

Developing Teaching Internships for Science and Engineering Undergraduate Students and Project Team Reflection (Evaluation)

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Abstract

The National Science Foundation implemented the *Robert Noyce Teacher Scholarship Program* to encourage science, technology, engineering and mathematics (STEM) majors to transition into K-12 education. One of the aims for grants awarded through this program is to increase the number of current STEM undergraduate majors who are exposed to the teaching profession and who then apply to secondary science or mathematics education certification programs. This paper provides an overview of a paid teaching internship program developed for current STEM undergraduates, the evaluation of the program's ability to impact the participants' learning and career plans, and the project team's insight from their experience running this unique program. This education internship program currently places students with secondary STEM teachers where they first observe and assist in the classroom, and finally, design and teach lessons under supervision. The experiences of approximately 82 interns were probed during interviews with the program evaluator at the end of the respective intern's semester program (90.1% of all the interns participated in exit interviews). Questions asked during the semi-structured exit interviews were designed to gather information about students' experiences, gauge their expectations for the program, document what students learned within the program, and monitor the impact of the internship experience on their careers. While only a subset of students reported that they definitely wanted to teach and were looking into graduate programs in education, other interns stated that they would consider teaching at some point within their careers.

Introduction

Since the 1980s, educational researchers have warned of the shortage of highly qualified science and math teachers.¹ Currently, the demand for qualified science and mathematics teachers outpaces the supply, especially in high-need schools.² The response to this warning has been two-fold: to enact strategies to retain teachers³ and to recruit more teachers into the profession.⁴ Teacher education programs, school districts, state, and funding agencies have attempted to address shortages by implementing various programs and incentives intended to recruit new science, technology, engineering, and mathematics (STEM) teachers¹.

The National Science Foundation (NSF) *Robert Noyce Teacher Scholarship Program* was founded in 2002 through the NSF Authorization Act and was last reauthorized in 2010. The purpose of the program is to recruit and prepare STEM majors and/or professionals to become K-12 teachers in high-need areas. The Noyce Program aims to promote teaching as a viable career option to those with strong STEM backgrounds who might otherwise not have considered a career in teaching. This paper provides an overview of a teaching internship program developed to encourage current undergraduate STEM majors to consider teaching as a profession. While many such internship programs exist across the nation, some as a part of Noyce programs, very little literature addresses the effectiveness of these types of recruiting experiences.⁵

In their recommendations to attract science teachers into the profession, Luft et al. suggested that recruitment experiences should provide similar experiences as given to pre-service teachers.⁴ Candidates should be immersed in authentic field placements and have the opportunity to reflect on STEM teaching and learning. They should face the successes and challenges of actual science teaching rather than participating in less authentic experiences such as tutoring, assisting in after school programs, or working in informal STEM education outreach programs.

Our prior work explored why undergraduate STEM students pursue internships in teaching.⁶ We found that most applicants pursued the internship opportunity to help them make career choices and to gain more experience. Participants had considerable experiences working with youth, and wanted to teach at some point in their careers. We also found that these applicants felt a sense of belonging in their STEM departments. Interestingly, the applicants highlighted different attributes needed to be a teacher versus a STEM professional. When describing attributes of teachers, social skills were mentioned most often and academic skills were mentioned least often. When describing STEM professionals, academic skills were mentioned most often and social skills were mentioned least often.

The location of the internship might impact of the experience on the participant. In their study of the impact of paid internships developed as part of a Noyce program, Worsham et al. found that that paid internships offered in the summer at informal science education sites, such as nature centers and museums, were not an effective pathway to immediately recruit students into STEM teaching programs.⁷ It should be noted that some of the interns within their program indicated they would consider a teaching career later in life. Furthermore, even when students are in formal science education sites, the literature indicates that it is important for interns to hold particular prior beliefs about teaching. In their study of the effectiveness of internships within a formal secondary science classroom, Tomanek and Cummings concluded that the positively held beliefs of interns about teaching were reinforced by their very positive experiences in the classroom.⁸ Of the fifteen interns in their program, three moved directly from their undergraduate STEM degree programs into science teacher education programs.

Overview of Internship Program at Our Institution

One facet emphasized within the Noyce program at our institution was offering paid teaching internships to increase the number of STEM majors exposed to the teaching profession. This program invited STEM majors to apply for one semester education internships and work between 6-10 hours per week with a cooperating teacher. Initially, the STEM major was encouraged to observe and assist in the classroom, and later to design and teach lessons under supervision. The specific times the interns spent within the classroom each week were influenced by the course schedules of the interns and their cooperating teachers. In most instances, the interns participated for one to two class periods three days a week. Most students only participated a single term, which ensured that a larger cohort of students was able to experience the teaching internship. However, eight (8) interns applied for and were selected for a second term (6.8% of the 118 total participants). The program initially paired undergraduate participants with elementary teachers (Cohorts 1-3) and then switched to high school teachers (Cohorts 4-8). This change was made in response to formative assessment by the PIs from participant focus groups that suggested the students wanted to experience high school classroom management rather than elementary schools.

Recruiting and Applicant Selection

Several strategies were used to recruit students for this program: visiting introductory engineering courses to discuss the internship programs, distributing emails through undergraduate program coordinators, and posting flyers about the program throughout campus (see Appendix A). To help students understand the program logistics prior to completing the application, informational sessions were held. During each of these sessions, a program representative outlined the nature and logistics and of the teaching internship program, responded to students' questions, and explained application procedures. Interested undergraduates were then encouraged to submit their application materials either on paper (Cohorts 1-4) or online (Cohorts 5-8). Feedback from interns to the program management team was used to narrow the number of recruiting strategies to only those that participants identified as being the most informative.

Applications were reviewed by members of the program management team at the beginning of each semester after applications were due, and applicants who appeared to align well with the goals of the internship program were then invited for face-to-face interviews. During the interviews, applicants were asked for their reasons for pursuing the internship, prior experiences, and interest in becoming a teacher. The number of applicants and selected students during each of the cohort cycles (Cohorts 1-8) is found in Appendix B. A majority of the interns within this program were engineering majors from a range of the engineering disciplines offered at our institution. While the majority of applicants to this program and accepted interns to this program were from majority ethnic/racial groups within STEM, the program had a high percentage of female students (Appendix B, Table 4).

Preparation of Cooperating Teachers and Selected Interns

The project manager contacted principals at participating schools to gauge their interest in hosting interns. Once a principal had committed, members of the project team determined the number of interns who could be placed at the school and arranged for on-site orientations for teachers and interns. During the teacher orientation, the project team emphasized the lack of teaching experience of the interns, the need to help interns integrate into the classroom dynamic, and the opportunity for teachers to take advantage of the interns' STEM content knowledge. The intern orientation session highlighted the classroom responsibilities and communication expectations of the teacher as well as other professional attributes the interns needed (timeliness, dress code, etc.). In later intern cohorts, the interns and the cooperating teachers were provided with a handbook developed by the program team to clearly define expectations based on feedback from these groups in earlier years. The project team worked to place students in classroom), although this was not always possible. Interns were paid an hourly stipend for their time spent in the classroom, at orientation sessions, and at periodic meetings with members of the project team. Teachers were paid an honorarium for their participation.

Description of Participants

The number of applicants placed in internships ranged between seven to twenty-one during each of the eight semesters. The smallest number of participants accepted within a cohort occurred when the project management team shifted from providing internships within an elementary

school setting to a high school setting (Cohort 3). In total, 91 students participated in the teaching internship program (Cohorts 1-8). A limited number of interns (n = 8) were selected to participate in sequential terms. Participants' demographic, major and grade point average (GPA) information is compiled in Appendix B. The majority of participants were science and engineering majors, with few math majors, with all having GPAs above 3.0 out of 4.0.

Evaluation of the Intern Experience

To understand the intern experience, annual reports generated by the program evaluator were reviewed. The program evaluator interviewed the interns at the conclusion of their internships, starting with Cohort 3, with the purpose of providing the project team with information to improve the program. Interviews of between 10 to 15 minutes were completed with 90.1% of the interns. Each cohort report provided information on the reasons interns decided to apply for and join the internship program, their experiences within the program, what they learned from the program, and whether they decided to pursue teaching as a career path. The questions asked within these interviews are reported in Appendix C.

Insights and Best Practices Emerging from Intern Interviews

Most Effective Recruiting Methods

While several formal and informal recruiting methods were used to attract applicants to the internship program, all interns stated that they learned about the program through an email rather than through prior participants, websites or classroom visits.

Reasons for Participating in Internship Program

Most participants expressed an interest in teaching prior to applying to the program. Although participants cited many reasons for applying to the program, most of those reasons related to the students' interest in determining their future careers. Collectively, the participants were academically successful within their current majors, but had prior interest in teaching and wished to explore a potential future career in teaching. They expressed a desire to compare teaching with their current major, to learn more about the profession of teaching, to try a possible teaching career, and to see if teaching could be a backup career plan. Some also stated that they were encouraged by family to consider a teaching career. In addition, one or more participants in each cohort expressed that they pursued the internship for financial reasons (needed a job and/or money). Four of the students who had completed multiple internships through this program also mentioned that they participated repeatedly because they enjoyed the experience.

Expectations Prior to Participating in Internship Program

In Cohort 3 and 4, most interns initially stated that they were unsure about the expectations from the internship. This number dropped significantly for later cohorts to only one or two students per cohort.

The interns who did have clear expectations stated that they thought that the experience would be similar to student teaching (Cohort 3). This group also conveyed expectations of the project team remaining in continuous contact with the cooperating teachers. Later cohorts, however, expressed no such expectations. Some interns indicated an expectation of observing the

cooperating teacher and putting those observations to use in teaching those students. Some participants expressed a belief in learning about teaching in a high school setting.

Intern Perception of their Classroom Experience

As part of the program, the interns were encouraged to integrate into the classroom. Activities included observing their cooperating teacher, administrative activities, helping students with assignments, and teaching partial or full lessons. During the first few cohorts, the interns spent a great deal of time observing the teachers. This feedback was used by the project team during both the teacher orientation sessions and the handbook for teachers and interns to clarify that only a portion of the day could be spent observing.

Intern Reflections on Teaching Profession

During the internship, participants reported gaining insight into the nature of teaching (the level of effort, time and skill required) and students (the variety of their ability levels and needs). Interns conveyed to their interviewers their new understanding of the difficulty of teaching, particularly in mastering the requisite skills needed for success. Some also noted that teaching is about both the knowledge of one's subject combined with a concern for student success. Some interns reported acquiring insight into the various teaching methods and strategies of behavior management, motivation techniques and teaching strategies. Interns were also not always aware of the diversity of high school student preparation, highlighting ranges of student ability levels and needs. Relative to their own memories of high school, some interns found that the high school students were more engaged than expected, while others were surprised by either a lack of motivation or respect shown by the students. Some interns expressed surprise at the amount of preparation needed to teach, and two others expressed surprise at the pressure placed upon teachers related to preparing their students for standardized testing.

Challenges Experienced by Interns in the Classroom

The transition into the classroom presented challenges to students in terms of (1) building rapport and interacting with high school students, (2) classroom management, student motivation, preparing lessons and (3) building a relationship with their cooperating teacher. Very few, however, expressed difficulties of a professional nature (e.g. arriving to class on time, prepared and appropriately dressed).

Impact of Internship Program on Future Career Plans

Overall, the interns reported that the internship experience helped determine the directions of their future careers (Appendix B, Table 6). The number of students in each cohort who indicated that they wanted to go directly into teaching ranged between 42.9% to 16.7%, which was either larger or equivalent to the number of interns indicated no desire to pursue a teaching career upon completing their internship. Within Cohort 8, seven of the fifteen interview participants indicated a decision regarding pursuing a teaching career, with five of those expressing a definite desire to teach and who were researching various education graduate programs. Other interns indicated a desire to pursue teaching later in their careers after engaging in employment related to their current major. 'Owing' it to themselves to first undertake careers in their major and deferring a teaching career until starting a family were two reasons interns provided when asked why they would defer a career in teaching.

It is important to note that even those who expressed no desire to pursue a teaching career did indicated positive benefits from their participation in the internship. These interns highlighted that they gained professional skills from the classroom (e.g., public speaking, confidence) and an ability to convey content to a broad audience. Some interns reported that they would use teaching skills in the skills developed in the classroom in their respective career paths (e.g., nursing educators, nutrition outreach to students, military leadership, or conducting workshops in industry).

Reflections of the Project Team on Best Practices

The members of the program management team currently within engineering disciplines were surprised at the interest in this program among the engineering majors, who, in all likelihood, would have viable career options open to them upon graduation. The interns in the engineering disciplines accepted into the program all had high cumulative GPAs: 34.4% were above 3.51 and 82% were above a 3.01. In addition, a high number of applicants from engineering disciplines applied to most of the terms offered during the program period. However, those project team members from education-related departments reported receiving inquiries periodically each semester from STEM majors seeking immersive experiences within the classroom setting. These findings align with prior reports that undergraduates in STEM still look at non-traditional careers after completing their undergraduate degrees even when considered to be excelling traditionally (as signified by indicators such as GPA).

This internship program was different from other teaching immersion experiences since the interns had little if any training in teaching pedagogy, lesson planning or classroom management. Therefore, clear and consistent communication between the program management team and cooperating teachers was required. Although our internship participants had core science, mathematics or engineering content knowledge, they lacked expertise and even exposure to common teaching practices. This lack of expertise was of concern among our first cohorts who interned in high schools. Consequently, our external evaluator suggested that we educate our cooperating teachers in the mission and philosophy of our internship program and provide clear expectations to them about the roles of their interns in the classroom. Our evaluator reports indicated that communication between the project team and the teachers did not ensure that all teachers had the same expectations for their interns. Therefore, by Cohort 5, we found it beneficial to create a checklist that provided information about potential intern experiences (e.g., observing other classrooms, helping with independent work, leading a warm-up activity, teaching a lesson) and when the experiences should be completed. The dissemination of this checklist with both the teachers and interns at the orientation sessions greatly improved the program.

It was also determined that interns in this particular program should be provided with time to reflect on their efforts, and supported with occasional workshops on lesson planning. Consequently, we included intern meetings so that students could learn about, and network with other interns. Although interns did state they received the support necessary for success, some conveyed a lack of preparation for the internship activities because their cooperating teachers did not provide them with the requisite help. Owing to the difficulty of scheduling internships for

STEM students who are expected to attend class regularly to keep up with the rigors of their studies, we suggest moving the recruiting and application selection process to the prior semester and prior to course registration, so they may better match their schedules to that of the cooperating teachers.

Acknowledgements

This project was supported by a grant from the National Science Foundation, #DUE- 1136293 associated with the Robert Noyce Teacher Scholarship Program. The authors gratefully acknowledge the patience and guidance of our institution's Institutional Review Board staff.

References

- 1. Abell S, Boone W, Arbaugh F, et al. Recruiting future science and mathematics teachers into alternative certification programs: Strategies tried and lessons learned. *J Sci Teacher Educ*. 2006;17(3):165-183.
- 2. Ingersoll RM, Perda D. Is the supply of mathematics and science teachers sufficient? *Am Educ Res J.* 2010;47(3):563-594.
- 3. Ingersoll RM, Smith TM. Do teacher induction and mentoring matter? *NASSP Bull*. 2004;88(638):28-40.
- 4. Luft JA, Wong SS, Semken S. Rethinking recruitment: The comprehensive and strategic recruitment of secondary science teachers. *J Sci Teacher Educ*. 2011;22(5):459.
- 5. Allen MB. Eight Questions on Teacher Recruitment and Retention: What Does the Research Say?. *Educ Comm States*. 2005.
- 6. Kennedy MS, Benson L, McGough C, Cook M. Identifying Why STEM Students Seek Teaching Internships. In: *2015 ASEE Annual Conference & Exposition*. Seattle; 2015:26.878.1-26.878.10. doi:10.18260/p.24215.
- 7. Worsham HM, Friedrichsen P, Soucie M, Barnett E, Akiba M. Recruiting science majors into secondary science teaching: Paid internships in informal science settings. *J Sci Teacher Educ*. 2014;25(1):53-77.
- 8. Tomanek D, Cummings KE. The use of secondary science classroom teaching assistant experiences to recruit academically talented science majors into teaching. *Sci Educ*. 2000;84(2):212-227.

Appendix A: Program Overview

Table 1: Overview of program activities.

	Year	2012	20	13	20	14	20	2016	
	Term	Fa.	Spr.	Fa.	Spr.	Fa.	Spr.	Fa.	Spr.
ing jies	Visiting introductory engineering courses to discuss internship program	X	X						
Recruiting Strategies	Emails from program manager to student advisors	X	X	X	X	X	X	X	X
S R	Hang up flyers on campus	X	X	X					
	Informal seminar(s) on program	X	X	X	X	X	X	X	X
ool em t	Elementary school	X	X	-	-	-	-	-	-
School Placem ent	High school			X	X	X	X	X	X
Application Steps	Download form posted on website and emailed to program coordinator	X	X	X					
plicati Steps	Online application (Google Form)				X	X	X	X	X
Ap	Interviews			X	X	X	X	X	X
l Classroom	Participant input on which teaching content areas they felt comfortable with (science, biology only, chemistry only, biology or chemistry, math)			X	X	X	X	X	X
nship withir	Check by local law enforcement on participants prior to working within a school (e.g. South Carolina Law Enforcement Division	X	X	X	X	X	X	X	X
Iter	FERPA Consent Form	X	X	X	X	X	X	X	X
aching In	Confirmation that participant was not on sex offender list prior to placement at school	X	X	X	X	X	X	X	X
Tes	Tuberculosis Test	X	X	X	X	X	X	X	X
k Prior to Formal Start of Teaching Internship within Classroom	Discussion of reporting obligations of grant and request for participants to consent to allowing administrators to use their responses IRB Consent Forms	X	X	X	X	X	X	X	X
to F	Orientation with GoalPost program	X	X						
Prior	Orientation at university prior to visiting high school			X	X	X	X	X	X
	Orientation at high school prior to observing			X	X	X	X	X	X
Paperwor	Interns and cooperating teachers provided internship 'handbook' prior to beginning the program				X	X	X	X	X
uip 15	Mid semester intern debrief meeting- 1^{st}	X	X	X	X	X	X	X	X
Internship check-ins	Mid semester intern debrief meeting- 2^{nd}	X	X	X	X	X	X	X	X
Inct	Mid semester intern debrief meeting- 3^{rd}					X	X	X	X
Final	Internship time sheet submitted at end of semester	X	X	X	X	X	X	X	X
Paperwork	Write up of experience			X	X	X	X	X	X

Appendix B: Participant Self Reported Demographics and Academic Standing

Table 1: A high number of applications were received each term and the number of interns selected for each cohort was within the range of seven (7) to twenty-one (21).

Cohort #	Elementary Schools hosting interns	High School hosting interns	Applicants	Applicants Undergoing Interview	Interns	Interns new to program	Participants completing exit interviews	Participants completing exit interviews
	(Count)	(Count)	(Count)	(%)	(Count)	(%)	(Count)	(%)
1	6	-	-	-	16	100%	-	-
2	6	-	-	-	18	78%	-	-
3	-	1	18	78%	7	100%	7	100%
4	-	1	44	36%	10	100%	9	90%
5	-	2	54	78%	19	100%	18	95%
6	-	2	56	63%	18	89%	17	94%
7	-	2	68	41%	21	100%	16	76%
8	-	2	61	52%	16	94%	15	94%

Table 2: A large proportion of interns were from under-represented groups within STEM.

Participants from underrepresented groups in STEM							
Cohort #	Participants	Racial or Ethnic Underrepresented Wom Groups in STEM					
	(Count)	(%)	(%)				
1	16	6.3%	56.3%				
2	18	5.6%	38.9%				
3	7	42.9%	85.7%				
4	10	0.0%	80.0%				
5	19	10.5%	42.1%				
6	18	11.1%	66.7%				
7	21	0.0%	81.0%				
8	16	18.8%	75.0%				

	Cohort #		1	2	3	4	5	6	7	8
	Below 2.50	(%)	6.3%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	2.51-3.00	(%)	6.3%	22.2%	14.3%	0.0%	21.1%	5.6%	19.0%	25.0%
	3.01-3.50	(%)	31.3%	22.2%	28.6%	30.0%	36.8%	33.3%	47.6%	37.5%
College GPA	3.51-4.00	(%)	31.3%	38.9%	57.1%	70.0%	42.1%	61.1%	33.3%	37.5%
of Participants	Did not have earned university credits to calculate GPA	(%)	18.8%	11.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	No GPA report on application	(%)	6.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3: Most interns within the program had a cumulative GPA above a 3.01.

Table 4: Participants within the internship program represented a range of academic standings, from freshman to seniors.

	Cohort #		1	2	3	4	5	6	7	8
Class Standing of Participants	Freshman	(%)	25.0%	55.6%	0.0%	40.0%	0.0%	22.2%	0.0%	25.0%
	Sophomore	(%)	50.0%	0.0%	14.3%	40.0%	15.8%	22.2%	9.5%	18.8%
	Juniors	(%)	6.3%	5.6%	42.9%	10.0%	31.6%	38.9%	52.4%	18.8%
	Seniors	(%)	18.8%	38.9%	42.9%	10.0%	52.6%	16.7%	38.1%	43.8%
	Not reported	(%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5: Most participating interns were pursuing engineering or science undergraduate degrees.

		Major of P	articipants			
Cohort #	Computer Science	Engineering	Math	Science		
	(%)	(%)	(%)	(%)		
1	12.5%	62.5%	6.3%	18.8%		
2	11.1%	61.1%	5.6%	22.2%		
3	0.0%	0.0%	0.0%	100.0%		
4	10.0%	40.0%	20.0%	30.0%		
5	0.0%	52.6%	15.8%	31.6%		
6	5.6%	33.3%	11.1%	44.4%		
7	0.0%	42.9%	23.8%	33.3%		
8	0.0%	37.5%	12.5%	56.3%		

Table 6: After completing the program, participants reported on their career trajectories and the role of teaching within the future plans.

Career Pathways After Program	Cohort 3	Cohort 4	Cohort 5	Cohort 6	Cohort 7	Cohort 8
Definately want to teach and are						
looking into graduate programs in	3 (42.9%)	2 (22.2%)	3 (16.7%)	3 (17.6%)	6 (37.5%)	5 (33.3%)
education.						
Considering some type of teaching within their prospective field.	3 (42.9%)		4 (22.2%)	1 (5.9%)		4 (26.7%)
Considering teaching after working						
within their field or when they have		5 (55.6%)	9 (50%)	7 (41.2%)	6 (37.5%)	1 (6.7%)
a family.						
They are unsure about teaching and						
would like more experience in the					4 (25%)	
classroom.						
Will definitely not go into teaching.	1 (14.3%)	2 (22.2%)	3 (16.7%)	6 (35.3%)		5 (33.3%)
Total Participating	7	9	18	17	16	15

Appendix C: Exit interview questions asked of interns.

At the end of the program, all interns attended a focus group with the program evaluator during which the evaluator tried to gauge the impact of the program on the participants and their future careers. The following series of questions characterized these semi-structured interviews:

General Information about Experience

- 1. Why did you decide to participate in the (internship program)?
- 2. Please describe a typical day for you with the (internship program)?

Expectations

- 3. What did you think working with the (internship program) would be like prior to beginning your position?
- 4. Are there differences between your expectations and your experiences with the internship? If so, what are they?

Lessons Learned

- 5. What have you learned from working for the (internship program)?
- 6. What challenges have you experienced in the (internship program)?
- 7. How meaningful has your experience with the (internship program) been? Why?

Career

- 8. How will you use your experiences with the (internship program) in your future career?
- 9. Have your experiences with the (internship program) influenced your thinking about teaching? If so, how?