AmeriCorps Utah STEM Initiative 2022-2023 Program Evaluation Report

PREPARED FOR:

Boys & Girls Clubs of Utah County

Program Director
Max Rogers

PREPARED BY:

Brian L. Jones Ph.D.

External Evaluator

Oct. 2023

.

BOYS & GIRLS CLUBS
OF UTAH COUNTY

CONTENTS

Introduction 3
Executive Summary 3
School Year Programming 4
Engineering is Elementary & Other STEM Program Results 4
Tutoring and Mentoring Programs 5
Teens Act 5
Utah Valley University Rally & Invest in Student Education (UVU RISE) 6
Summer Programming 6
Engineering is Elementary & Other STEM Program Results 6
Prefreshman Engineering Program (PREP) 7
Jordan PREP 8
Southern Utah University (SUU) PREP 8
Utah Tech University (UT Tech) PREP 9
Utah Valley University (UVU) PREP 10
Weber State University (WSU) PREP 12
Summer Program Qualitative Impact Statements 13
Question #1 14
How did having a volunteer impact your ability to run your program?" 14
Question #2 15
What direct impact did your volunteers have on the success and development of students in your program(s)?" 15
Summary 15
Appendix A: AUSI 2023 Evaluation Rubrics 16
Appendix A - Student Attitudes Toward STEM Survey 17

INTRODUCTION

The AmeriCorps Utah STEM Initiative (AUSI) partnered with an external evaluator for the program's fiscal year of 2023. The evaluator's role encompassed designing and developing program evaluation strategies and instruments. Additionally, the evaluator analyzed and reviewed evaluation data provided by AUSI programs. The AmeriCorps Utah STEM Initiative 2023 Evaluation Report elaborates on program-specific evaluation methodologies and outcomes.

During the 2022-2023 school year and the 2023 summer break, the AUSI program supported various initiatives. School year programs adopted diverse approaches, including in-school settings and after-school activities. Similarly, summer programs featured a combination of summer-long full-day sessions and shorter yet intensive programming. Across these programs, AUSI maintained a consistent objective: to impact the number of students exhibiting improved academic engagement and enhanced social-emotional skills. A ten percent increase in STEM engagement or improvements in social-emotional skills upon completing an AUSI-supported program was deemed successful progress.

EXECUTIVE SUMMARY

During the 2022-2023 school year and the 2023 summer break, AUSI supported various initiatives with the aim of enhancing academic engagement and social-emotional skills of students. In-school, after-school, and summer programs were designed to nurture students' interest in Science, Technology, Engineering, and Mathematics (STEM) fields.

Tutoring and mentoring programs were instrumental in providing individualized support and instruction to students, aiming to empower underserved students to graduate from high school and pursue higher education. The school year programs employed diverse approaches, such as the Engineering is Elementary (EiE) program and other STEM-related curricular activities. The evaluation demonstrated commendable outcomes, with 86% of students exhibiting growth in one or more evaluation rubric items. These same programs running during the summer break achieved overwhelmingly positive results, with 96% of students showing growth in one or more areas. Combining the school year and summer implementations, these AUSI-supported programs had 88% of students demonstrate growth in one or more areas, affirming the effectiveness and benefits of the programs. These results underscore the adaptability and effectiveness of the programs in fostering student growth and engagement.

The Prefreshman Engineering Programs (PREP) played a vital role in preparing pre-high school students for the world of engineering and related fields, emphasizing hands-on activities, workshops, and collaborative projects. The evaluation results showcased significant improvements in academic performance and positive attitudes toward STEM subjects, encouraging young learners to pursue further studies and potential careers in STEM.

The AmeriCorps volunteers emerged as the heart and soul of the programs, instrumental in academic, emotional, and organizational support. Their role was pivotal in ensuring student safety, mentorship, and successful program operations. Volunteers provided academic assistance, emotional support, and acted as positive role models, leaving a lasting impact on the students they served.

In summary, the AmeriCorps Utah STEM Initiative showcased success in enhancing students' academic engagement and social-emotional skills through diverse programming and invaluable support from AmeriCorps volunteers. The programs' adaptability, impact on students, and dedication of volunteers were key factors in achieving positive outcomes, affirming the significance of STEM education initiatives in empowering students for future success.

SCHOOL YEAR PROGRAMMING

School year programs approached STEM education in both in-school and after-school contexts. Most programs used the Engineering is Elementary (EiE) program offered by the Museum of Science to structure student programming. EiE is a comprehensive STEM educational initiative that promotes engineering and technology education among elementary school students. EiE provides a range of innovative, research-based curricular materials, professional development resources, and support for teachers to integrate engineering concepts and practices into their classrooms and informal learning spaces, including after-school programming. EiE helps students develop critical thinking and problem-solving by applying engineering principles to real-world challenges through hands-on, inquiry-based activities and engaging stories. AUSI programs were free to adapt the implementation of EiE programming to account for local contextual factors. This flexibility was manifested in the EiE units chosen by sites and the selection of lessons and activities within each unit.

Programs not implementing EiE content developed their STEM-related curricular activities using various resources. These programs included but were not limited to, learning Python, Lego Robotics, Scratch, and STEM Girls groups. Other school-year programs supported by AUSI included mentoring, monitoring, and additional academic support for students struggling in STEM subjects.

Evaluation methodologies accounted for a variety of contexts, content, and durations. The primary evaluation metric was generated through student evaluations completed by program facilitators. These evaluations consisted of eight evaluative categories, including Engineering Roles/Careers, Engineering Design Process, EiE Unit Content Area, EiE Group work (social-emotional skills), STEM Subject Academic Performance, Positive Attitudes Toward STEM Subjects, Confidence Approaching STEM Subjects, General Group Work (social-emotional skills). Program facilitators monitored students throughout the program and provided a summative rating of 1-10 for each evaluative category. See Appendix A for more details about the evaluation rubrics and rating methodology.

ENGINEERING IS ELEMENTARY & OTHER STEM PROGRAM RESULTS

The evaluation data provided, encompassing 1,598 students in 19 school year programs, demonstrates a commendable outcome. Notably, 86% of students exhibited growth by meeting the specified criteria in one or more areas. The consistency in students meeting growth criteria, ranging from 74% to 83% across evaluation rubric items (see Table 1), showcases successful and impactful programs. These results affirm the effectiveness and benefits of the programs and their positive influence on academic engagement and enhanced social-emotional skills.

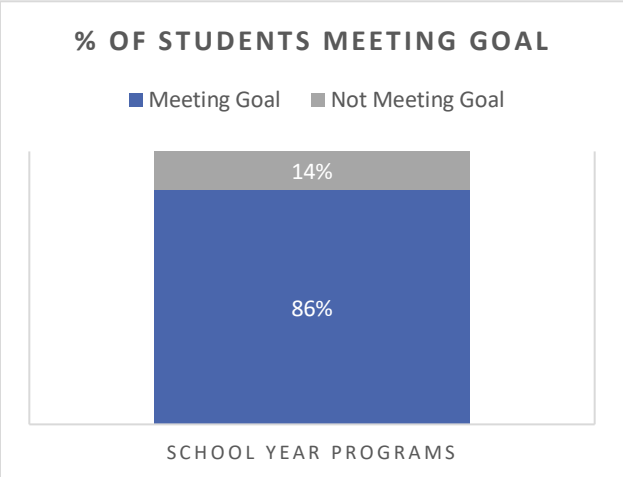


Table 1: Summary of Rubric Item Evaluations

Rubric Item	% Meeting Goal	Average Rating
Engineering Roles/Careers	74%	4.9
Engineering Design Process	79%	5.3
EiE Unit Content Area	78%	5.3
EiE Group Work (social-emotional skills)	81%	5.5
STEM Subject Academic Performance	82%	5.5
Positive Attitudes Toward STEM Subjects	82%	5.8
Confidence Approaching STEM Subjects	83%	5.7
General Group Work (social-emotional skills)	83%	5.8

TUTORING AND MENTORING PROGRAMS

AUSI supported other school year programs in 2023 that differed in their approach to increasing academic engagement and social-emotional skills. These programs employed tutoring and mentoring services to positively impact the lives of students by providing individualized support and instruction.

TEENS ACT

Teens Act describes itself as an organization that aims to empower underserved students to graduate from high school and go on to higher education. Their effort to achieve this mission is accomplished through their College & Career Readiness Program. This program consists of student success classes, after-school tutoring, and parent support programs. Teens Act utilizes AmeriCorps volunteers to run various aspects of these programs. They primarily focus on students who are struggling academically (a GPA of 2.5 or less), are first-generation college-bound, and are from low-income environments (qualify for free and/or reduced lunch). The individualized nature of the intervention presents some challenges in utilizing a standardized evaluation measure. Despite these difficulties, Teens Act has tracked and reported its impact on student academic performance by tracking how many classes students are failing. Since academic engagement and social-emotional skills often accompany good grades, monitoring the change in the number of failing courses can be used as a proxy for changes in academic engagement and social-emotional skills. Table 2 presents the reported outcomes for the 2022-2023 school year. As shown below, **Teens Act achieved a 37% reduction in failing grades.**

Table 2: Teens Act Outcomes

Measure	Count	Percentage
Engineering Roles/Careers	23	85%
Engineering Design Process	13	48%

UTAH VALLEY UNIVERSITY RALLY & INVEST IN STUDENT EDUCATION (UVU RISE)

The UVU RISE program describes itself as a program aiming to provide K-12 students from underserved populations with opportunities for grade-level growth and college preparedness. The AUSI assists UVU RISE in providing free homework help to students at large. Tutors with varied skills in Math, English, Science, History, etc., are available to provide tutoring services as needed. A STEM specialist works on-site to provide learning opportunities by teaching students about baking/cooking, robotics, coding, and other STEM-related activities. The After School Program takes pride in curating a safe environment that encourages students to ask questions and build toward a growth mindset. Program outcome data specific to this part of the program was provided in 2023.

SUMMER PROGRAMMING

At the end of the school year, several AUSI programs continue offering students programming in a context similar to their after-school programming. However, several programs operate exclusively during the summer break. These programs are generally highly structured multi-year programs. In these programs, students spend a significant amount of each day participating in learning and social activities. The multi-year structure allows students to return in subsequent summers to continue their learning journey and develop deep associations and friendships with adults and peers.

ENGINEERING IS ELEMENTARY & OTHER STEM PROGRAM RESULTS

Several summer programs offered Engineering is Elementary units while others procured or developed their activities and curriculum. Utilizing the evaluation methodologies outlined in the previous report section dedicated to school year programs, 600 students from 6 summer programs participated in the evaluation. The results are overwhelmingly positive, with 96% of students achieving growth in one or more areas. Notably, the percentage of students meeting growth criteria remained consistently high, ranging from 91% to 96% across evaluation rubric items (see Table 3). This showcases the effectiveness and adaptability of the programs in fostering student growth and engagement.

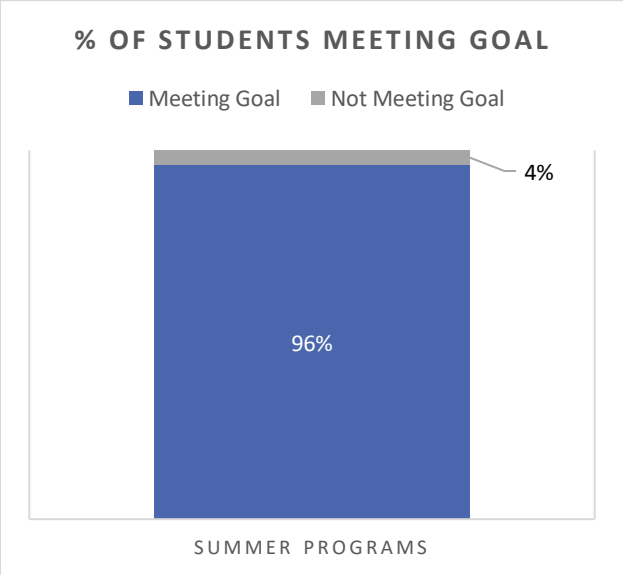


Table 3: Summary of Rubric Item Evaluations

Rubric Item	% Meeting Goal	Average Rating
Engineering Roles/Careers	94%	6.0
Engineering Design Process	95%	6.4
EiE Unit Content Area	91%	6.2
EiE Group Work (social-emotional skills)	95%	6.7
STEM Subject Academic Performance	96%	6.9
Positive Attitudes Toward STEM Subjects	96%	7.1
Confidence Approaching STEM Subjects	96%	6.9
General Group Work (social-emotional skills)	96%	6.9

PREFRESHMAN ENGINEERING PROGRAM (PREP)

Prefreshman Engineering Programs (PREP) are specialized educational initiatives designed to introduce and prepare pre-high school students for the exciting world of engineering and related fields. These programs typically target students before they enter their freshman year of high school, aiming to ignite their interest in STEM disciplines.

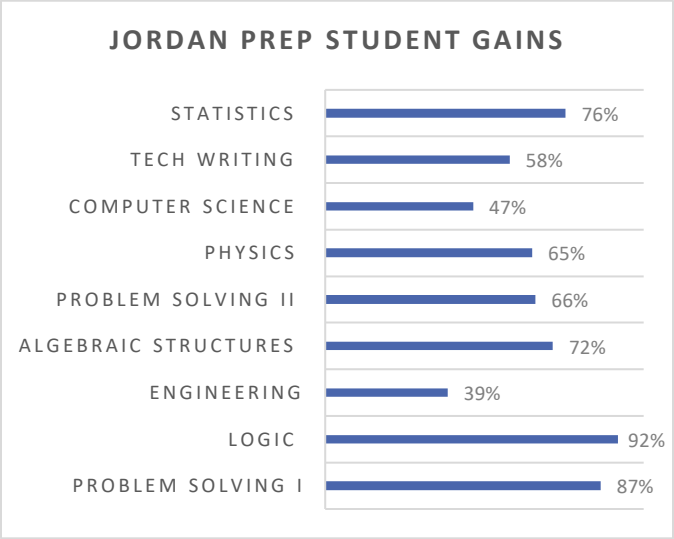
PREP programs often feature a mix of hands-on activities, workshops, lectures, and team-based projects, allowing participants to explore various branches of STEM. Participants engage in problem-solving tasks, critical thinking exercises, and collaborative projects, providing them with a foundational understanding of engineering principles and the engineering design process. Additionally, PREP programs often expose students to the latest advancements in technology and innovation, encouraging creativity and innovation.

Through exposure to these immersive experiences, students develop essential skills such as analytical thinking, teamwork, communication, and a strong foundation in mathematics and science. Ultimately, PREP programs seek to inspire and equip young learners with the knowledge, enthusiasm, and skills necessary to pursue further studies and potential careers in engineering or related STEM fields.

AUSI supported five PREP programs in 2023. Each PREP program serves a unique demographic of students and adapts its programming to meet the needs of its students. However, there is a strong commitment to collaboration between Utah's PREP sites, which strive to improve student experiences and outcomes continuously. Site-specific information and evaluation results are provided below for each AUSI-supported PREP site.

JORDAN PREP

Jordan PREP describes itself as an academically intense, mathematics-based, six-week summer enrichment program that identifies achieving middle school students with an interest and aptitude in Science, Technology, Engineering, and/or Mathematics (STEM) to motivate and prepare them for success in STEM fields. In 2023, Jordan PREP served 100 students, with over half coming from diverse backgrounds and less than 50% with white ethnicities. Parental educational achievement ranged from 16% graduating from college, 39% completing some college, and 45% not graduating from high school or going to college.



Completing the six-week program requires extended academic engagement and persistence. On average, students participating in Jordan PREP increased their academic performance in all nine courses. **Students achieved an average score increase of 66% between pre-test and post-test administrations.** Students scoring an 80% or above on the post-test were classified as proficient. The percentage of proficient students in each course ranged from 69% to 100%.

SOUTHERN UTAH UNIVERSITY (SUU) PREP

Southern Utah University (SUU) PREP is a free summer academic program that provides three summers of rigorous academic instruction, hands-on educational projects, challenging homework assignments, and daily career awareness for 7th, 8th, and 9th grades. The program focuses on students interested in Science, Technology, Engineering, and/or Mathematics. SUU PREP strives to provide opportunities for high-achieving students to pursue STEM studies and careers. In addition, underrepresented and first-generation students are encouraged to apply. The mission of SUU PREP is to enhance and encourage diverse middle-school-age students' academic backgrounds and interest in science, technology, engineering, and mathematics (STEM) to motivate and prepare them to overcome the challenges of achieving a STEM degree.

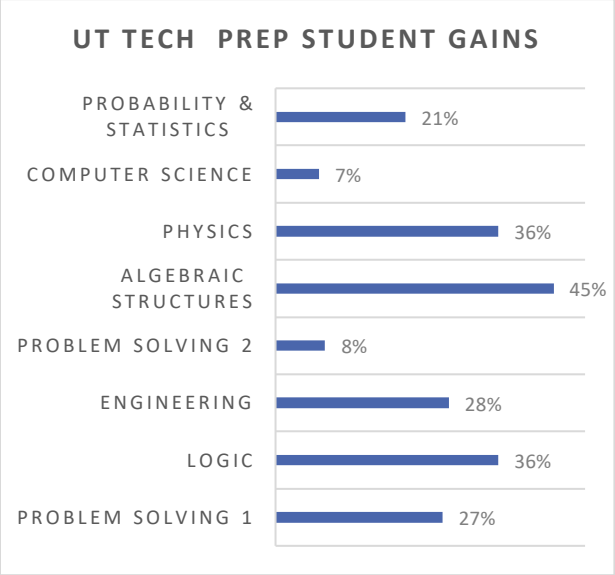
SUU PREP served 38 students in 2023. Students demonstrated academic growth through subject-specific pre-tests and post-tests. The amount of growth varied from course to course and student to student. **On average, students increased their post-test scores by 33% over their pre-test scores.** The percentage of students experiencing an increase in academic performance varied from course to course, ranging from -6%* to 71%. **Overall, 100% of students experienced increased academic performance in one or more courses.**

*Note: some students were reported to perform worse on the post-test than they did on the pre-test. Although this is a possible result, it is not highly probable. Reporting errors may be influencing these evaluation results.

UTAH TECH UNIVERSITY (UT TECH) PREP

The Utah Tech University (UT) Precollege Program (PREP) describes itself as a no-cost seven-week summer school that challenges high-achieving 6th, 7th, and 8th-grade students who are interested in science, technology, engineering, and mathematics (STEM). Underrepresented females and first-generation students are encouraged to apply. UT PREP motivates and prepares high-achieving students for success in school and future STEM careers. UT PREP provides three summers of rigorous academic instruction. Students build their problem-solving skills and make new friends by participating in interesting courses, exciting field trips, and career presentations.

A total of 135 students actively participated in the extensive summer program of 2023. During this period, students collectively exhibited improvements in both academic achievement and engagement, as indicated in Table 4. It's important to acknowledge the rigorous nature of these courses, which should be taken into account when interpreting the significance of post-test scores. The notable progress observed in students throughout the summer strongly reinforces the program's meaningful impact on academic engagement and perseverance among students. Navigating these demanding courses offers students numerous opportunities to actively engage with and excel in their educational pursuits. Moreover, the hands-on approach integrated into many of these classes significantly contributes to the enhancement of students' social-emotional skills.



Beyond academic progress, we also assessed students' attitudes toward STEM using a retrospective survey featuring a series of prompts. The survey results clearly demonstrated an increase in students' positive attitudes towards STEM subjects directly attributable to their participation in UT Tech PREP. Table 5 succinctly highlights the top eight survey prompts showcasing the most significant gains in positive attitudes. The growth in responses to several of these prompts underscores the program's effectiveness in helping students cultivate essential practices for maintaining a robust and positive academic engagement.

Table 4: UT Tech PREP Course Achievement

PREP Course	Pre-test Ave.	Post-test Ave.	Ave. Gain
Problem Solving 1	45%	72%	27%
Logic	18%	54%	36%
Engineering	46%	74%	28%
Problem Solving 2	55%	63%	8%
Algebraic Structures	18%	63%	45%
Physics	43%	49%	36%
Computer Science	74%	67%	7%
Probability & Statistics	44%	65%	21%

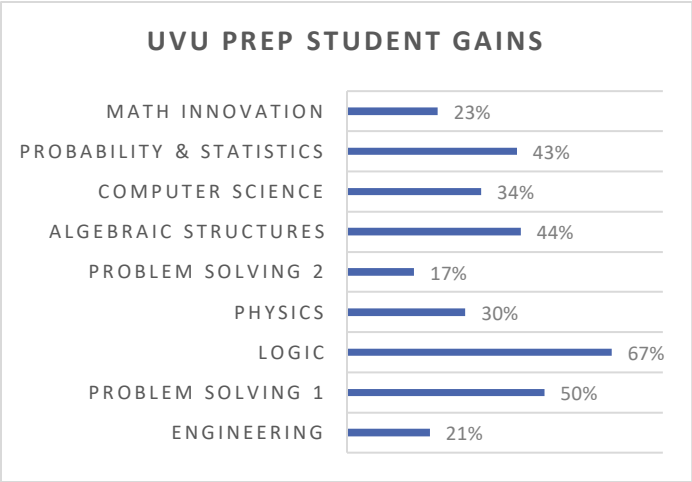
Table 5: UT Tech PREP STEM Attitude Gains

Prompt	Gains
I see myself as an engineering person	19%
When something is hard, it makes me want to work more on it, not less	19%
Others see me as a science person	17%
I like work that I learn from even if I make a lot of mistakes	17%
I expect to do well in next year's science class	17%
Learning science can help me get a good job	16%

UTAH VALLEY UNIVERSITY (UVU) PREP

UVU PREP is a free STEM Summer program for middle and junior high students, providing three summers of rigorous academic instruction, hands-on educational projects, challenging homework assignments, career awareness speakers, and field trips. The program allows incoming 7th, 8th, and 9th (graduating 6th, 7th, and 8th) grade students who have an interest and aptitude in Science, Technology, Engineering, and/or Mathematics fields to receive accelerated curriculum in preparation for high school and higher education. UVU PREP strives to provide underrepresented and first-generation students opportunities to pursue STEM studies and careers.

In 2023, UVU PREP positively impacted a total of 217 students, encompassing both first-year participants and returning students in their second and third years. As consistently demonstrated in other PREP programs, the students at UVU PREP exhibited notable improvements in both academic achievement and engagement. Particularly noteworthy is that this progress is seen by both new and returning students, underscoring the program's ability to sustain and elevate achievement and engagement year after year, even with the same group of students.



Students participating in UVU PREP demonstrated increased academic performance when evaluating academic growth from pre-tests and post-tests. The progress in individual course gains ranged from 17% to 67% (see Table 6). **On average, students elevated their performance 37%.**

UVU PREP students also participated in the student attitudes towards STEM retrospective survey. Table 7 highlights areas to which students attribute their growth to their participation in the UVU PREP program. Student attitudes towards learning, particularly in STEM subjects, can influence their future engagement with these critical topics. Survey results showing enhanced perception of themselves as academically engaged and capable have the potential to impact both their current and future academic engagement, instilling a sense of confidence and enthusiasm for learning.

Table 6: UVU PREP Course Achievement

PREP Course	Pre-test Ave.	Post-test Ave.	Ave. Gain
Engineering	59%	80%	21%
Problem Solving 1	15%	82%	67%
Logic	24%	74%	50%
Physics	43%	74%	31%
Problem Solving 2	57%	73%	16%
Algebraic Structures	31%	75%	44%
Computer Science	57%	91%	34%
Probability & Statistics	30%	73%	43%
Math Innovations	32%	56%	24%

Table 7: UVU PREP STEM Attitude Gains

Prompt	Gains
I see myself as an engineering person.	16%
I expect to do well in next year's science class.	15%
Others see me as an engineering person.	14%
Others see me as a science person.	14%
I will study science in college.	14%

WEBER STATE UNIVERSITY (WSU) PREP

WSU PREP describes itself as a free 6-week summer camp designed to prepare incoming 7th, 8th, and 9th-grade students in science, technology, engineering, and mathematics (STEM) by offering an accelerated curriculum preparing them for high school and college.

WSU PREP provided services for 100 students during the 2023 summer. Of these students, 49% were in their first year, 35% in their second year, and 16% in their third year. As with other PREP programs, increased academic achievement and engagement were found across all levels of experience, not only in students new to the program. This growth was demonstrated by academic gains from pre-test to post-test administrations. Across all nine courses, students had gains ranging from 7% to 65% (see Table 8). **On average, students elevated their performance 37%.**

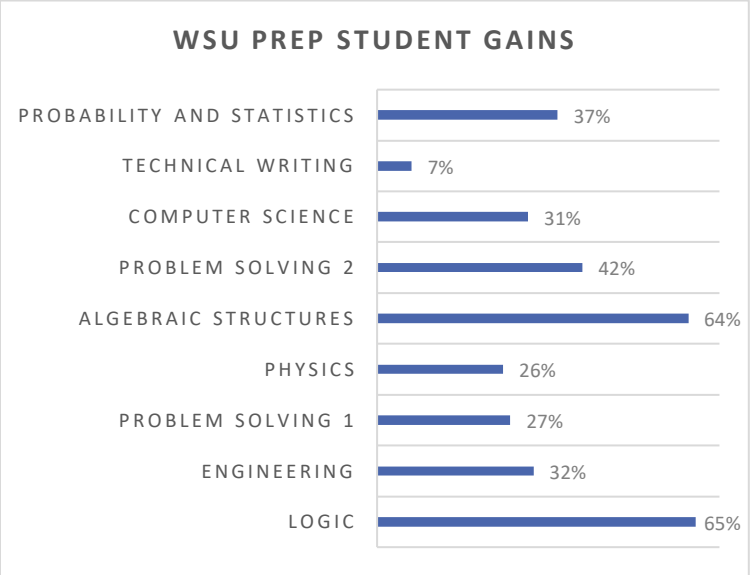


Table 8: WSU PREP Course Achievement

PREP Course	Pre-test Ave.	Post-test Ave.	Ave. Gain
Logic	7%	72%	65%
Engineering	37%	69%	32%
Problem Solving 1	33%	60%	27%
Physics	58%	84%	26%
Algebraic Structures	12%	76%	64%
Problem Solving 2	29%	71%	42%
Computer Science	62%	93%	31%
Technical Writing	87%	94%	7%
Probability and Statistics	33%	70%	37%

SUMMER PROGRAM QUALITATIVE IMPACT STATEMENTS

Qualitative data was collected through open-ended questions posed to each AUSI-supported summer program leader – the questions aimed to gather insights regarding the influence of volunteers on program operations and student success. Program coordinators and educators responsible for overseeing the volunteers and their contributions to the programs received these questions due to their intricate understanding of the programs and ability to fully understand the impact of AUSI volunteers on their programs. Responses were solicited and collected via email.

The questionnaire consisted of two open-ended questions seeking qualitative responses from the participants:

1. "How did having a volunteer impact your ability to run your program?"

   Participants were encouraged to provide detailed accounts of how the presence of volunteers affected their program management, organizational aspects, and overall program effectiveness.

2. "What direct impact did your volunteers have on the success and development of students in your program(s)?"

3. Participants were prompted to describe how volunteers positively influenced the students' success, growth, learning experiences, and overall development within the program(s).

Responses to the open-ended questions were analyzed using qualitative content analysis. Common themes, patterns, and key insights were identified within the responses. Although these themes were identified, the best illustration and description of the themes are the responses themselves. A select set of quotes from the response are shared to illustrate the impact of AUSI volunteers described by those being impacted.

QUESTION #1

HOW DID HAVING A VOLUNTEER IMPACT YOUR ABILITY TO RUN YOUR PROGRAM?"

All responses unanimously underscore AmeriCorps volunteers' indispensable role in these programs, providing academic, emotional, and organizational support critical for their success and sustainability. Their contribution extends to safety, mentorship, curriculum design, and overall program operation, showcasing their profound impact on the programs they serve. The quotes presented below are illustrative of several other responses.

Notable quotes:

We call our [AmeriCorps] volunteers the heart and soul of [our program]. They are the trusted mentors for our students from the moment they arrive until they go home. Without our [AmeriCorps] volunteers, our students would not have the academic and emotional support they need to succeed...
This year, [our program] employed a full-time therapist. The AmeriCorps volunteers played a critical role in letting the therapist know when a student was struggling emotionally in class. This immediate notification allowed the therapist to prioritize students in a meaningful way. Without the daily interactions our [AmeriCorps] volunteers have with the students and the trusting relationship they build, many of our students may not have requested to see our therapist. This year, 24% of our students saw our therapist in group or individual sessions. We are grateful for the role our AmeriCorps volunteers had in assuring our students were receiving the social-emotional learning opportunities provided by Jordan PREP.
AmeriCorps tremendously helps our efforts to find and fund quality Program Assistants and Instructors. Without the financial support from AmeriCorps, I'm not sure that I could secure enough funding to cover the cost of running the program. It also helps for AmeriCorps to take care of background checks and financial paperwork so that I can focus my efforts on other administrative duties.
A primary goal of our program is to help ALL students achieve their academic aspirations, regardless of race, color, or socio-economic status (SES). In an effort to give students of low SES an opportunity to attend, we offer the program free of cost to the participants. Thus, funding for the program must come from outside sources. AmeriCorps tremendously helps our efforts to find and fund quality Program Assistants and Instructors. Without the financial support from AmeriCorps, I'm not sure that I could secure enough funding to cover the cost of running the program. It also helps for AmeriCorps to take care of background checks and financial paperwork so that I can focus my efforts on other administrative duties.
Our AmeriCorps volunteers worked to ensure the safety and appropriate behavior of our minors during this educational program. These volunteers created a safe culture where students had fun, worked hard, learned, and thrived. Four of the AmeriCorps Volunteers helped in the office and were essential in coordinating the needs of students, Summer Associate Mentors, Teaching Assistants,

and teachers, all while doing whatever [our program] full-time staff required of them. Eighteen of the AmeriCorps Volunteers worked as Summer Associate Mentors. They were assigned to work in pairs to always stay with a specific group of students. Nine of the AmeriCorps Volunteers worked directly with our instructors as Teaching Assistants. Together, these Volunteers were the heart and soul of our program. They became leaders, mentors, tutors, and good role models to our students.

QUESTION #2

WHAT DIRECT IMPACT DID YOUR VOLUNTEERS HAVE ON THE SUCCESS AND DEVELOPMENT OF STUDENTS IN YOUR PROGRAM(S)?"

All responses underscore AmeriCorps volunteers' or members' crucial and multi-faceted impact on the students' success and development within the programs. They act as mentors, academic supporters, emotional caretakers, and facilitators, forming an invaluable part of the educational experience and well-being of the students. The responses collectively affirm AmeriCorps members' profound and positive influence on the students they serve. The quotes presented below are illustrative of several other responses.

Some helped the students academically, others helped socially, and others emotionally. It was such a pleasure to witness the connections between the STEM Mentors (AmeriCorps volunteers) and our program participants.
Student quote from a first-year student at the closing ceremony: "To start with, I would like to thank the educators... You taught us to prioritize learning and improving, and many communications skills I will use for the rest of my life. All of the educators I am thanking include [AmeriCorps volunteers] that would stay after PREP to help students like me with work they are struggling on. One subject that tutoring helped me with was problem-solving. That is probably one of the subjects I struggle with the most, but all I need to understand certain concepts is a deeper explanation. Because of tutoring when I needed it and studying most nights I reached my goal of thoroughly understanding math concepts taught … This is why I'm thankful for [AmeriCorps volunteers] being here. "
[I]t was very fulfilling to watch the impact that our mentors had on our students. I watched as our [AmeriCorps] volunteers coordinated the needs of students who were struggling... At lunch, and during open class time, these [AmeriCorps] volunteers worked together to help as many students as they could to be successful in their academics. I also watched them look out for the social and emotional needs of their students. Where I had my eye on the overall success of the program, these mentors had their eye on the success and happiness of each individual student. They were a remarkable group of young adults who left a lasting impact on the students they served.

SUMMARY

A summary of the findings presented in this report is shared after the introduction to the document under the AmeriCorps Utah STEM Initiative Collective Findings section.

APPENDIX A: AUSI 2023 EVALUATION RUBRICS

Purpose:

Each year a program evaluation is conducted for the AUSI program by a third-party evaluator. This evaluation seeks to gather and report evidence of the effectiveness of programs sponsored by AUSI. In addition, this evaluation report is used to help AUSI maintain and secure new funding resources and help program administrators improve programming. The rubrics in this document are designed to help gather data that will be used in this evaluation.

2023 Rubrics:

Each rubric identifies four areas where each student should be evaluated. For example, if your program has implemented an *Engineering is Elementary* or *Engineering is Everywhere*, you will rate your students using Rubric 1. All other programs should use Rubric 2.

Each rating is a holistic observation of each student's growth/increase in **awareness**, **understanding**, or **engagement** in the four areas. Possible rating values range from 0 (No Increase) to 10 (significant increase).

Engineering is Elementary & *Engineering is Everywhere*												
Rate each student on a scale from 1-10 on your observed increase in their awareness, understanding, or engagement in the following areas.	No Increase					Moderate Increase					Significant Increase	Not Applicable
Rating	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**NA**
Engineering Roles/Careers												
Engineering Design Process												
EiE Unit Content Area												
Group work (Social-emotional skills)												

Site Developed or Selected Programming												
Rate each student on a scale from 1-10 on your observed increase in their awareness, understanding, or engagement in the following areas.	No Increase					Moderate Increase					Significant Increase	Not Applicable
Rating	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**NA**
STEM Subject Academic Performance												
Positive Attitudes Toward STEM Subjects												
Confidence Approaching STEM Subjects												
Group work (Social-emotional skills)												

APPENDIX A - STUDENT ATTITUDES TOWARD STEM SURVEY

Rating Scale Example



Survey Questions:
S1 I am good at science
S2 Learning science can help me get a good job
S3 I will study science in college
S4 I enjoy learning science
S5 I like doing science-related activities
S6 I see myself as a science person
S7 Others see me as a science person
S8 I expect to do well in next year's science class
M1 I am good at math
M2 Learning math can help me get a good job
M3 I will study math in college
M4 I enjoy learning math
M5 I like working with numbers
M6 I see myself as a math person
M7 Others see me as a math person
M8 I expect to do well in next year's math class
TE1 I see myself as an engineering person
TE2 Others see me as an engineering person
TE3 I see myself as a technology person
TE4 Others see me as a technology person
GM1 I like activities that challenge my thinking abilities
GM2 I like work that I learn from even if I make a lot of mistakes
GM3 When something is hard, it makes me want to work more on it, not less
GM4 I keep trying to improve myself, even when it takes a long time to get there
GM5 I enjoy thinking about new solutions to problems
C1 I am interested in careers that use science-related skills or knowledge
C2 I am interested in careers that use math-related skills or knowledge

C3 I am interested in careers that use technology-related skills or knowledge
C4 What job would you like to have when you grow up?

_____

C5 Why would you like to have this job?

_____

E1 I am interested in studying science after high school
E2 I am interested in studying math after high school
E3 I am interested in studying technology-related topics after high school
E4 What would you like to study after high school?

_____

E5 How far in school do you want to go?

- GED Only
- High school graduation
- Graduate with a 2-year college degree (Associate's)
- Graduate with a 4-year college degree (Bachelor's)
- Graduate from graduate school with a Master's degree or equivalent (2 more years of school after a Bachelor's degree)
- Graduate from graduate school (4+ years after a Bachelor's) with a Ph.D. (professor, researcher), M.D. (medical doctor), or other advanced degree (veterinarian, dentist, lawyer)
- I don't know yet

PF1 How satisfied are you with the PREP program?

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied
- Extremely dissatisfied

PF2 How likely are you to recommend PREP to a friend?

- Extremely likely
- Moderately likely
- Slightly likely
- Neither likely nor unlikely
- Slightly unlikely
- Moderately unlikely
- Extremely unlikely

PF3 What were the best parts of PREP?

_____

PF4 What were the most challenging parts of PREP?

_____

PF5 How could PREP be improved?

_____