

Each One Teach One: an Evaluation Plan¹

December 2020

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Summary:

This final evaluation plan for EachOneTeachOne (E1T1) combines both outcome and impact evaluation strategies in order to assess factors of the major components of the program through the lens of three themes: (1) occupational and educational attainment of past program attendees, (2) behavior/attitudinal changes displayed by past participants, and (3) methods to improve outcomes for participants in the future. By examining data collected through the measures outlined below, the E1T1 team will be able to gain clarity in finding out if E1T1 has truly executed on their main goals of the program: enabling participants of all backgrounds to gain real-world practical STEM skills, better STEM job opportunities, and higher education in STEM. Through these means, they aim to contribute to a better-trained and more diverse technologically-capable workforce. At its core, this evaluation involves a mixed-method² retrospective approach, utilizing E1T1's database of former participants to gain a clearer picture of their success as a result of E1T1's specialized technology and computer science skills training program. This evaluation plan positions itself to create a standardized mixed-methods process³ for E1T1 to collect data for evaluation on future program participants, which can be used to identify which areas of their programming are particularly effective, and which can benefit from further refinement .

Recognizing that E1T1 has attempted to collect pre-/post data in various surveys in the past, our evaluation plan will provide suggestions and guidelines to our community partner on how to improve and maintain their data collection practices, and periodically review it in order to gain a snapshot of progress towards their goals. A more detailed explanation of each proposed mechanism can be found beginning on page 4.

Introduction and Program Background:

EachOneTeachOne (E1T1), an organization started in 2012, is a program that was designed to address the barriers and inequalities of opportunities to technical education and training among women and underrepresented minorities. Eponymously named after the African-American proverb where educated enslaved people were given the duty to share their new knowledge and skills with others, EachOneTeachOne utilizes dedicated educators and skilled professionals to teach disenfranchised people about technology. By embodying this adage, they hope to empower individuals to find stable and sustainable employment opportunities. Despite the recent growth of job availability in the information technology field, there is a significant lack of a technically trained workforce to fill these spaces. This is particularly apparent in poorer areas of the world where economic growth is hindered by an insufficiently trained working population. By training underrepresented people, especially young women and people from underrepresented minorities, E1T1 aims to close the gap between the supply of technically skilled workers and the demands of modern digital technology. In a typically male-dominated field, their leadership and training workforce are representative of the progress they wish to mirror. With majority female-identifying trainers, E1T1 truly orients themselves to attracting, training, and hiring more women in tech.

² Mixed-method → using both qualitative and quantitative methods in the same design

³ Standardized mixed-methods process → Using the same qualitative and quantitative methods to collect data for evaluation on future program participants to allow for easy comparison of results across cohorts.

EachOneTeachOne specifically selected women and girls as their target population because they are not well represented in the technological field and face many societal roadblocks that prevent them from gaining self-sufficiency through their independent efforts. One particular social issue that is addressed by E1T1 is the self-sufficiency of women to escape unhealthy relationships, especially in developing areas where educational and economical opportunities are sparse thus inhibiting their social and economic mobility. For many women, this power imbalance fosters relationship dynamics that put women in harm's way and stop them from reaching their full potential. The other social issues the program addresses are the lack of diversity in the tech workforce and the barrier to accessibility that makes it more difficult for certain demographics to obtain the necessary skills-training to be placed in high level internships and paid employment positions. E1T1 addresses these issues by providing women and girls a valuable chance to gain practical knowledge that can be used in an employment field that is flexible and high-paying. By orienting aspects of the program to appeal more to girls and women, they aim to instill confidence in their abilities to succeed in a field perceived as male-dominated. This not only benefits the women themselves but also improves their local economies which have a deficiency in technically-trained workers. On a larger scale, there is also the hope that increasing diversity in the tech field will reduce the likelihood of algorithmic and machine learning biases that have become apparent through news media in recent times. A unique aspect of E1T1 is their theory of action and chance, a concept where program participants are guided throughout the entire training and employment processes. From providing a helping hand even during job searches and interviews to offering stipends for training positions, E1T1 is devoted to empowering women and girls, as shown through their program mission and philosophy.

In partnership with schools, nonprofits, technologists, and educators nationwide and internationally, the E1T1 program has expanded rapidly in recent years to provide teaching, training, and internships to more people than ever before. This expeditious growth is a potential area for further evaluation, as the increased spread and cross-sector partnerships beget a need to assess processes and examine current capability.

Purposes of the Evaluation

This document sets out plans for two distinct and mutually exclusive evaluations: the first is a single, mixed-methods evaluation of *past* participants of the E1T1 program (section 1, pages 6-8). The second is a pre/post mixed-methods evaluation to be conducted on *future* participants of the program (section 2, pages 8-10).

For EachOneTeachOne, the purpose for the evaluation of the program is to satisfy questions about outcome objectives developed by the program's directors and board members. A supplementary process evaluation may also be completed to help program stakeholders determine the specific factors within the program's inputs and activities that influenced why the outputs developed as they did. The evaluation's main purpose is to look at the impact that E1T1 has on promoting involvement in STEM education, employment, and higher education. The evaluation aims to look at how many students continue to study Information and Technology (IT) in college or attend a 2-4 year college for any area of study, how many graduates get tech-related jobs, the income of E1T1 interns years after completing the program, and how the program affects students' mindsets, self-belief, and tenacity.

From the completion of this evaluation, there are several stakeholders that will potentially benefit from the findings. E1T1's program directors will be able to use the evaluation to gauge how their interns have changed through their participation in program activities as well as determine how each program element influenced the final outcomes. Meanwhile, the program's funders may use the evaluation to determine how well the program they funded is performing in accordance to expectations set by the program's developers. Observed improvements in program participants' STEM skill sets and increased desires to seek higher education and tech-related jobs would be strong evidence for E1T1's funders to continue supporting their cause. Distinct measurable outcomes like these mirror the success of the program's participants both professional and personally. For a more detailed examination of the questions which the evaluation seeks to answer, consult the Methods Grid (page 5-6), and for a more detailed plan on dissemination of the evaluation findings, see page 12.

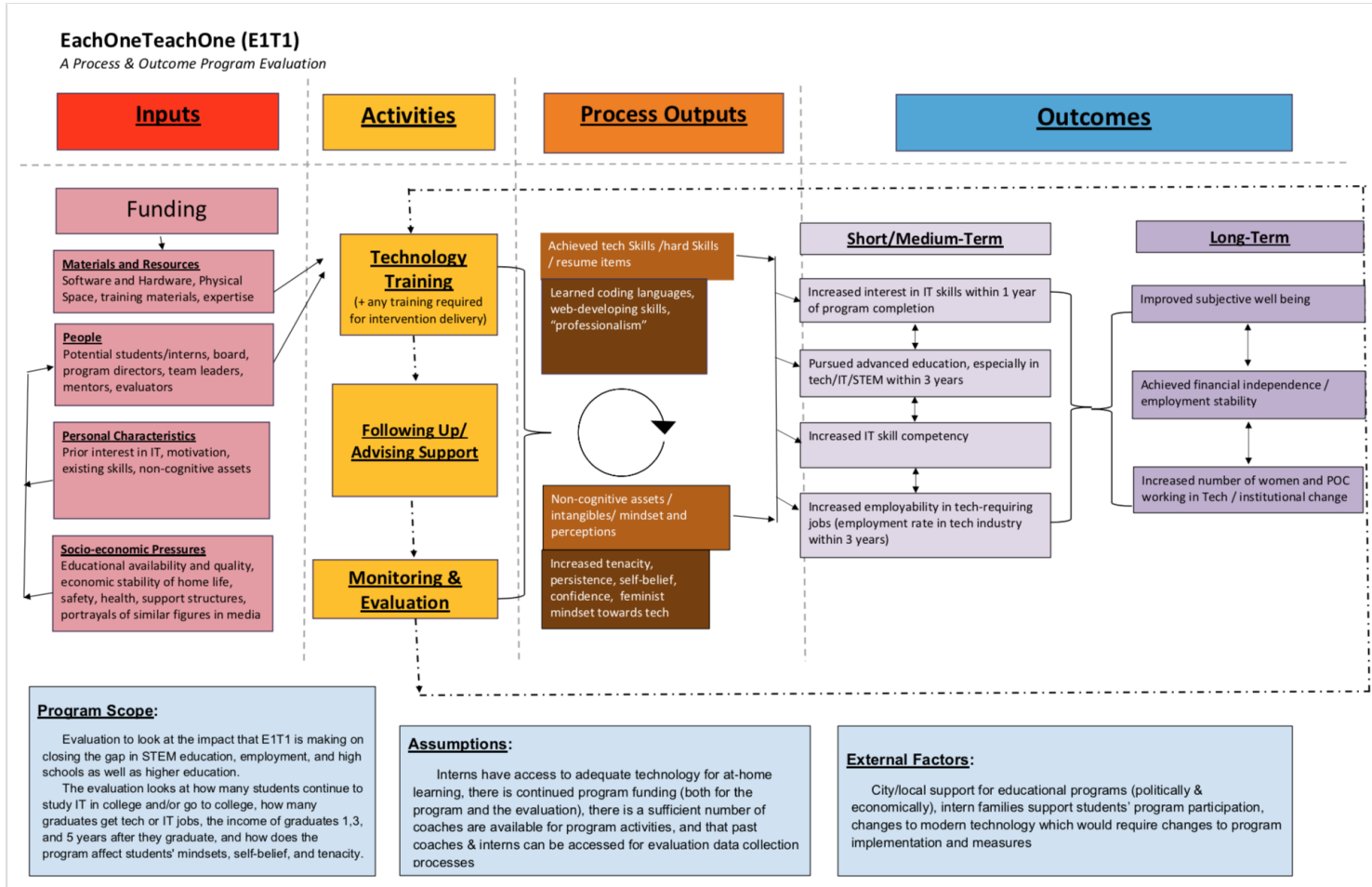
Program Description and Logic Model

EachOneTeachOne delivers a comprehensive technology skills program for youth, with the aims of increasing the attainment and retention of high-paying jobs in the tech industry amongst women and people belonging to other underrepresented groups. E1T1 gains participants through partnerships with the Mayor's Youth Employment and Education Program (MYEEP) in San Francisco CA, the Mayor's Summer Youth Employment Program (MYSEP) in Cambridge MA, as well as through referrals from teachers at partnered schools. E1T1 does not have the ability to select participants who originate from the MYEEP and MYSEP programs; they are placed into E1T1 by those programs, despite the chance for this to contribute to attrition, E1T1 has a very high (almost 100%) retention rate of participants.

E1T1 receives an approximately even split of male and female participants from the MYSEP and MYEEP programs. However, the teachers who make referrals to their program are aware of E1T1's target population, and tend to refer women and people belonging to underrepresented groups as a result. E1T1 utilizes a targeted program which they believe increases the likelihood of engaging with, and developing the interest of, female participants, without alienating or undeserving the needs of male participants. This is possible due to their industry knowledge that there is an asymmetric appeal for male and female students when it comes to the baseline appeal of technological skills and employment in the tech-field. E1T1 believes in meeting people where they are most comfortable in order to instill self-efficacy and cultivate a sense of belonging. By making the acquisition and development of IT skills appealing through a practical approach, participants will engage enthusiastically in their program. Students begin by engaging with photography and videography, and then learning how to develop a website in order to showcase a portfolio of their work. This scaffolded approach, which lasts between 5 and 9 weeks depending on geography, is believed to be a key reason for the success observed in the past.

E1T1 is able to track each participant's progress on a weekly basis, assessing completion and demonstration of skills by examining deliverables that participants upload to a semi-public self-designed webpage, hosted by the E1T1 website. The program utilizes a detailed syllabus that provides team leaders with a weekly breakdown of expectations for students. E1T1 believes that through participation and completion of their structured modules, participants will benefit from both the acquisition and application of IT skills. Participants will improve their employability in the tech industry (leading to a better quality of life outcomes), as

well as non-cognitive assets such as determination, persistence, self-belief, and tenacity, which are important developmentally.



Methods Grid

<u>Evaluation question</u>	<u>Indicator/ Performance Measure</u>	<u>Method</u>	<u>Data Source</u>	<u>Frequency</u>	<u>Responsible party</u>
How did participating in E1T1 impact occupational and educational attainment of past program attendees?	1. Increased number of program participants who gain employment in tech fields within 1 year of finishing the E1T1 program 2. Increased number of	Surveys and focus groups or interviews	Past program participants	Baseline will be collected now or in the near future and afterwards approximately 12 months after completion of the program or as needed to be determined by E1T1	Evaluators

	graduates who attend higher education within 1 year of finishing the program			program leaders	
How did participating in E1T1 impact improve women's views on STEM careers and/or the tech field?	Increased women's perceived confidence and access to entry in the STEM field by 30% within 1 year after completing the program	Surveys	Past program participants	Annually	Evaluators
How are current participants' skills, perceptions, attitudes, and beliefs affected by their participation in E1T1?	Increase and maintain the frequency of completion of a standardised pre-post survey by participants in order to analyze data every 6 months	Surveys	Current & future program participants	Pre-program, Mid-program, post last session of program, and 6 months after program completion	Team leaders, evaluators
How can E1T1 build on current data collection methods to better suit organizational needs?	1. Increased use of data that E1T1 collects 2. Increased number of times E1T1 analyzes their data to semi-annually	Records and methods examination	E1T1 Outcomes Surveys and results	Semi-annually	Evaluators, Data analysts

1. Mixed-Methods Evaluation Study of Past Participants.

EachOneTeachOne is interested in determining how program completion has impacted the career paths of past participants. E1T1 has a database with access to the majority of past participants in their program, spanning back to 2015. Several main questions will be answered as the evaluation is conducted:

- “To what extent was participation in E1T1 connected to past participants/interns seeking higher education in technology?”
- “How did participation in E1T1 lead past participants/interns to attain tech-related jobs/retain that employment?”
- “How did participants/interns attitudes/perceptions change towards their sense of belonging to the tech industry?”
- “Are past participants'/interns' satisfied with the program?”

To address these questions, E1T1 and the evaluators will conduct a non-experimental,⁴

⁴ Non-experimental design → Lacking manipulation of independent variables

retrospective, mixed-methods design evaluation using either convenience sampling or voluntary response sampling (or a mixture of both). The study will include a questionnaire which will ask for qualitative and quantitative data pertaining to: (1) a past participant's abilities and impressions prior to participating in E1T1, (2) impressions of experiences that were successful or unsuccessful during their participation in programming, and (3) questions assessing impacts on employment, further education, job-training skills, and quality of life (QoL) metrics. In addition to the questionnaire, focus groups and interviews with a smaller sample size of the past-participants will be carried out in order to gain a more in-depth understanding of the questionnaire data and process outcomes. A general course of action in executing this instrument will follow this plan:

Phase 1: Planning

Due to the existing data that has been collected by the program, it will be important to effectively utilize the resources that are already available. Firstly, the evaluation team would need to assess the current state of these databases that may contain the names and contact information of past program participants. In the case where the databases are lacking in information, the team must then proceed to collect and catalogue the names, email addresses, and LinkedIn contact information of all known program participants into a localized spreadsheet. Other potentially important information about each individual can be collected at a later stage once they have been contacted and enrolled to participate in the evaluation. The enrollment strategy can be tackled in one of two ways: convenience sampling or voluntary response. Convenience sampling would help the evaluation team decide on which past participants should be included for data collection, while a voluntary response approach is much simpler, involving only the creation of a sign-up form for the participants and informing them to participate via email or LinkedIn.

Phase 2: Collection

A 30-day enrollment period will then commence allowing for the highest number of responses to the evaluation process proposed. During this period, demographic information will be collected. Upon completion of evaluation enrollment, a survey will be administered to these individuals, with approximately 10 to 20 days to complete. This survey will encompass evaluation questions covering the evaluation topics of pursuit of a college degree, employment in the technology field, benefits of the E1T1 program and changes in program perception. Then from the pool of survey participants, several of them will be recruited to partake in focus groups and individual interviews. These focus group sessions and interviews will be conducted virtually to account for differences in geographic locations. What These qualitative data collection methods will allow for the past program interns to elaborate on information gathered from the survey.

Phase 3: Analysis

For the quantitative data collected, regression analysis⁵ is the preferred method for establishing the effect of E1T1 on participants' education and work experience. This information will be grouped by demographic characteristics such as age, gender, race, and multilingual status to determine how individuals' social context may have contributed to or hindered their success.

⁵ Regression analysis → Statistical analysis that estimates the relationship between dependent and independent variables

For qualitative data, there are two preferred methods for analysis. For the semi-structured focus groups, content analysis⁶ is appropriate for evaluating patterns within the participant experience. Focus groups will be recorded and transcribed, then the text will be re-grouped into codes that summarize the main categories and themes brought up (done using programs such as Nvivo). For individual interviews, narrative analysis⁷ is more appropriate because instead of testing a hypothesis, the evaluators want to confirm the causes and reasons participants had their experiences. This method will focus on using the personal narratives and experiences shared by participants to glean the unique context for the emotional changes and larger lifestyle gains of participating in the program.

Challenges and Limitations

A mixed-methods retrospective model was chosen as the most effective design given the needs of our community partner(s) but presents its own set of unique challenges. First, the time and effort necessary to adequately recruit a representative sample of participants could incur a considerable financial burden, therefore the organization and evaluators will need to carefully map out a timeframe and budget allocation that accounts for that. Another point of consideration during recruitment is that the response from past participants cannot be determined before the collection process starts. The future evaluator may or may not get participants with conflicting interests or simply busy schedules that could make them unwilling or unable to participate.

A retrospective study introduces the possibility of bias by design. Because participants may be several years out of the program, the most apparent is the potential for recall bias. Moreover, temporal relationships will be hard to assess and confounding is a possibility.

Lastly, as this is an observational rather than experimental design, proper randomization cannot be achieved. This introduces the potential for selection and sampling bias that must be considered during data mining and analysis. The sample of participants is likely to be positively biased. Participants are pooled from those who were willing to still actively engage with the organization, therefore we cannot gain insight from people who did not want to participate or did not have contact information on file. Differing opinions from this elusive group could provide more context on the weaknesses of the program.

2. Standardised Pre-Post Mixed-Methods Data Collection for Future Participants

E1T1 is also interested in determining how program participation affects: (1) participants' perceptions of, and skills pertaining to, employment in tech fields, (2) aspirations for tertiary education particularly in tech, (3) and self-belief and confidence in their ability to belong in the tech field. This proposal for a set of measures to help E1T1 discover how they perform in these dimensions will be conducted through a repeated mixed-method, non-experimental longitudinal study of participants administered to every incoming cohort. A supplemental mixed-methods multi-stakeholder non-experimental measure will be implemented in 2021, which may be

⁶ Content analysis → Used to determine words, themes, or concepts within a set of qualitative data (interviews, open-ended questions, field research notes, conversations, any source of communicative language)

⁷ Narrative analysis → Interpretation of stories told within the context of the research. Analysis of stories people create. It uncovers ideologies

repeated infrequently in the future (every 3-5 years). Sampling for both stakeholder groups in this branch of the evaluation is likely to be a mixture of convenience sampling⁸ or voluntary response sampling⁹ depending on the situation. This data collection process will be conducted with each cohort of future program interns as well as with program team leaders.

Phase 1: Planning

A set of pre/post surveys will be developed to measure the program effects listed above for future program interns. The pre- and mid-program surveys will be coupled with questions from several data collection tools currently used by E1T1 including their 'Before Program Mindset' questionnaire and 'Personal Goals' survey. Other questions that will be added to this survey cover areas such as personal ratings of computer skills, interest in STEM, interest in pursuing a STEM-based career, interest in higher education, confidence in learning about tech and computer science, awareness of the tech job market, and time-management skills. The post-survey will be designed to be conducted after program completion, asking interns about pursuance of college degrees, attainment of employment in the tech field, possessing a job that requires skills taught in E1T1, current perceptions of the program, changed mindsets of computer science and tech, improvements in time management, improved self-confidence, changes in career plans, respect for program leaders, and ability to apply skills learned in E1T1. This post-survey is designed to incorporate E1T1's currently-used 'End of Program Mindsets' survey questions.

Phase 2: Collection

The designed instruments will be administered to future program enrollees at four different stages: pre-program, mid-program, post-program, and 6-months after program completion. For the 6-month-post survey, there will be an expected loss in followup for participation due to individual circumstances.

Phase 3: Analysis

Student data collection will use a quasi-experimental design¹⁰, measuring data from a cohort of participants over time. By collecting periodic assessments of participant's knowledge attainment and satisfaction with the program, evaluators can model a general timeline of participation. How the data is analyzed will depend on the evaluation goals of E1T1. Regardless, the first step would be data preparation to convert raw data into something readable and easily digestible. If the goal is to create a descriptive timeline of individual participants and how their progress in certain indicators changes over time, then descriptive analysis¹¹ methods should be used. If the goal is to compare students in the program to

⁸ Convenience sampling → Non-probabilistic sampling, where participants are drawn from the readily available population. It is cheap, efficient, and simple to implement. It is most useful for pilot testing. It is susceptible of self-selection bias, amongst other issues that are usually avoided through randomized or probabilistic sampling methods.

⁹ Voluntary Response Sampling → The sample consists of people from the population of interest who volunteer to participate. It is a non-probabilistic sampling method.

¹⁰ Quasi-experimental design → A quasi-experiment is an empirical interventional study used to estimate the causal impact of an intervention on a target population without random assignment. Quasi-experimental research shares similarities with the traditional experimental design or randomized controlled trial, but it specifically lacks the element of random assignment or treatment control

¹¹ Descriptive analysis → Important when you are performing a statistical analysis, it is the first step. It helps you determine associations amongst variables and outliers and allows you to proceed with further statistical analysis

participants of similar programs, the data analysis will follow a more traditional experimental/control group comparison using statistical analysis of two groups.

Potential variables to use: gender, language, race, ethnicity, city (Boston/SF), initial competency/attitude/confidence, and employment attained.

Team Leader Data Collection:

Phase 1: Planning

During this phase, an interview protocol will be developed to address the experiences of team leaders, both in terms of ways they think they succeeded or were limited in their administration of programming activities for students. The interview will also require team leaders to reflect on personal development and ways that they think they benefited from being team leaders. Interview topic areas will include status as a past program intern, why they returned to E1T1 (if they were a past student), thoughts on E1T1's model in its attempt to achieve its mission, whether the program serves its target population, how the program succeeded or failed in serving this population, and how the program can be improved in all aspects.

Phase 2: Collection

There is no set time for when this component needs to be administered with regard to the pre-post survey. However, there is a timeline for what engaging in this mechanism looks like. Upon enrollment of team leaders to participate in the evaluation, the interviews should be scheduled soon after. Focus groups and interviews will then be conducted within 2 months of each other, involving recording audio of the conversations and the demographics of any participants. Once all the interviews are transcribed, the evaluation team can use Nvivo to code and analyze the qualitative data, assessing for themes through the frequency of phrasing and terms.

Phase 3: Analysis

Quantitative analysis can be conducted using the following independent variables: age, language, gender, and job gained post-completion of the program. Meanwhile, the qualitative analysis would need to be conducted in two arms: (1) individualised analysis on the personal gains of team leaders and their experiences, and (2) analyzing how team leaders contribute to and view E1T1 and vice versa. This will provide a more holistic view of the impact on/of team leaders within the E1T1 program model.

Lastly, findings will be presented in the form of strengths, weaknesses, opportunities, and threats (SWOT) - to team leader experiences on the job as well as with regard to the perceived experiences of participants.

Challenges and Limitations

While a longitudinal study design has many benefits for examining the development of interns overtime, there are a number of limitations to consider. There is potential for the Hawthorne Effect (or observation bias) as students and team leaders actively involved in the program may feel pressured, consciously or unconsciously, to tailor their responses to what they anticipate the evaluator or E1T1 wants to hear. Each survey will need to be administered with the assumption of anonymity or prefaced with a request for candor to ensure respondents

don't feel swayed. As data will be collected over three main points in time and respondents will be looking at similar questions, it will also be important to adjust surveys to avoid habituation.

Data Analysis Plan

Expected Data Types

Quantitative	<ul style="list-style-type: none"> ● Employment rate ● Likelihood of seeking higher education ● Utilization of tech skills at work ● Technical skills rating ● Professional skills rating ● Confidence rating for learning about STEM ● Interest rating about STEM ● Interest rating about career in STEM
Qualitative	<ul style="list-style-type: none"> ● Overall perceptions of the E1T1 program ● Thoughts on the STEM field ● Thoughts on the career plans (higher education & employment) ● Thoughts on E1T1 program activities ● Thoughts on program support and resources ● How E1T1 can improve in any aspect for interns ● Intern perceptions of E1T1 goals success ● Knowledge of jobs in technology ● Recommendation of E1T1 program

The data analysis will inform stakeholders about how well the E1T1 program achieved its goals of having its interns seek higher education, empower women to obtain employment in the STEM field, and learn valuable technical and professional skills. Quantitative data collected will answer several questions such as whether interns sought higher education or employment upon completion of the program, whether their skills in information technology improved through the program, and if their perceptions of STEM changed by program completion. Meanwhile, the qualitative data that is collected will be able to offer more specific information about the E1T1 program through questions included both in the developed questionnaires and interview process. Such information will be valuable for process evaluation in which the program stakeholders will be able to obtain information from their own interns about why and how the program activities influenced their thoughts and perceptions of STEM, higher education, and employment in the tech field. With this information, program leaders can make procedural changes for future implementations of the program to better reach their stated goals.

Data Analysis Method

Quantitative and qualitative data from each data collection process will be compiled into separate data folders so that observable changes in individual data points can be analyzed. Each intern's data from the pre- and post-surveys will also be linked to measure how much a specific student changed in areas such as tech skills, professional skills, and perceptions of STEM. Basic correlational statistics will be used to look for trends in how these areas change

among the interns before and after participation in the program’s activities. Demographics information of each intern will also be connected to their program outcomes to determine whether there may be any significant differences between people of different backgrounds. Qualitative data will be managed separately and coded to look for common themes among information that was shared by the interns in each year’s cohort of students.

Depending on the number of past interns that can be recruited for the “Mixed-Methods Evaluation Study of Past Participants” survey (appendix A), statistical power and significance may be weak if few interns are included in the data collection process. Monitoring the number of participants for this portion of the evaluation will be necessary so that results have context in terms of response rate. For the pre- and post-surveys for future E1T1 program participants (Appendix C and D respectively), the participation rate should be fixed to the total number of interns for their corresponding year, thus statistical power should be known beforehand. All aspects of the data analysis process should be completed by the evaluation team that is partnered with E1T1 at the time.

Data collected will then connect back to the theory that training through the E1T1 program will increase student interests in STEM and its associated higher education degrees, improve specific tech skills, and lead to higher employment rates in the tech field. Analysis of the data collected through this evaluation will help stakeholders determine if this theory is accurate and consistent. From this point, all program stakeholders will know whether to make changes to the theory or how the program is to be conducted in the future.

Dissemination Plan

Evaluation Deliverables	Target Population	Lead & Partners	Distribution
Visual Presentation	Program Leaders	Evaluators	Presentation Slides
Written Report	Program Leaders	Evaluators & Program Leaders	Paper (In-Person), Email
Written Report	Program Interns & General Public	Evaluators & Interns	Intern Email, Program Website

The main goal of disseminating evaluation results is to educate the program stakeholders about the state of their progress and inform them of program aspects that succeed or fail in addressing their organization’s goals. To portray these findings, the evaluation team will compose a final evaluation report that should be distributed to program leaders, program participants, and the public. Due to the differences in the needs of each involved stakeholder with regard to what they deem as valuable information about the program, the final evaluation report will be shared via a visual presentation and two written reports.

Visual Presentation & Organizational Leaders Written Report

One report will be designed specifically for E1T1 program leaders and board members. This report will provide de-identified information of all aspects collected from their corresponding instruments. For both the “Mixed-Methods Evaluation Study of Past Participants” (appendix A and B) and the pre-post survey for future program participants (appendix C and D), their separate reports will include all quantitative and qualitative data that was discussed in the “Data Analysis” section above. Data will be presented alongside narratives to provide context for the information displayed. Quantitative data will be analyzed and shared as common themes found among the interns. Each report will be distributed to each program leader via email and in-person during the visual presentation portion of each evaluation period. Yearly evaluation reports will be uploaded to a secure and private database, accessible only to program leaders to allow for potential year-to-year comparisons in the future.

A visual presentation will also accompany the report. Upon completion of the finalized report, the evaluation team will develop a presentation to share with the program’s leaders. The evaluation team will also work to find an agreed upon location and time for a presentation meeting. Within this meeting, the program evaluators should guide their audience through the written report and explain the most essential statistics and observations. This visual presentation will provide an environment for feedback and discussion, allowing the program leaders to ask questions and provide personal thoughts about the evaluation and the program. A slightly different version of this presentation can be produced to include key statistics such as evidence of success, and can be used to assure current funders and potential future funders of program efficacy.

Intern & Public Written Report

A separate final evaluation report will be developed for program interns and the public. Unlike the written report for the E1T1 program leaders and board members, this report will be much simpler and provide less insular analysis of the data. The report will be a summarization of the evaluation findings, displaying information in colorful graphs and charts. Only the most basic findings such as the rate of students that seek higher education or find employment in the tech field will be included. The report will be minimized to fit on at most one sheet of paper, front-and-back. With E1T1’s strength in graphic design training, it is encouraged that the evaluation team partner with current program attendees to contribute to this effort. The evaluation team may also consult with willing program interns to gain some opinions about what information should be included and how it should be shared. Once the evaluation report is finalized, the report can be distributed to past interns via the existing email addresses possessed by E1T1. For the public to also view this report, it can be uploaded to the E1T1 organization website under the “About” tab.

Appendices:

Mixed-Methods Evaluation of Past Interns:

(A) Survey

Note: Your responses will be kept private and secure. Please try to be as honest as possible.

Demographics:

1. How old are you? _____ years
2. In which state do you currently reside? _____
3. What languages are predominantly spoken at home? _____
4. Which choice best describes your gender identity?
 - Man
 - Woman
 - Transgender man
 - Transgender woman
 - Genderqueer
 - Agender
 - Non-binary
 - Other: _____
 - Prefer not to answer
5. Which racial/ethnic identities do you most identify with? (select all that apply)
 - American Indian or Alaska Native
 - Asian
 - Black or African American
 - Native Hawaiian or Other Pacific Islander
 - White
 - Hispanic, Latino or Spanish Origin
 - Other: _____
6. What is the highest degree or level of school that you have completed?
 - Some high school, no diploma
 - High school graduate or equivalent (ie. GED)
 - Some college credit, no degree
 - Trade, technical, or vocational training
 - Associate's degree
 - Bachelor's degree
 - Master's degree

- Professional or doctorate degree
7. What is your current employment status?
- Full-time
- Part-time
- Student
- Contracted or Temporary
- Unemployed
8. How many years has it been since you participated in the EachOneTeachOne program?
 _____ years
- a. What year did you participate in the EachOneTeachOne Program? _____

[Break]

E1T1 Program Questions:

9. If applicable, how many years after completion of the E1T1 program did you pursue a college degree? _____ year(s)
- a. What role did E1T1 play in that choice? Or Did E1T1 play any role in that choice?
 [open response]
10. Post internship, did you gain employment in the tech field? [Y/N]
- a. [If yes] How many years after the program did you get hired? _____ years
- b. [If yes] How long have you been working in this position? _____ years & _____ months
11. Does the job position require you to use skills that you learned in E1T1? [Y/N]
- a. [If yes] How has E1T1 prepared you for this job's responsibilities and tasks?
- Increased productivity and ability to multitask
- Website Design and/or Building skills
- Presentation skills
- Conducting Technology Requirements Analyses
- Visual media skills (Videography, Photograph, or Graphic Design)
- Inventorying (hardware and software)
- Database implementation and maintenance
- Creating Written Information Security and Privacy Plan's (WISPP)
- Other: _____
- b. [If no] How could E1T1 have better prepared you for this position?
- More technical job training
- More job prep (resume, interviewing, etc)
- More website design/development modules
- More focus on visual media skills (Videography, Photograph, or Graphic Design)
- More data Science and analytics skills training
- Better technology training and education skills training
- More hands-on, real world training

Other: _____

12. Before you participated in the E1T1 program, how would you rate your ability in the following fields?: [matrix format; 1-10 numeric scale, 1 being 'Poor', 10 being 'Excellent']
- Multitasking
 - Presentation skills
 - Writing a resume
 - Interviewing skills
 - Networking & searching for jobs
 - Creating job-related social media (ie. LinkedIn account)
 - Finding success in the digital workplace
 - Performing Technology Requirements Analyses (assess current IT requirements)
 - Developing applications (includes mobile app development and deployment) and performing coding tasks related to deploying computer applications into production or test regions
 - Website design
 - Website building skills
 - Website implementation
 - Videography
 - Photography
 - Graphic Design
 - Data science and analytics skills
 - Technology training and education skills
 - Hardware inventorying (examining all physical locations as requested & physically observing and documenting all IT devices)
 - Network inventorying (examining all physical locations as requested & physically observing and documenting all network components and devices)
 - Software inventorying (examining all physical devices as requested; accessing each endpoint device (server, laptop PC, desktop PC, printer, etc) as requested; updating list of applications and system resources; reviewing risk factors associated with each application and system resource; adjusting and documenting as appropriate; meeting with IT management and business resources as necessary)
 - Perform disk utilization and capacity analysis (examining all IT storage devices as requested, including endpoints; documenting memory and storage capacity and utilization)
 - IT issue documentation (Help desk; trouble ticket documentation; documenting IT issues as reported and requested)
 - Database implementation and maintenance (performing a limited amount of data entry to facilitate the design and implementation of databases)
 - Create Written Information Security and Privacy Plan (WISPP):
 - a. Requirements - Research and document information regarding International, Federal, State and local legal and regulatory requirements regarding information security, data breaches, Personal Information (PI) and data management
 - b. Framework selection - advise and recommend a framework to use such as E1T1, NIST CSF, NIST Privacy, or other security & privacy framework
 - c. Current state - together with client organization key contact, complete comparison of existing programs and policies with requirements

- d. Desired state - WISPP- Develop a Written Information Security Plan (WISPP) based on selected framework. [Scope: Information Security and Privacy Policies and Programs]
- e. Gap analysis - Comparing WISPP with existing programs, provide a gap analysis and make recommendations for WISPP compliance

13. After you completed the E1T1 program, how would you rate your tech skills then?

[matrix format; 1-10 numeric scale, 1 being 'Poor', 10 being 'Excellent']

- Performing Technology Requirements Analyses (assess current IT requirements)
- Developing applications (includes mobile app development and deployment) and performing coding tasks related to deploying computer applications into production or test regions
- Website design
- Website building skills
- Website implementation
- Videography
- Photography
- Graphic Design
- Data science and analytics skills
- Technology training and education skills
- Hardware inventorying (examining all physical locations as requested & physically observing and documenting all IT devices)
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- Perform disk utilization and capacity analysis (examining all IT storage devices as requested, including endpoints; documenting memory and storage capacity and utilization)
- IT issue documentation (Help desk; trouble ticket documentation; documenting IT issues as reported and requested)
- Database implementation and maintenance (performing a limited amount of data entry to facilitate the design and implementation of databases)
- Create Written Information Security and Privacy Plan (WISPP):
 - a. Requirements - Research and document information regarding International, Federal, State and local legal and regulatory requirements regarding information security, data breaches, Personal Information (PI) and data management
 - b. Framework selection - advise and recommend a framework to use such as E1T1, NIST CSF, NIST Privacy, or other security & privacy framework
 - c. Current state - together with client organization key contact, complete comparison of existing programs and policies with requirements
 - d. Desired state - WISPP- Develop a Written Information Security Plan (WISPP) based on selected framework. [Scope: Information Security and Privacy Policies and Programs]

- e. Gap analysis - Comparing WISPP with existing programs, provide a gap analysis and make recommendations for WISPP compliance

14. After you completed the E1T1 program, how would you rate your professional skills? [1-10 numeric scale, 1 being 'Poor', 10 being 'Excellent']
 - Multitasking
 - Presentation skills
 - Writing a resume
 - Interviewing skills
 - Networking & searching for jobs
 - Creating job-related social media (i.e. LinkedIn)
 - Success in the digital workplace
15. What are your overall perceptions of the program as a past intern? (ie. Was the program what you expected? Did you enjoy the program? Were the team leaders proficient in teaching the interns?)
[open response]
16. How has E1T1 impacted your thoughts on the STEM field?
[open response]
17. How has E1T1 affected your future career plans, such as higher education and employment?
[open response]
18. Would you recommend E1T1 to another student? Why or why not?
[open response]

(B) Interview Protocol

[Sample Intro Script]

Thank you for participating in this interview. Your participation and feedback in this short discussion will allow the E1T1 program to learn about the honest experiences of past interns and how their skills, perceptions, and experiences in science, technology, engineering, and mathematics have been affected by their participation in the program. This interview should only take approximately 30 minutes to complete. Please answer each question to the best of your ability and try to be as honest and open as possible. The information that you provide will not be linked to any of your personal identifiable information, so everything you share will be considered anonymous when we analyze the data. Your participation in this interview is completely voluntary, so if you feel uncomfortable answering certain questions, that's fine we can skip them. Or if you feel like you do not want to continue with the interview at any point, that is also ok, please let me know, and we will end the interview promptly.

[Demographics]

Year interviewee participated in the E1T1 program

[Questions]

1. Looking back, what were your thoughts of the program prior to becoming an intern?
2. What aspects of the program's educational activities did you enjoy? What were aspects that you did not enjoy?
3. How did the program's activities influence how you thought about STEM?
4. Did you have the proper support and resources to fully participate in the program?
 - a. What were they and how did they contribute to your experience?
5. How could the program improve to better actively supporting their interns both during and after the program?
6. In your opinion, how successful do you believe the E1T1 program was at achieving its goals?
7. Now thinking about when you finished the internship, what were your thoughts about STEM? Higher education? Future career paths?
8. What are the major benefits that you received from being an E1T1 intern?
9. Would you recommend E1T1 to someone you know? Why or why not?

[Closing]

Thank you for taking the time to talk with me today. All the information you provided was very helpful for making E1T1 better for future interns. We are thankful to have had you in our program and wish you the very best in your future endeavors. Feel free to reach out to me at any time if you have questions about the survey you took earlier or this interview.

Pre-Post Mixed Methods Evaluation of Future Interns:

(C) Pre-Program Survey

[Demographics]

1. First Name: _____
2. Last Name: _____
3. How old are you?: _____ years old
4. Which city and state do you reside in? ____ [city] ____, ____ [state] ____
5. What languages are predominantly spoken at home? _____
6. Which choice best describes your gender identity?
 - Man
 - Woman
 - Transgender man
 - Transgender woman
 - Genderqueer
 - Agender
 - Non-binary
 - Other: _____
 - Prefer not to answer
7. Which racial/ethnic identities do you most identify with? (select all that apply)
 - American Indian or Alaska Native
 - Asian
 - Black or African American
 - Native Hawaiian or Other Pacific Islander
 - White
 - Hispanic, Latino or Spanish Origin
 - Other: _____

[Questions]

8. How confident are you in your ability to learn about technology and computer science? Rate on a scale from 1-10.
[1-10 numeric scale; 1 being 'Not Confident at All', 10 being 'Extremely Confident']
9. How would you rate your current computer skills on a scale from 1-10?
[matrix format; 1-10 numeric scale, 1 being 'Poor', 10 being 'Excellent', include 'Don't Know' option after 10]
 - Performing Technology Requirements Analyses (assess current IT requirements)

- Developing applications (includes mobile app development and deployment) and performing coding tasks related to deploying computer applications into production or test regions
 - Website design
 - Website building skills
 - Website implementation
 - Videography
 - Photography
 - Graphic Design
 - Data science and analytics skills
 - Technology training and education skills
 - Hardware inventorying (examining all physical locations as requested & physically observing and documenting all IT devices)
 - Network inventorying (examining all physical locations as requested & physically observing and documenting all network components and devices)
 - Software inventorying (examining all physical devices as requested; accessing each endpoint device (server, laptop PC, desktop PC, printer, etc) as requested; updating list of applications and system resources; reviewing risk factors associated with each application and system resource; adjusting and documenting as appropriate; meeting with IT management and business resources as necessary)
 - Perform disk utilization and capacity analysis (examining all IT storage devices as requested, including endpoints; documenting memory and storage capacity and utilization)
 - IT issue documentation (Help desk; trouble ticket documentation; documenting IT issues as reported and requested)
 - Database implementation and maintenance (performing a limited amount of data entry to facilitate the design and implementation of databases)
 - Create Written Information Security and Privacy Plan (WISPP)
10. Are you interested in STEM?
[5-point likert scale, scaling from 'Very Uninterested' to 'Very Interested']
11. How interested are you in pursuing a career in STEM?
[5-point likert scale, scaling from 'Very Uninterested' to 'Very Interested']
- Q: Does your current financial situation or future earning potential impact this decision? How so?
[open response]
12. How likely are you to pursue a degree from a post-secondary institution?
[5-point Likert scale, scaled from 'Not at All Likely' to 'Extremely Likely']
13. How likely are you to pursue a STEM Degree?
[5-point Likert scale, scaled from 'Not at All Likely' to 'Extremely Likely']
14. What types of jobs in tech are you aware of right now?
[open response]
15. How would you rate your professional skills currently?
[matrix format; 1-10 numeric scale, 1 being 'Poor', 10 being 'Excellent']
- Multitasking
 - Presentation skills
 - Writing a resume
 - Interviewing skills

- Networking & searching for jobs
 - Creating job-related social media (i.e. LinkedIn)
 - Success in the digital workplace
16. How would you describe your time management skills? Is it something you find easy or difficult?
[open response]

(D) Post-Program Survey

[Demographics]

1. First Name: _____
2. Last Name: _____
3. How old are you?: _____ years old
4. Which city and state do you reside in? ____ [city] ____, ____ [state] ____
5. What languages are predominantly spoken at home? _____
6. Which choice best describes your gender identity?
 - Man
 - Woman
 - Transgender man
 - Transgender woman
 - Genderqueer
 - Agender
 - Non-binary
 - Other: _____
 - Prefer not to answer
7. Which racial/ethnic identities do you most identify with? (select all that apply)
 - American Indian or Alaska Native
 - Asian
 - Black or African American
 - Native Hawaiian or Other Pacific Islander
 - White
 - Hispanic, Latino or Spanish Origin
 - Other: _____

[Questions]

8. How confident are you in your ability to learn about technology and computer science?
Rate on a scale from 1-10.
[1-10 numeric scale; 1 being 'Not Confident at All', 10 being 'Extremely Confident']
9. How would you rate your current computer skills on a scale from 1 to 10?
[matrix format; 1-10 numeric scale, 1 being 'Poor', 10 being 'Excellent']
 - Performing Technology Requirements Analyses (assess current IT requirements)

- Developing applications (includes mobile app development and deployment) and performing coding tasks related to deploying computer applications into production or test regions
 - Website design
 - Website building skills
 - Website implementation
 - Videography
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 - Perform disk utilization and capacity analysis (examining all IT storage devices as requested, including endpoints; documenting memory and storage capacity and utilization)
 - IT issue documentation (Help desk; trouble ticket documentation; documenting IT issues as reported and requested)
 - Database implementation and maintenance (performing a limited amount of data entry to facilitate the design and implementation of databases)
 - Create Written Information Security and Privacy Plan (WISPP)
10. Are you interested in STEM?
[5-point likert scale, scaling from 'Very Uninterested' to 'Very Interested']
11. How interested are you in pursuing a career in STEM?
[5-point likert scale, scaling from 'Very Uninterested' to 'Very Interested']
- a. Q: Does your current financial situation or future earning potential impact this decision? How so?
[open response]
12. Are you interested in pursuing a degree from a post-secondary institution? [Y/N]
- a. If yes, how likely are you to pursue a STEM major?
[5-point Likert scale, scaled from 'Not at All Likely' to 'Extremely Likely']
13. What types of jobs in tech are you aware of now?
[open response]
14. How would you rate your professional skills currently?
[matrix format; 1-10 numeric scale, 1 being 'Poor', 10 being 'Excellent']
- Multitasking
 - Presentation skills
 - Writing a resume
 - Interviewing skills
 - Networking & searching for jobs

- Creating job-related social media (i.e. LinkedIn)
 - Success in the digital workplace
15. How would you describe your time management skills? Is it something you find easy or difficult?
[open response]
16. How likely are you to recommend E1T1 to a friend?
[Net Promoter Score scale; 1-10, 1 being 'Not at All Likely', 10 being 'Extremely Likely']