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ARMY EDUCATIONAL OUTREACH PROGRAM

2023 RESET Evaluation Report
Summative Findings

June 2024

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ARMY EDUCATIONAL OUTREACH PROGRAM

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This report has been prepared for the AEOP Cooperative Agreement and the U.S. Army by Education Development Center, Inc. on behalf of Battelle Memorial Institute (Lead Organization) under award W911 SR-15-2-0001.

Contents

Executive Summary

The Army Educational Outreach Program (AEOP) offers students and teachers science, technology, engineering, and mathematics (STEM) programming that is designed to attract, develop, and mentor the next generation of the nation's diverse talent through United States (U.S.) Army educational outreach programs. The Research Experiences for STEM Educators and Teachers (RESET) program supports the AEOP mission by providing high school and middle school educators with authentic summer research experience at participating Army Research Laboratories and Centers.

Education Development Center, Inc. (EDC), the external evaluation partner for AEOP, conducted a summative evaluation of the 2022-2023 program year. The FY23 evaluation sought to document and assess the benefits of participation, program strengths and challenges, and overall effectiveness in meeting AEOP and program objectives. The primary tools for data collection were participant post-program surveys. It is important to recognize that survey results only reflect those individuals who completed surveys and may not be generalizable within the RESET program.

Key findings from the evaluation are presented below.

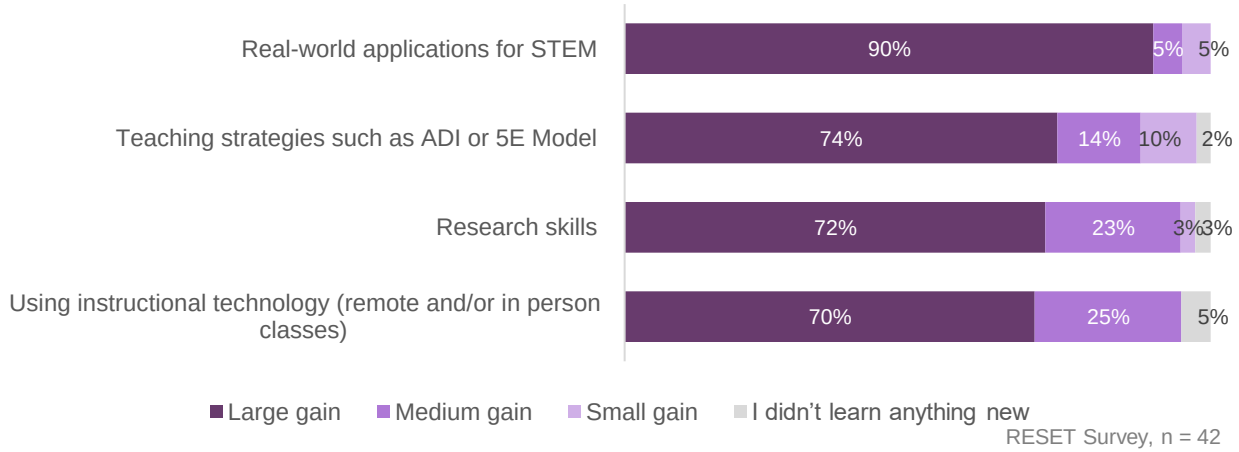
Overview of Participants

Although the majority of AEOP participants are students, educators have an opportunity to develop their STEM content knowledge and enhance their teaching practices through RESET. In FY23, 85 teachers participated in RESET as teachers receiving training (n=69) and mentors providing training (n = 16). The teachers who received training were surveyed and 49 completed surveys (71% response rate).

Participant Experience and Outcomes

As Figure 1 shows, the majority of participants reported gains in all areas covered in the program.

Figure 1. RESET teachers reported gains in all areas



When asked, *What are the two of the most important strengths of RESET*, themes included:

- Learning about a variety of careers in STEM fields that can be shared with students
- Practicing new skills and techniques
- Collaborating with other educators
- Access to resources and teaching strategies
- Onsite opportunities for teachers
- Experience in the lab
- Learning about what STEM researchers are doing in the field
- Opportunities to learn about and from experts in the field
- Networking and building connections with other teachers

In response to the question, *What are two ways that the RESET program should be improved for future participants?*, the top responses included better time management, more opportunities to meet and collaborate with other participants, and suggestions for the summer portion.

Recommendations

Although the data collected for this evaluation are not necessarily representative of the entire program, based on the survey results we offer the following recommendations:

Programmatic Considerations

Continue to offer content-rich professional development as well as relevant research experiences. Feedback from participants indicates that RESET was instrumental in deepening teachers' STEM content knowledge and developing effective teaching practices.

Explore ways to improve summer experiences. When asked about suggestions for improvement, some respondents made references specific to the summer component of the program. These included requests for more math- or tech-focused research, finishing the

summer project before school started, improved communication between participants, and access to virtual options.

Evaluation Considerations

Continue to examine ways to increase response rates. The survey response rate (71%) means that the responses may not represent all RESET participants' experiences. The IPAs and AEOP Consortium should explore strategies to improve response rates in the future.

1 Introduction

AEOP Priorities & Goals

The Army Educational Outreach Program (AEOP) mission provide an accessible pathway of science, technology, engineering, and mathematics (STEM) opportunities to attract, develop, and mentor the next generation of our nation's diverse talent through United States (U.S.) Army educational outreach programs.

AEOP has three priorities:

1. **STEM Literate Citizenry**. Broaden, deepen, and diversify the pool of STEM talent in support of our Defense Industry Base (DIB).
2. **STEM Savvy Educators.** Support and empower educators with unique Army research and technology resources.
3. **Sustainable Infrastructure.** Develop and implement a cohesive coordinated, and sustainable STEM education outreach infrastructure across the Army.

The Research Experiences for STEM Educators and Teachers (RESET) program supports the AEOP mission by providing high school and middle school educators with authentic summer research experience at participating Army Research Laboratories and Centers.

2 Evaluation Approach

Education Development Center, Inc. (EDC) is AEOP's external evaluation partner. The primary tools for data collection for the RESET program were participant post-program surveys, which were designed to evaluate the benefits of participation, program strengths and challenges, and overall effectiveness in meeting AEOP and program objectives.

2.1 Survey Respondents

This report describes participant data and results from participant surveys.

Participant Survey Response Rates

In FY23, 69 teachers participated in the AEOP RESET program. Forty-nine (49) completed surveys about their experiences, resulting in a 71% response rate.

- All survey respondents had at least 2-3 years of teaching experience and represented both middle and high school.
- Most participated in RESET Level I (65%), with 35% in Level II. 55% of respondents reported FY23 was their first year of the RESET program.
- Respondents included math teachers, science teachers, and STEM teachers.
- Most respondents learned about RESET from the RESET website, RESET social media, someone who participated in RESET, or from colleagues.

2.2 Report Organization

Evaluation findings presented below are guided by the research questions and organized thematically by topic. Sections include the following:

- AEOP Activities
- Development of STEM Skills
- Overall Experience
- Recommendations

3 AEOP Activities

RESET provides educators with summer research experience at participating U.S. Army Laboratories. The goal of this enriching program is to reinforce teachers' content knowledge through research experience and interactions with U.S. Army and Department of Defense scientists and engineers. Selected teachers participated in online learning as a cohort, with a subset of the cohort selected to conduct research on-site with a mentor U.S. Army scientist or engineer. At the completion of the program, it is expected that teachers will be able to translate this knowledge and experience into enhanced STEM research curricula and enriched learning for their students.

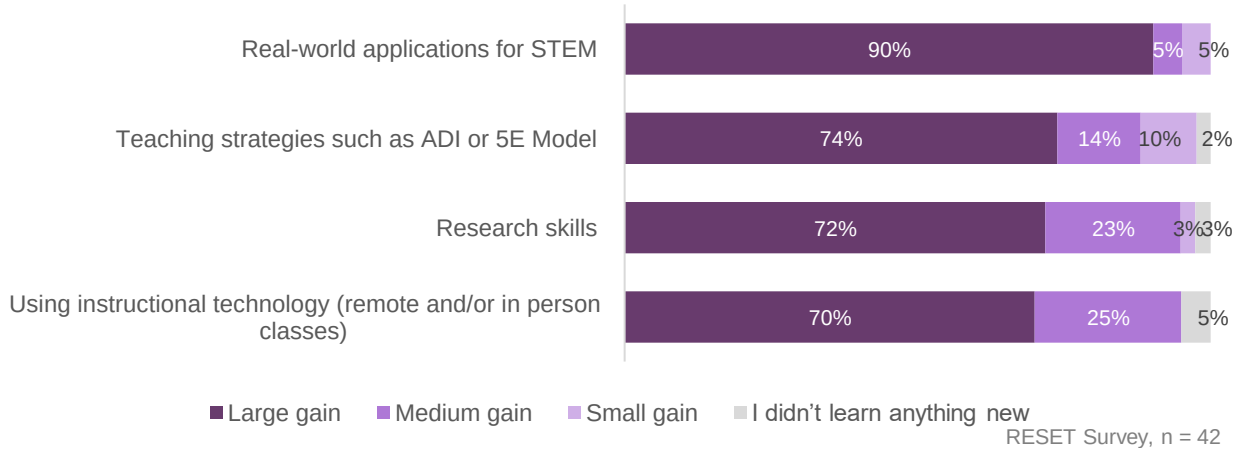
4 Development of STEM Skills

The majority of RESET participants reported gains in all areas covered in the program.

4.1 Teachers' Knowledge and Practice

More than four-fifths of survey respondents reported medium or large gains in knowledge because of their RESET experience (see Figure 1).

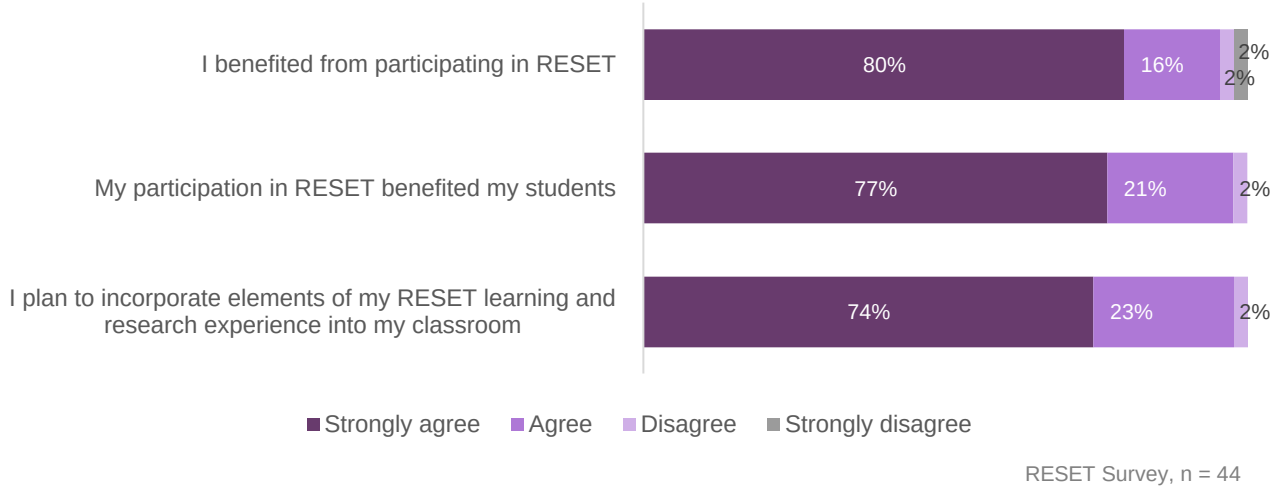
Figure 1. RESET teachers reported gains in all areas (n=42)



4.2 Benefits of Participating in RESET

Survey respondents reported they benefitted from participating in RESET and that their experience in the program will likely benefit their students as well (see Figure 3).

Figure 3. RESET teachers benefitted from the program (n=44)



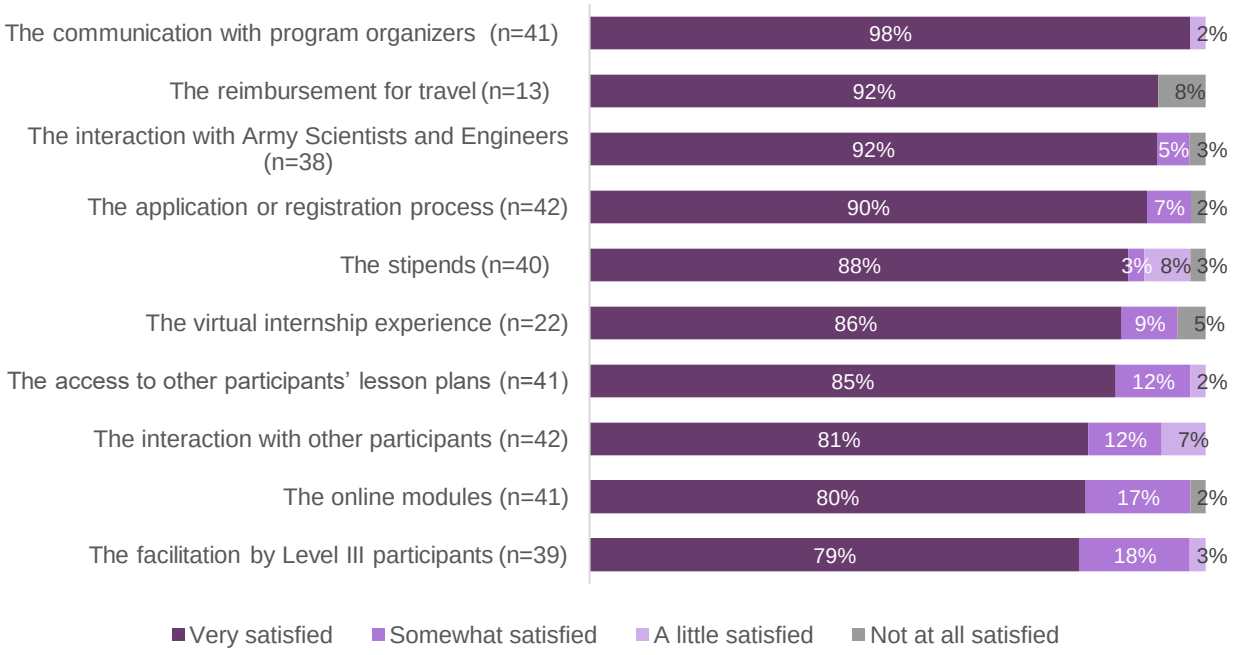
5 Overall experience

The majority of RESET participants reported strong satisfaction with the program.

5.1 Program Satisfaction

More than 90% of survey respondents were very satisfied with all the features of the RESET program (see Figure 2). Two features have relatively lower proportions of very satisfied responses (the virtual internship experience and reimbursement for travel); however, these were experienced by a smaller number of participants (22 and 13, respectively).

Figure 2. RESET teachers were very satisfied with program features



RESET Survey, n = 49

When asked to name two of the most important strengths of RESET, survey respondents mentioned many aspects of the program, including the lab experience, gaining teaching strategies and tools, and opportunities for collaboration and community. A selection of responses is included below.

Lab Experience

- *The in-person internship experience at a research lab was invaluable. I am super thankful I was able to complete an on-site experience. Doing the Level 2 experience was awesome!*
- *The experience in the lab. I learned so many things that will help my students on a daily basis.*

Teaching Strategies & Tools

- *Learning new teaching strategies or how to better implement current ones into my classroom.*
- *Improving my confidence, always sharing new classroom teaching strategies and meaningful, relevant lessons my students appreciate.*
- *I have gained all sorts of resources that help my facilitation of learning. I think my students also enjoy engaging in the different tools I have found out about through RESET.*
- *I have downloaded and used many of the lesson plans in my classroom. I edit them and make them my own.*

Collaboration & Community

- *Collaboration with peers and the variety of participants as well as the strength of the coaching staff.*
- *The connections and community that forms as a result of this program is incredible!*
- *I thoroughly enjoyed getting to join a community of educators who are passionate and experienced in different aspects of STEM and research.*
- *It showed me other like-minded individuals to connect with.*

5.2 Suggestions for Improvement

In addition to asking about their overall satisfaction, the survey also asked participants to identify areas for improvement. Participants were asked, *What are the two ways RESET should be improved for future participants?* The top responses included better time management, more opportunities to meet and collaborate with other participants, and suggestions for the summer portion. A selection of responses is included below.

Time Management

- *Set timers for Zoom calls to limit speaker's time.*
- *It would have been easier if we were all in the same time zone but I also know that is difficult to navigate between participants.*
- *Lesson plan presentations need to be shortened. Consider prerecording.*
- *The time between the meetings, sometimes they are too close, that is the only item that I think could be improved.*

Collaboration Opportunities

- *Connecting participants & leaders more earlier on through team building activities. One of the best parts of the program is all of us and I would like to form deeper connections for future collaboration.*
- *I think collaboration with my cohort might be improved. Maybe since RESET does not focus on collaboration, this might be why I think this part of the program could be improved.*
- *Having more interactions between the teachers earlier on to get to know each other would be nice.*
- *Pairing up curriculum teams in advance, give them an opportunity to meet and communicated with each other prior to the research experience and more accountability for members to contribute to the finished product.*

Summer Component

- *If there are mentors available, it would be amazing to have some summer research experiences that were more math or tech focused.*
- *Finish summer project before school starts back.*
- *One of my two partners did not do a lot during the summer portion. I wish there was a way to communicate that better.*
- *This summer's program was hard for me—maybe it was the situation? We were in the group that had a facilitator in a country that experienced bad weather so he had a hard*

time communicating with us. When we got a replacement it was fine and I enjoyed collaborating and creating our unit.

- *Travel is a challenge for summer programs, so more virtual options would be nice. No other improvements.*
- *The lesson plan done over the summer is a dynamic lesson plan that has to be approved but is subject to improvements overtime. I think this will strengthen the research component of the program if some are not in assigned Army labs or centers.*

6 Recommendations

This report distills findings from the RESET participant survey. As stated in the limitations, the data collected for this evaluation are not necessarily representative of all participants' experiences; however, based on the survey results presented above, we offer the following recommendations:

Programmatic Considerations

Continue to offer content-rich professional development as well as relevant research experiences. Feedback from participants indicates that RESET was instrumental in deepening teachers' STEM content knowledge and developing effective teaching practices.

Explore ways to improve summer experiences. When asked about suggestions for improvement, some respondents made references specific to the summer component of the program. These included requests for more math- or tech-focused research, finishing the summer project before school started, improved communication between participants, and access to virtual options.

Evaluation Considerations

Continue to examine ways to increase response rates. The survey response rate (71%) means that the responses may not represent all RESET participants' experiences. The IPAs and AEOP Consortium should explore strategies to improve response rates in the future.