

TERP

EVALUATION OF THE AMERICAN SAMOA TECHNICIAN EDUCATION READINESS PATHWAY PROJECT

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Submitted by

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I. BACKGROUND

The overarching goal of the Technician Education Readiness Pathway (TERP) is to provide high school students with the knowledge and competency skills to be college ready to attend the American Samoa Community College (ASCC) Technician Education program, and/or postsecondary education that will lead towards a STEM Technician Pathway. The project design includes engaging teachers and students in an exciting guitar building program that utilizes hand-on learning techniques to increase the engagement of high school students in college STEM pathways and careers. The project partners expect that the project will play a role in helping American Samoa generate a highly qualified workforce, and inspire additional investments to continue and grow the work underway. A local industry partner is supportive of this multi-partnership (trades and technical school, college, industry) effort.

The key three project objectives are to:

- Improve student knowledge and skills in science, technology, engineering, math, and English.
- Increase the number of students prepared and ready to pursue ASCC Technician Education programs and/postsecondary education or related workforce opportunities; and
- Prepare students and teachers for national training-related certification programs.

The project is funded by the National Science Foundation Advanced Technological Education (ATE) Program.

II. PURPOSE OF EVALUATION

An evaluation firm, Business Government Community Connections (BGCC), was hired in the Spring of 2023. Formal evaluation activities are in the initial process of being implemented. The purpose of the evaluation is to identify the factors contributing to, or hindering project success so that TERP team members have the information necessary to make timely improvements. The information in this report pertains to the work performed between 7/1/22 - 1/31/23.

III. EVALUATION METHODS

TERP staff are in the process of developing a comprehensive evaluation plan, though initial efforts to collect data have occurred. Data for this report is limited to the following:

- Interviews with the Co-PI regarding teacher selection and preparation, student recruitment, student attendance, student progress, curricula adaptation, and partnership development.
- Review of Teacher End of Program Surveys.
- Review of Student Summer Program Assessments.
- Informal follow-up by the Co-PI with students to determine their current high school status and post high school education plans.
- Initial follow-up on teacher pursuit of training-related education and certifications.

The next phase of this project will include a much stronger focus on evaluation. BGCC will be working closely with TERP team members to implement strong data collection processes.

IV. EVALUATION FINDINGS

PROJECT TEAM

The project team includes the following: a PI from American Samoa Community College (College Partner); Co-PI (Industry Partner); and a representative from NVTHS (a trade's high school partner). Many others (including a school counselor, teachers, and college personnel) are dedicated to promoting the success of the project. To ensure that the work of all partners is well-coordinated and aligned the Co-PI identified a need to develop a comprehensive workplan, and detailed descriptions of the roles and responsibilities of all involved. The evaluator will routinely review and assess progress towards achieving workplan activities and deliverables, and the efforts of partners to work together to promote project sustainability.

TEACHER SELECTION

Teachers were selected from the pilot school for the project. The school counselor and woodwork teacher took a lead in this effort. Staff transitions, and personal problems made recruitment difficult. Ultimately, four teachers were hired to work for the summer pilot project. The Co-PI reported that more advance time is needed to invite, select, and train teachers. The demographics of the teacher team are presented below. All have a long history of employment as a teacher.

Teacher	Gender	Ethnicity	Subject Taught to Students	Number of Years of Experience
E1	F	Asian-Filipino	English	22
E2	F	Asian-Filipino	Science	18
E3	M	Asian-Filipino	Guitar Building	14
E4	F	PI-Samoan	Math	13

TEACHER MOTIVATION

The Co-PI said that teachers became involved in the project because of the compensation, and their desire to work with students who were interested in improving their science and technology skills. Moving forward, she recommended that teachers should be charged a fee when they engage in the training. She anticipated that this would help ensure that teachers who signed up for the training were seriously committed to this effort.

TEACHER TRAINING

One of the key aims of TERP is to train a group of teachers who have the technical and classroom management skills necessary to prepare and motivate students to pursue postsecondary education that leads toward a STEM Technician Pathway. Three of the four teachers who participated in the 2022 training and instruction will return in the summer of 2023.

According to reflections shared by the teachers, each felt that their individual and collective efforts made significant contributions to student learning. For example, in the Building construction class children gained knowledge of measure reading, lumber sizes, general safety and uses of different hand tools and power tools, guitar anatomy, soldering and guitar assembly. As the final step students learned how to attach the string, while teachers helped them with the tuning. The educator team worked to promote hands-on theories, math, English and science skills, while building the guitar.

Students also learned to model the teamwork skills that they saw teachers exhibit. Teacher reflections reveal that they worked well together collaboratively. Teacher comments also show that they successfully utilized google classroom as their backup plan to give students more time to work on missing classwork and homework. Though the fast pace of the program posed a challenge to teachers, there was a great sense of pride in the knowledge and gains that both teachers and students gained throughout the project. One teacher said, "So, overall, it's been fun, and everyone has learned new things, especially with the guitar kit building and the team effort that took place."

One educator wrote, “The program gave me a lot of fulfillment as an educator.” He added that, “This program was a big fulfillment for me personally and professionally.” He also noted that the parents of students were pleased with the knowledge and skills that their children gained.

The Co-PI shared the results of the Teacher Survey and noted that teachers were satisfied with the STEMguitarbuilding curriculum lesson plans, guides, and reference materials they had received. She explained that teachers were trained during the epidemic, using zoom calls. The guitar kits were distributed to teachers so they could work on them at home. Teachers also provided support to each other.

TEACHER CERTIFICATE ATTAINMENT

Future reports will report on teacher acquisition of training-related certificates, approach to teaching students, and other impacts of the training. To date, two of the four trades teachers that taught have earned their NOCTI industry certifications. Two other teachers got accepted into the Masters STEM Program at University of Hawaii.

STUDENT ENROLLMENT AND PARTICIPATION IN THE PILOT PROJECT

Twelve students participated in the 2022 summer pilot guitar building program. One student dropped out for personal reasons.

Demographic data for students shows that the majority were female and Pacific Islander-Samoan. Eleven were in 12th grade and one student was in eleventh grade. The Co-PI reported that the recruitment procedures need to be improved and streamlined to ensure that only those students who were eligible for the program, and were not required to take mandatory make-up classes would be recruited. The NVTHS counselor and teachers assisted in engaging students. Students took a bus to class. The students who were enrolled at ASCC for dual enrollment walked to class. All of the twelve students are still enrolled in school.

Student Data	Gender	Ethnicity	Grade
Student 1	F	PI-Samoan	12
Student 2	F	PI-Samoan	12
Student 3	F	Asian-Filipino	12
Student 4	M	PI-Samoan	12
Student 5	F	PI-Samoan	12
Student 6	F	PI-Samoan	12
Student 7	F	PI-Samoan	12
Student 8	M	PI-Samoan	12
Student 9	F	PI-Samoan	12
Student 10	M	PI-Samoan	12
Student 11	F	Asian Filipino	11
Student 12	F	PI	12

EQUIPMENT AND RESOURCES

The course was taught at the STEAM Center on the ASCC college campus. The environment was well-equipped with materials that the students would need to build guitars.

STUDENT SKILL ACQUISITION

The Co-PI reported that students developed math, science and writing skills through the STEM Guitar Building pilot class. She noted that pre/post assessments for the different classes were administered, and will guide the implementation of the 2023 summer program. Student grades and course related choices have not yet been collected or analyzed. The Co-PI will be focusing more strongly on collecting information on math learning gains, course, and next step education pathway choices.

STUDENT FEEDBACK

A review of the student open ended responses reveals that many students felt that participation in the project **increased their preparation for college**, and as one student said, "Taught me to step out of my comfort zone and learn new things." Several noted that the project was both **fun and educational** and provided them with a great opportunity to make friends, socialize and develop team work skills. A few wanted the program to be longer. Students also reported that the program provided them with **mentoring assistance** and greatly needed advice and support. One student reported, "The program really helped me **understand many of my weaknesses and strengths** which is why I enjoyed it. It also helped me to socialize with everything and made me understand everyone's needs and wants when we worked together. I knew exactly when to jump in and when to sit back and listen carefully because now I am well aware of my weaknesses and strengths. It is always important to know those two things as it helps you get through in life." The **math instruction** was **lauded** by several students, with many noting that math was a hard subject for them. One student said, "Math was a hard topic, but I did great with the help of the teacher and classmates." Several students reported that the project gave them a chance to reflect and prepare for the future. One reported, "It was a lifetime achievement for me to be able to not spend my summer at home but at school, which also **gave me** a great experience and a **chance to further my education and my understanding about the upcoming years.**"

NEXT STEP CAREER CHOICES OF STUDENTS

The Co-PI checked in informally with students to see if they were going on to college or STEM types of jobs. She will be instituting more rigorous methods to document project outcomes as the program progresses. The Co-PI reported that most of the students planned to go to college. The Co-PI is setting up a database to track the post high school and employment choices and experiences of students. This work will include documenting the strategies which promote or stand in the way of student pursuit of career pathways, gaps in resources, and actions taken to address these issues.

Student Data	Preliminary Post-High School Plans
Student 1	Will graduate and attend trades school
Student 2	Considering ASCC
Student 3	Will remain at high school (special education student)
Student 4	Considering ASCC
Student 5	Considering ASCC
Student 6	Considering ASCC
Student 7	Considering ASCC, and received an off island scholarship
Student 8	Considering ASCC, and received an off island scholarship
Student 9	Considering ASCC
Student 10	Considering ASCC
Student 11	Going to NVTHS in 2023 school year
Student 12	Personal reasons led to project exit

TERP MARKETING EFFORTS ARE BUILDING AWARENESS OF THE PROJECT

Preliminary and largely anecdotal feedback from the Co-PI suggests the TERP efforts are: (1) helping to build a greater awareness of the need to increase the knowledge and skills of students in science, technology, engineering, math, and English; (2) contributing to teacher awareness of the skills needed to pursue national certification program, and (3) catalyzing student interest in preparing for and pursuing ASCC Technician Education programs and postsecondary education and workforce opportunities that utilize these skills. The Co-PI also noted that trust-building among all TERP education and other stakeholders was an essential ingredient to launching and gaining ongoing support for the project from all of the entities involved in the collaboration.

STAFF TRANSITIONS DELAYED PROJECT IMPLEMENTATION

Staff transitions occurred at the high school, college, and industry partner level. Covid also slowed down the project. The Co-PI described these challenges and said that despite these issues the industry partner was still supportive. The role and commitments of industry partners will be documented more closely during the balance of 2023.

EVALUATION EFFORTS NEED TO BE MORE RIGOROUSLY IMPLEMENTED BY TERP TEAM MEMBERS

During the spring and summer of 2023, the evaluation firm will work with TERP team members to:

- Establish a rigorous evaluation plan that guides staff efforts to assess the effect of the TERP activities on students and teachers.
- Design and administer pre/post evaluation tools to students and teachers who engage in project based learning opportunities.
- Ensure that student tracking methods are in place to identify, for example, college transition and course placement efforts.
- Conduct follow up interviews with students and teachers, industry partners and ASCC Industry partners.
- Develop methodologies for tracking project demand, growth, and sustainability efforts.

The evaluation plan will embed actions necessary to assess the talent pipeline building efforts. The plan will include easy to follow steps necessary to track the evolution of:

- The content, and quality of the curriculum and professional development activities.
- Talent pipeline recruitment strategies.
- Type, level, and growth in industry activities to support the STEM work-based learning activities.
- Type and level of student and teacher learning gains; and
- Influence of the above efforts on student and teacher access to STEM-related certificates, student retention in high school, and post high school course, career and work-focused choices.

The evaluator will be conducting biweekly meetings with TERP team members to discuss, design and review evaluation protocols, results, and areas where program improvements may be needed. Open ended responses of students, teachers, and other collaborative partners will also be documented, codified, and summarized by the evaluator in a qualitative database to garner deeper information about the impressions and experiences of persons involved.

V.SUMMARY

The project has helped to create a greater awareness of the need to create pathways to STEM focused careers, and to invest in the teacher and student training necessary to support these aims. Teachers have used the skills they learned to earn certifications and pursue advanced STEM-related degrees.

Work remains to systematize and strengthen the project student and teacher recruitment, and tracking of student and teacher progress. Informal evaluation processes need to be replaced by formal structures and timelines in order to develop a body of evidence about the project's effectiveness, and to promote sustainability. The Co-PI said that the project had a positive influence on students and teachers, and student open-ended comments supported her observations. Many students are now considering pursuing a college education when they graduate from high school. Future documentation efforts will shine a greater awareness of where, why, and how these learning gains are improving teacher and student skills, and student life choices.

The open ended comments of students revealed that the project was meaningful to them. One student said, "Having so much time on learning things that I had never tried or heard of was an amazing experience and worth my time." Another reported, "This program taught me to step out of my comfort zone and learn new things." Yet another recalled, "I improved so much, especially in math." One student wrote, "We are the pioneers of the program." Future reports will shed light on the vital role that all those who are pioneering this work, and working together to create a program that has the potential to transform the lives of those engaged and the institutions which serve them.