the work study program (Scott-Clayton 2011/2017).

A reason for this may be students do not enjoy the community service jobs they have or students are paid the same rate as their work study for the first 15 hours of community service hours each year. If there is an easy way to relate community service to students' majors, they could be more likely to complete more community service each year.

Different approaches have been taken when writing about the defects of the FWS program. One such approach is on the academic effects of student employment. Scholars Adela Soliz and Bridget Terry Long (2016) conducted a study involving 45,000 college students in Ohio where they found student employment overall has minor negative effects on students' academic performance, such as GPA, but find often times these are outweighed by the positive, long lasting effects such as an improved work ethic. Judith Scott-Clayton has taken this approach in her studies. In 2015 she used data from college students in West Virginia and found no evidence to suggest work study improves academic performance and that women are more subject to the negative effects. She did another study in 2017 where she focused more on the financial aspects of work study. In this report though, she still found slight negative academic effects on academics as a result of work study. One thing to note about Scott-Clayton's studies is she only uses students who participate in work study, whereas Soliz and Long use all types of student employment. While these reports provide useful and substantial information, none have provided a potential solution to fix the problems of the work study program.

Another approach taken is the relation of work study jobs to student majors, which is the main objective of this report. Ashley Smith, a reporter for *Inside Higher Ed*, did a study in 2016 on Georgetown's students who are employed, and found 75% of them find no educational value in their jobs. An older report done by author Patrick Terenzini published in 1996 has more detailed findings about the effects of work study. He found overall, students experienced positive effects in critical thinking skills and no effects in math skills from work study. He used data from the National Study of Student Learning, which takes data from numerous nationwide colleges. Again, however, no solutions to fix these problems are mentioned.

There have been reports done on the community service aspect of work study as well. An Interactive Qualifying Project (IQP) at WPI done in 2009 found most WPI students only do community service because it is a requirement of either the FWS program or another organization (Duncan and Walker 2009). A report done in 2005 by scholars Mickey Fenzel and Mark Pyrot discusses positive effects on students who do community service while in college. They concluded community service helps students with personal responsibility and alumni involvement later in life. Their data was from an unnamed liberal arts college. However, there has been little done on the relation of community service to college education.

1.4 Approach

This project has an approach most similar to that of Judith Scott-Clayton because it includes both work study and community service. The reason for this is students in the FWS program at WPI are required to complete 15 hours of community service each year. One difference is this project elaborates on the possible changes that can be made to WPI's work study program. While many studies outlined above do a great job describing the problems with the program at different schools, none provide solutions that could be made to fix them. No studies mentioned above included an interview with a work study administrator, which is a key addition to this project that makes it different from the others. The overall design of this report is most similar to the IQP done by Scott Walker and Renee Duncan since it was also an IQP done at WPI.

Another difference of this project is only WPI students were surveyed, while most of the studies above surveyed students across different colleges. The survey (Refer to Appendix C) includes similar questions from Judith Scott-Clayton's and Ralph Hall's reports. Both Scott-Clayton and Hall surveyed students to find out if they found work study to be negatively affecting their academic performance, which has also been done here. There is an open-ended question added to the end of this survey to obtain student's thoughts on whether or not they would find the relation of work study and community service to their major helpful. This is another important addition that was not included in any other report explained above.

2. Methods

This project was done in numerous steps. First, the determination was made on what can be changed in WPI's work study program based on statutory and regulatory requirements. The first statutory standard is students qualify for the program based on their financial standings seen on their Free Application for Federal Student Aid (FAFSA). The second is students must be paid at least the state's minimum wage. Many of the regulatory requirements are found in the FSA handbook, which is issued by the U.S. Department of Education each year. The handbook includes requirements for employment conditions, what work study is defined as, and the limitations and rules for community service. There is a tighter restriction on community service, but still is subject to interpretation from the college's work study administrator.

An interview with WPI's work study administrator, Michael DiRuzza, was then conducted. This was done to obtain information about WPI's work study program that is not published online, as well as to determine areas for potential changes so a useful survey could be constructed. (Refer to appendix A for the complete interview.)

After interviewing, a survey was then sent to members of WPI's work study program. Refer to the appendix for the complete survey results. The results from the survey were analyzed and a plan was devised to make changes to WPI's work study based on student's responses. If time allowed, the next step would be the implementation of changes at WPI, which could be something a future IQP group might work on. (Refer to appendix C for the complete survey.)

One last important note is the scope of this project does not include department-funded work study at WPI. The reason for this is federal work study is funded by the government and therefore requires students to complete community service. Work study students who are being paid by WPI's academic departments obviously will experience a much greater educational value since they are mostly working with and assisting professors. There are also many more open positions for federal work study as opposed to department-funded work study.

3. Results and Analysis

As mentioned, the collection of results began with an interview with Michael DiRuzza. One main thing taken from the interview with is what students do for work study is completely up to their supervisor, whether it be a professor or a staff member in an office. This important to note because it could allow for professors to adjust what they have students do in order to make work study a more educative program. Some other important information obtained from the interview with included approximately 400 students are part of the FWS program (or ~10% of WPI's undergraduates) are and the federal government requires at least 7% of the schools FWS funding is used towards community service.

86 students responded to the survey sent to their WPI email address. This is slightly more than 20% of students to whom the survey was sent. Below is a p-value test for question 3 to determine if the percentage of students at WPI who find no negative effect in their academic performance is significantly higher than other colleges, which was approximately 17.8% according to a study done by Robert Hall in 2010.

Question 3: My work study job takes time away from my studies and negatively impacts my performance in classes. 25.6% of students strongly disagreed to this question with 86 total responses.

*Null hypothesis: 17.8% of students find no negative effect (i.e. strongly disagreed to Q3)
Alternative hypothesis: More than 17.8% of students find no negative effect*

Significance level 5%

*Test statistic (z) = $(0.256 - 0.178) / \sqrt{[(0.178 * 0.822) / 86]} = 1.89$*

P-value = $P(z \geq 1.89) = 0.0294$

Since the p-value is less than the significance level (0.05), the null hypothesis is rejected, suggesting the alternative. This means students at WPI do not find work study to interfere at all with their studies is significantly higher than other colleges. Table 3 and Figure 1 show the complete results for survey questions 1 through 5. Theoretically, a student with a good work study job would agree or strongly agree to these questions. (This is why question needed to be reversed for the graph. The original wording was to avoid confusion from students. See below.)

Question 1: My work study job relates to my major at WPI.

Question 2: Any community service I have as a requirement of the work study program has related to my major at WPI.

*Question 3: My work study job does not take time away from my studies and does not negatively impact my performance in classes.

Question 4: I have found educational value in my work study job.

Question 5: I have found educational value in community service I have as a requirement of the work study program.

Table 3: Survey Questions 1-5

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Question 1	8	10	9	27	32
Question 2	3	6	15	27	35
Question 3*	22	42	17	5	0
Question 4	12	28	27	14	5
Question 5	5	20	34	21	6

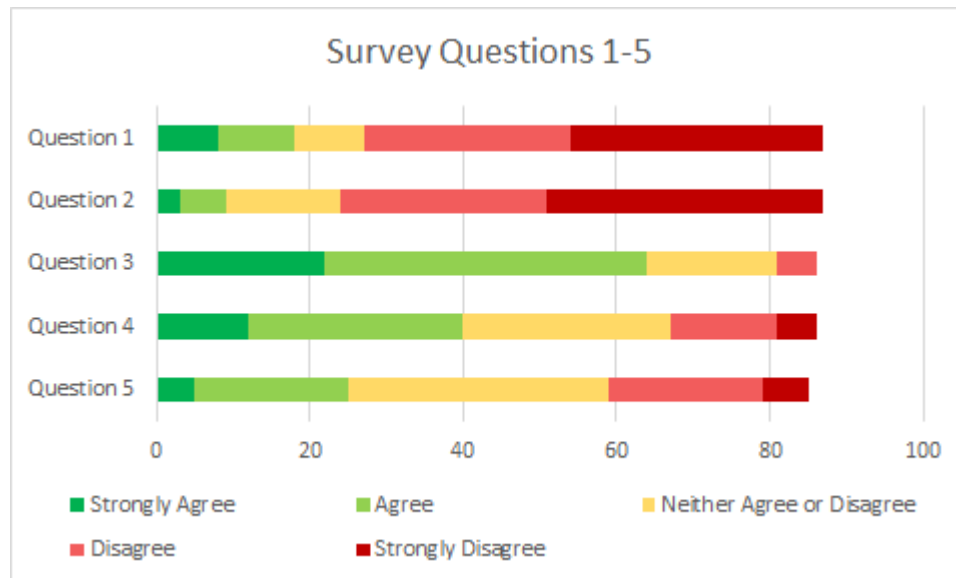


Figure 1

*Please note the actual wording of question 3 is reversed for the purpose of this table and graph.

Figure 2 shows the total amount of students who agreed and disagreed to questions 1 through 5. As mentioned, a student with a good work study job would agree strongly or strongly agree to all questions. There is a total of 173 disagree responses, approximately 4% more than the number of agree responses (156).

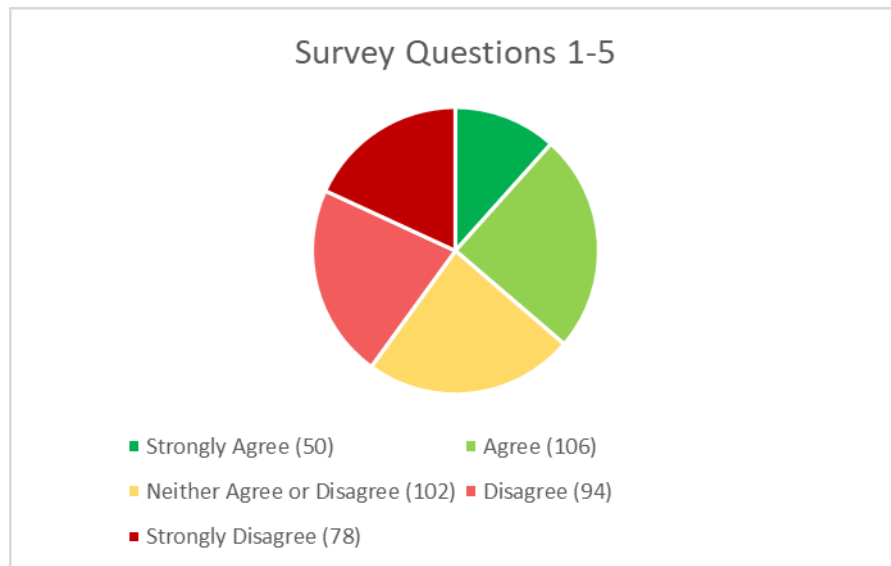


Figure 2

The next 3 questions were designed to know how work study students spend their time outside of class. Below is a table summarizing the results. Please refer to appendix C for the complete results.

*Question 6: On average, how many hours do you spend **per week** do you spend at your work study job?*

*Question 7: On average, how many hours do you spend **per week** do you spend on homework/studying outside of class?*

*Question 8: On average, how many hours **per year** do you spend on community service?*

Table 4: Survey Questions 6-8

Question	Mode Responses
Q6: Work Study (per week)	4 to 5 hours (52.3%)
Q7: Homework and Studying (per week)	11 to 15 hours (32.6%)
Q8: Community Service (per <u>year</u>)	15 hours (59.3%)

The 9th question of the survey was used to obtain students' direct thoughts on whether or not relating work study and community service to their majors would be something they would find helpful. Refer to Appendix D for a summary of student responses. Below is a chart summarizing results. 75 students responded to this question, which is 87.2% of the total survey responses.

Question 9: Do you think relating work study and community service to specific majors would be something that you would find helpful for your career path?

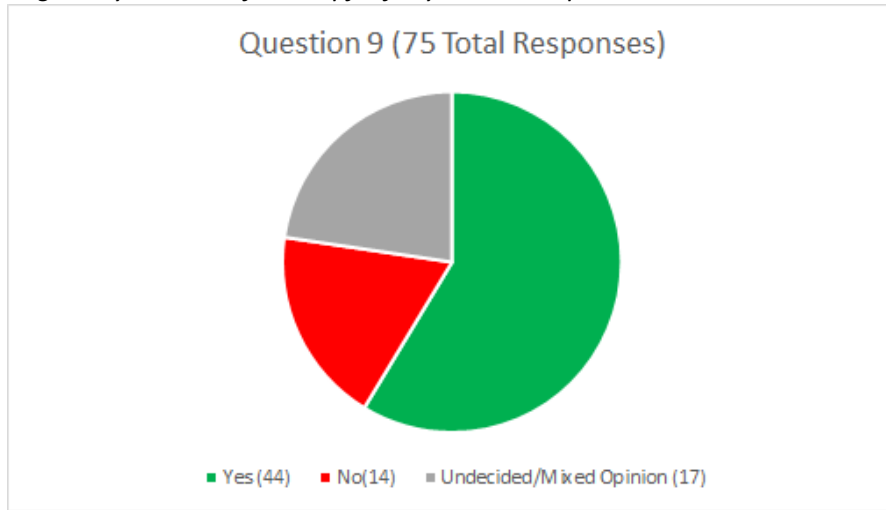


Figure 3

The last (and optional) survey question was used to obtain student email addresses of those who were interested in providing more information or participating in a future survey, which may be useful for a future version of this project. This question had 15 responses (17.4%).

4. Discussion

There are opportunities to change WPI's FWS program to improve educational value. There is no limit to the amount of available work study positions available for students to select from. This would allow WPI's academic departments to open up more available positions for students to work funded by the federal government. The professors in each department could also be encouraged to have students apply what they learn in class to their job or figure out different ways to improve students' overall educational value while working. One important thing to note is there is a set number of students each year WPI allows into its FWS program, which was about 400 in the 2018-19 academic year. This is due to the strict government funding each year, which generally is non-negotiable.

There are opportunities to create new forms of community service that would allow students to build on what they learn in class. For example, instead of having students pick up trash for community service, they could build robots to pick up trash more efficiently. Since this would be more of an indirect help to society, it may not be able to be counted for community service, as explained by Mr. DiRuzza. However, he did mention once the robots were built, maintaining and reprogramming them may be allowed for community service. Nevertheless, this is only one example for students to apply what they learn in academic work while still fulfilling the community service requirements of the FWS program.

Students at WPI find work study to interfere significantly less with their studies than at other colleges. Refer again to the p-test for question 3 shown in the results section. A study done in 2016 found that approximately 17.8% found no negative effects in their academics at nationwide colleges. At WPI, this percentage is 25.8% of the 86 survey respondents. The p-value test determined this was a statistically significant increase.

The majority (58.7%) of survey respondents would prefer their work study and community service jobs relate to their academic work at WPI. This was determined in question number 9 of the survey. Specific students' quotes from this question are listed in Appendix C. Some common responses from those in favor of the changes included that it would help their resumes and give them work experience in their field. Responses from those against changes often included work study helps them develop soft skills and gives them a relaxing break from academics.

There would be many positive and negative effects to changing WPI's FWS program. One positive effect would be the economic and societal effects. If students could apply what they learn at WPI in work study and community service, it could be a much more efficient way of helping the public and environment. Another positive effect would be career building for students at WPI. As mentioned, the implementation of students' major skills at work study and community service jobs would help student's resumes. Professors or other staff members could also greatly benefit from this as they could have more students working with them and doing more effective work.

The negative effects would most likely be less impactful. One potential negative effect would be if more students chose jobs relating to their major, there may be less students to work in offices at WPI, such as the mailroom or Human Resources. This could be solved with the addition of staff members to any office that would need it. Another negative effect might be that students find it to be very stressful continuing their schoolwork in work study and community service. This can be easily solved since students would still freely to choose where they work and can switch jobs from year to year if they desire.

5. Conclusions

5.1 Changes to WPI's FWS program can be made to improve educational value by:

5.1.1 increasing the amount of available positions in academic departments.

5.1.2 encouraging supervisors to have students relate their academic work to their jobs.

5.2 There are opportunities to create new forms of community service that would allow students to build on what they learn in academic work.

5.3 Compared to students at other colleges, students at WPI find FWS to interfere significantly less with their academic performance.

5.4 The majority (58.7%) of survey respondents would prefer their work study and community service jobs relate to their academic work at WPI.

5.5 If changes are made to WPI's FWS program, the positive effects could greatly outweigh the negative effects by giving students the opportunity to obtain a better educational experience.

6. Future Work

6.1 Future Surveys

The last question of the survey asked for students who would be willing to provide more information or participating in another survey, which had 15 responses. This list of students could be useful in the future to send out another survey once a plan is in place make the suggested changes to WPI's FWS program. Once the changes are implemented, an additional survey might be sent out in future years similar to the survey in this report so results can be compared and determine how effective the changes are.

6.2 How changes can be implemented

The suggested changes may take multiple years to be approved and implemented, but would not be very difficult. One way to do this would be talking with Mr. DiRuzza to add more available work study positions and broaden the scope of community service. Another way would be to encourage professors or other supervisors of work study students to have their students do more meaningful work where they could relate their studies. New organizations and clubs could even be created devoted to community service based on majors WPI offers.

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Appendix

A. Interview with FWS Administrator

(Michael DiRuzza-Director of Office Operations in WPI's Financial Aid Office)

*Note: Responses are paraphrased, not exact quotes from the administrator

1. How has FWS program changed since you've been at WPI?

Not much other than fluctuating funding for the program

2. Is what students do in work-study completely up to professors/employees?

Yes, there are suggestions in FSA handbook but not required by law

3. Is the 15-hour community service requirement set by WPI?

Yes, but government requires at least 7% of FWS funds to go to community service WPI uses about 10% towards community service; There has also been talk of community service going away from the FWS program

4. What is the process for accepting student-suggested community service sites?

He (DiRuzza) or someone else in the office would approve or deny the request; There are federal guidelines to follow (i.e. no religious affiliation)

5. About how many WPI students are in FWS program?

About 450 students or 10% of undergraduates

6. Would you be willing to collaborate?

To an extent, but he is not sure how much could be changed due to tight restriction on funding; Most of what could be changed would be up to department heads

B. Charts and Graphs from Previous Reports (Recreated)

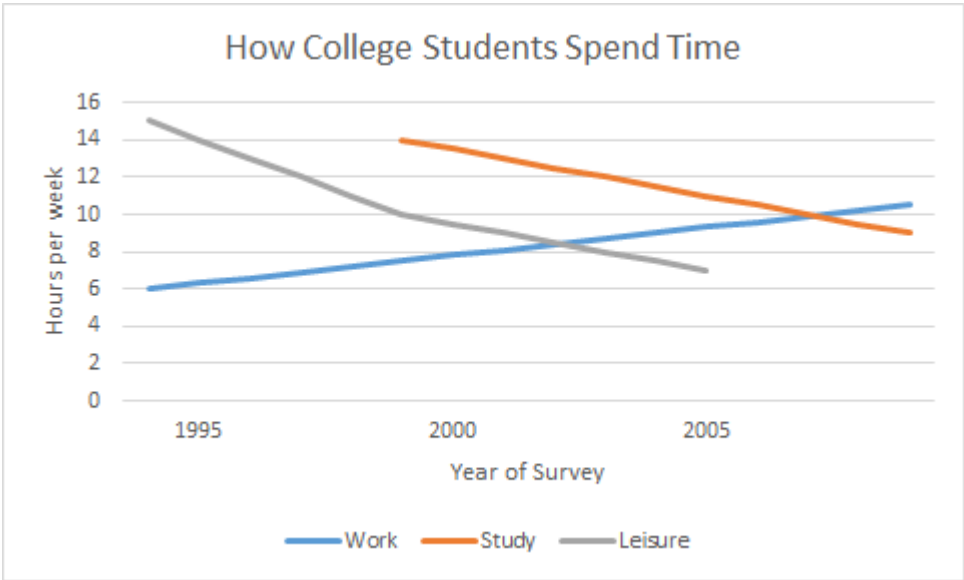


Figure B1: Time Spent of Work, Study, and Leisure (Hall 2010)

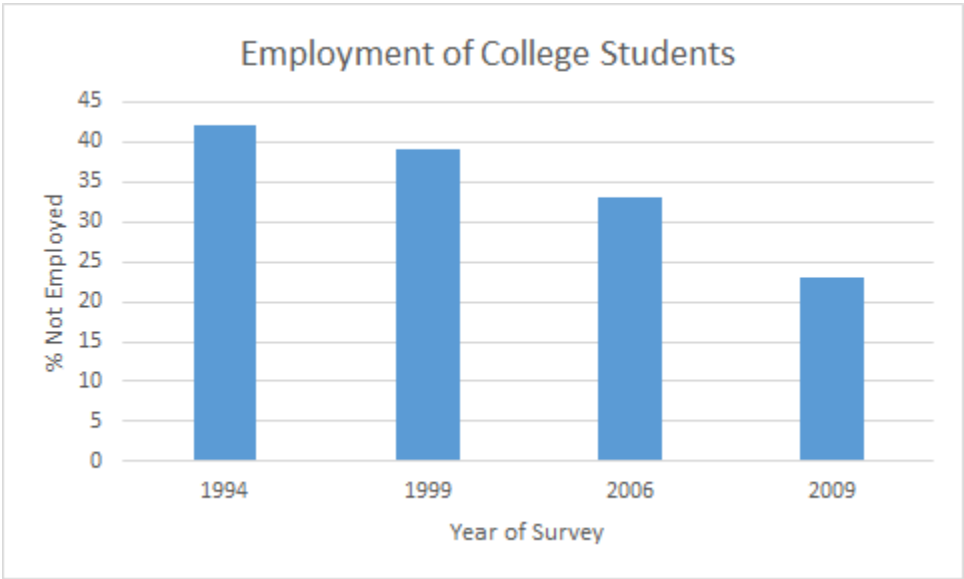


Figure B2: Percentage of College Students Not Employed During Studies (Hall 2010)

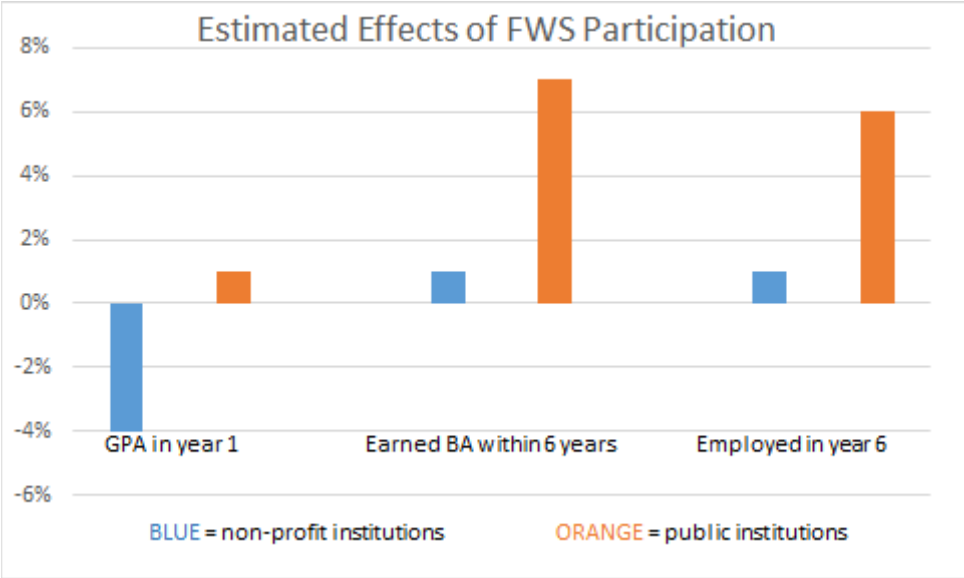
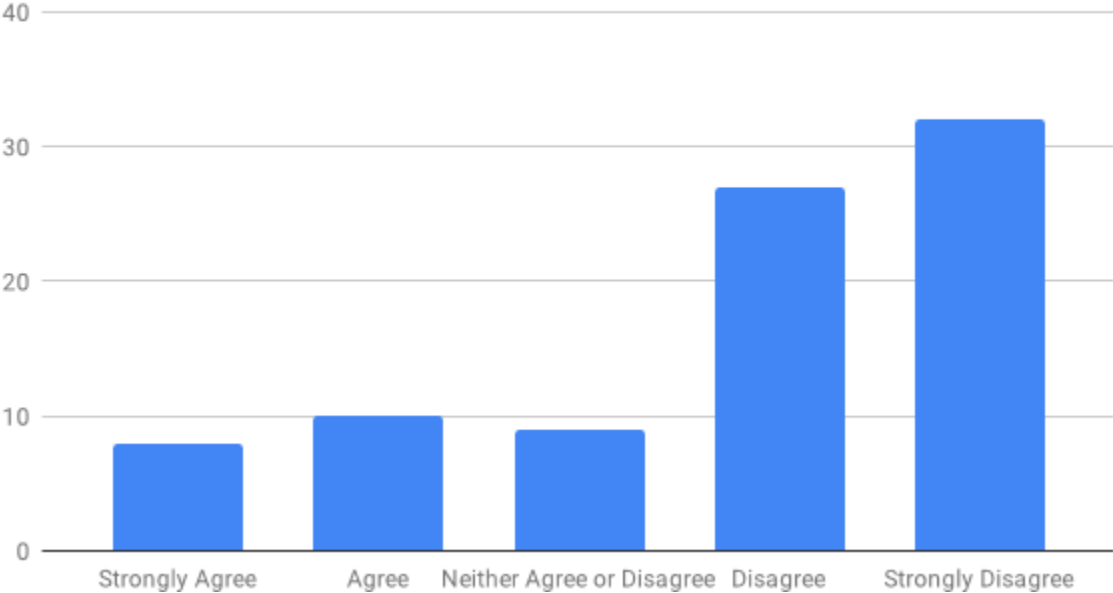


Figure B3: Estimated Effects of FWS Participation (Scott-Clayton 2017)

C. Survey

#1: My work study job relates to my major at WPI.

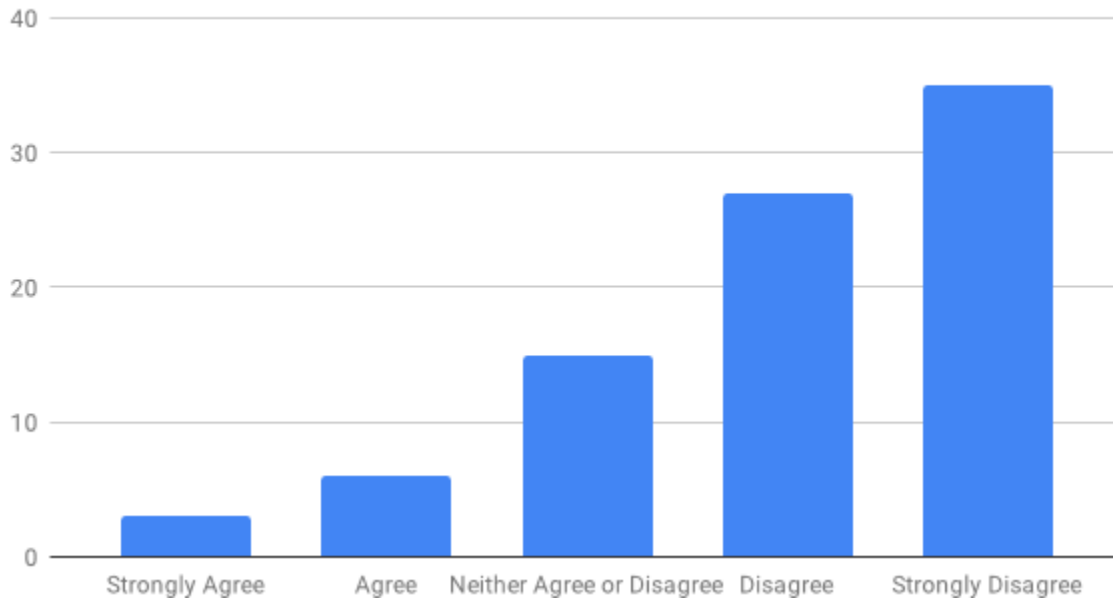
Question 1



Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
8	10	9	27	32

#2: Any community service I have as a requirement of the work study program has related to my major at WPI.

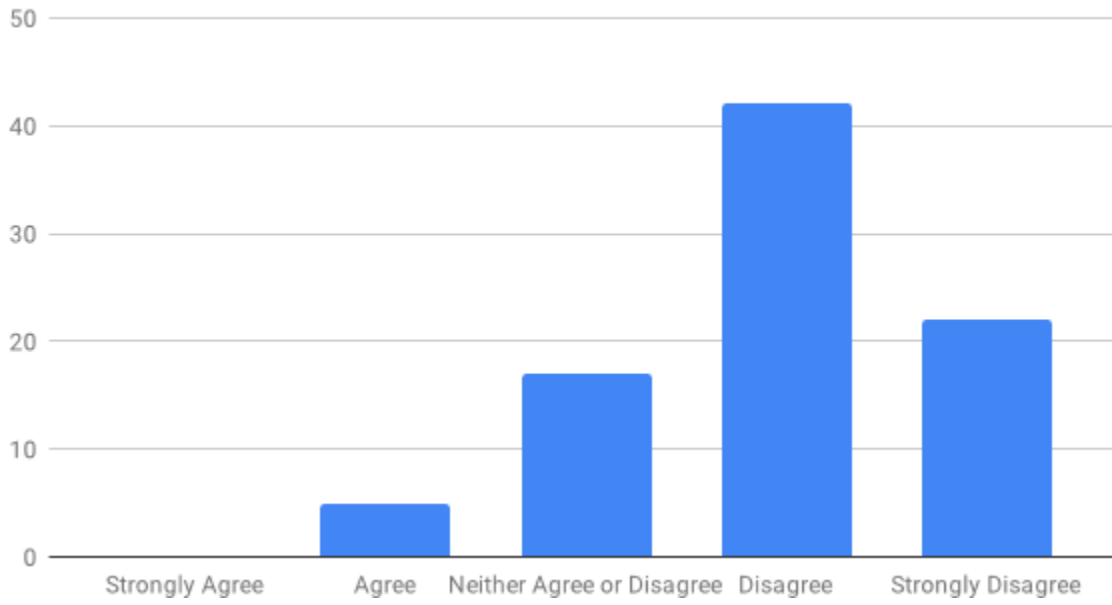
Question 2



Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
3	6	15	27	35

#3: My work study job takes time away from my studies and negatively impacts my performance in classes.

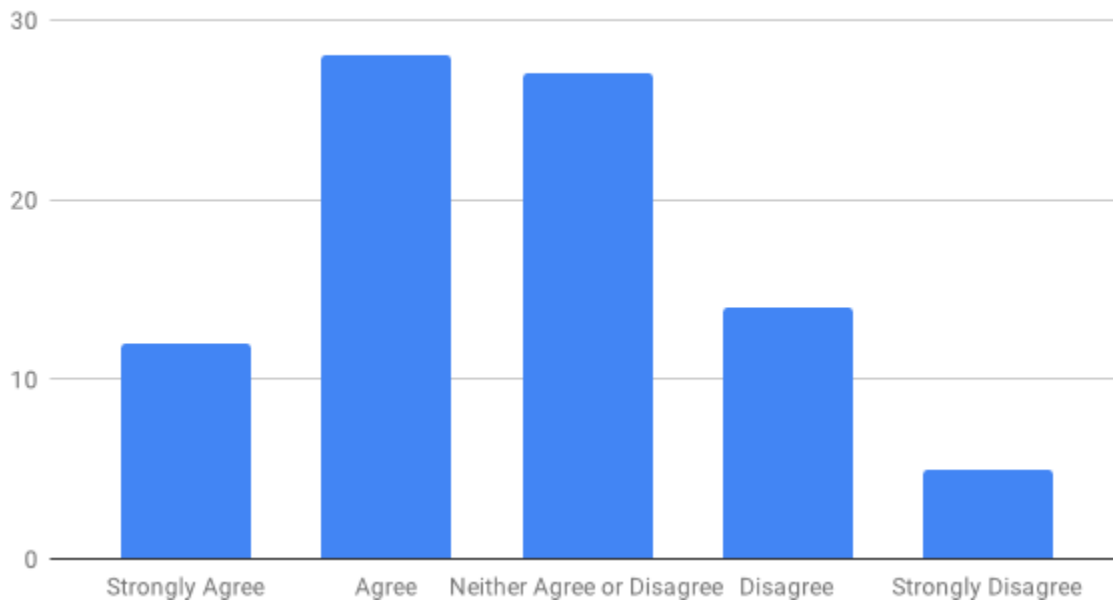
Question 3



Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
0	5	17	42	22

#4: I have found educational value in my work study job.

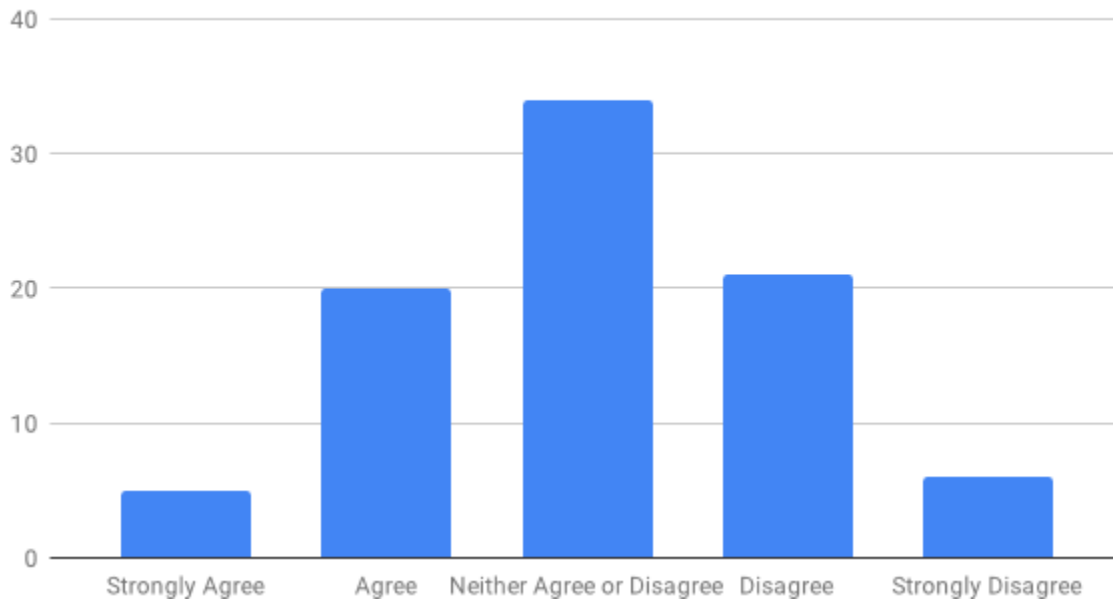
Question 4



Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
12	28	27	14	5

#5: I have found educational value in community service I have as a requirement of the work study program.

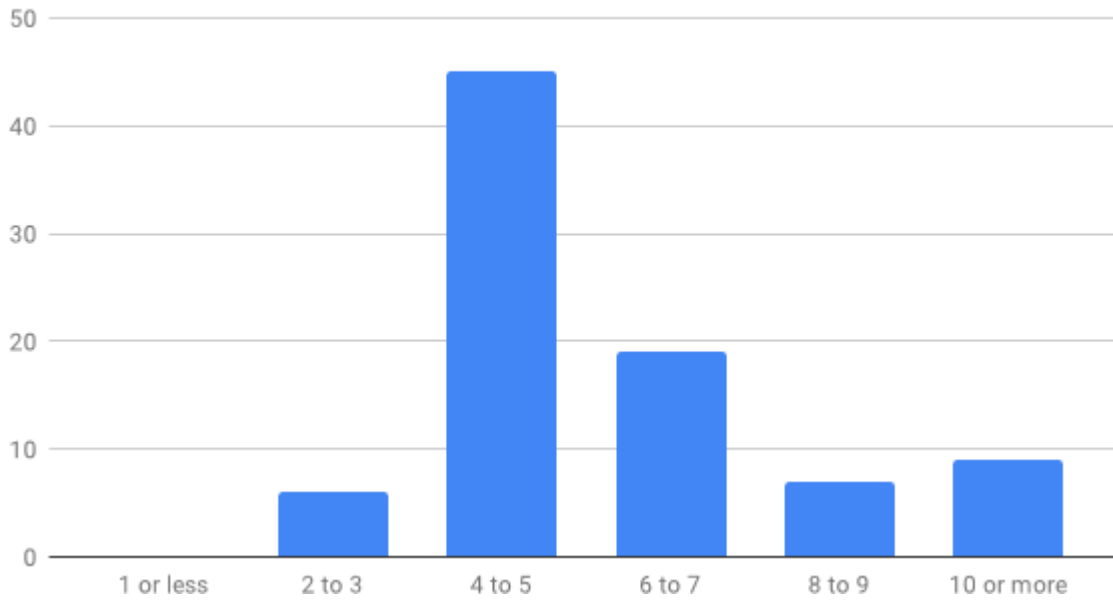
Question 5



Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
5	20	34	21	6

#6: On average, how many hours do you spend **per week** do you spend at your work study job?

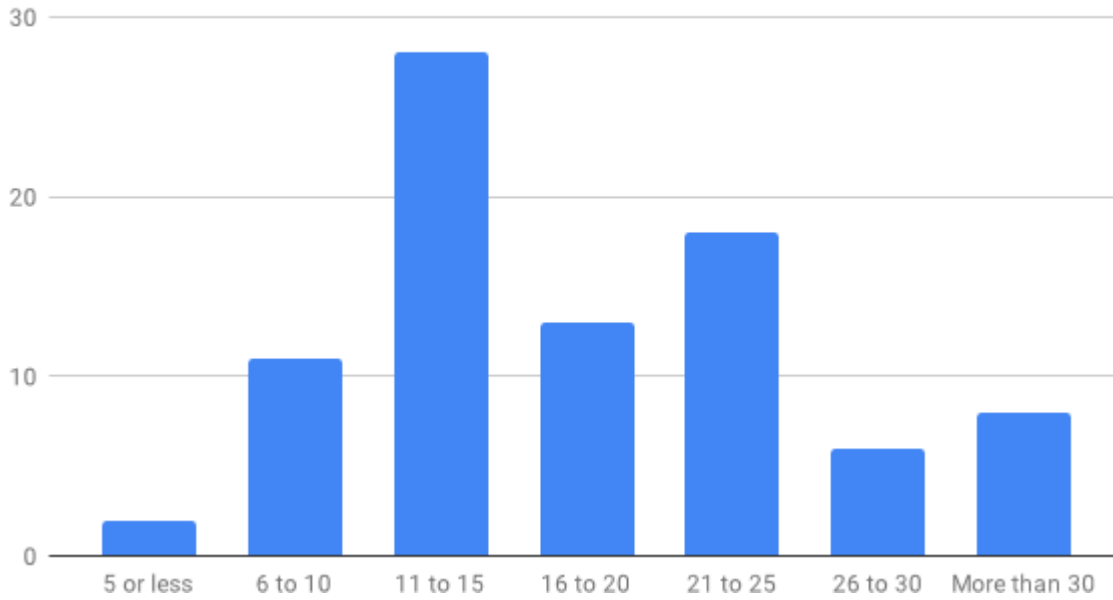
Question 6



1 or less	2 to 3	4 to 5	6 to 7	8 to 9	10 or more
0	6	45	19	7	9

#7: On average, how many hours do you spend **per week** do you spend on homework/studying outside of class?

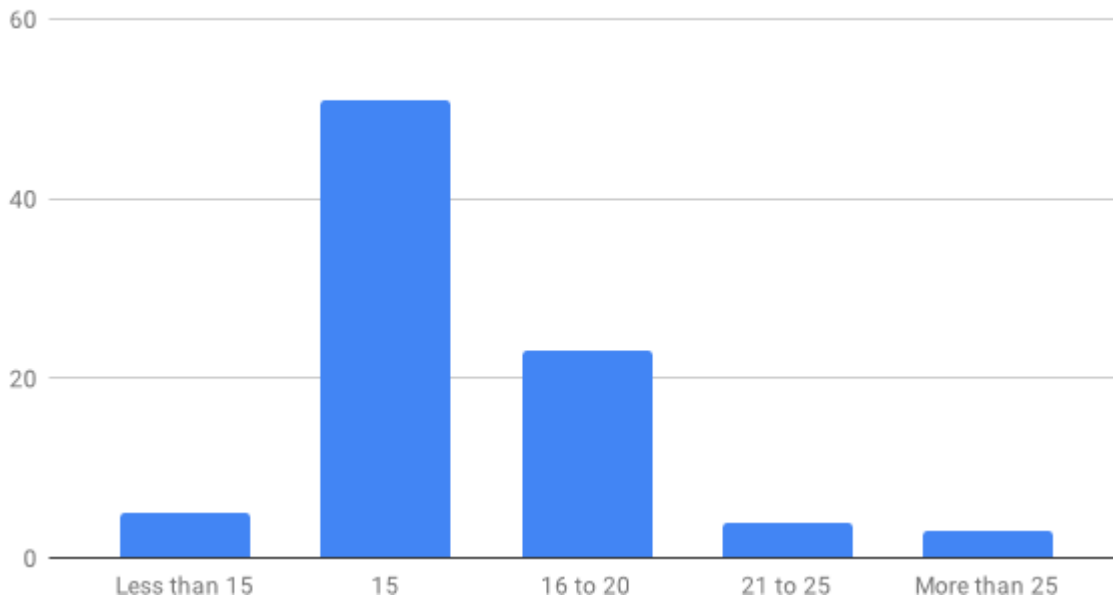
Question 7



5 or less	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	More than 30
2	11	28	13	18	6	8

#8: On average, how many hours **per year** do you spend on community service?

Question 8



Less than 15	15	16 to 20	21 to 25	More than 25
5	51	23	4	3

#9: Do you think relating work study and community service to specific majors would be something that you would find helpful for your career path? Please enter any comments or suggestions you may have.

Notable Answers:

“That seems like it could be helpful but at the same time it might be hard to find quality community services that relate to student's majors because a lot of people leave the community service hours to the last term and end up doing just random things to get the hours done.”

“No, work study allows us to explore other fields that do not pertain to the career path we have chosen, which, for some people, has shown them that they want to take a different career path.”

“Personally, my work study does not relate directly to my major, but I do find myself developing valuable soft skills that will facilitate my experiences during my future career path. I believe IQP/MQP and co-ops are the best opportunities for direct major experience.”

“Yes, it would be very helpful to figure out whether this is the right career path for me or not. And also give me more experience which will give me higher chances in getting internships. Having a work-study and community service to specific majors will make the job/volunteering for interesting rather than feeling like I am doing it only because I am obligated to do it.”

“It could be useful, however I like that my work study is different than my major so it feels like I'm not constantly working on projects, research, and homework. If I wanted a job that related to my major, I would do research or other projects with professors.”

“Yes I think this would be super helpful, I have been thinking about changing my campus job to something that's a little more similar to my major just because I need to learn a lot to be able to safely do my job considering I work with the chemistry department but am an RBE/ME major.”

“I would be very helpful. Personally I spend most of my time on work study and academics. I have very little time to get involved in clubs related to my major or work on my own projects. Unfortunately, employers often prefer candidates who have these kinds of relevant project experience on their resume. If my work study were related to my major, I would be able to gain relevant project experience without having to sacrifice my work study or academics.”

#10: If interested, you may leave your WPI email address if you are interested in providing more information or participating in another survey.

14 students were interested out of 86 survey participants.

