

Powering Learning, Powering Lives

An Independent Evaluation of the We Share Solar Program

Conducted by The Research Group at the Lawrence Hall of Science, University of California, Berkeley

About the Evaluation

Researchers at UC Berkeley's Lawrence Hall of Science conducted an independent evaluation of the We Share Solar program — a hands-on educational experience in which students assemble Solar Suitcases that are shipped to communities living without reliable electricity. The study measured how participation shaped students' knowledge of solar energy, their attitudes toward STEM, and their sense of global impact across a diverse group of more than 270 middle and high school students.

Who Participated

- **Racially and ethnically diverse:** 54% White, 21% Black or African American, 17% Hispanic/Latino, and additional representation from Asian, Native American, Pacific Islander, and Middle Eastern students.
- **A broad range** of socioeconomic backgrounds and home resource levels.
- **Mostly newcomers to solar:** the majority of students had no prior experience with solar energy systems before joining the program.

+45%

average gain in solar content knowledge across all students

Gap Closed

the gender gap in solar content knowledge disappeared

All Subgroups

every demographic subgroup showed significant gains

Key Findings

Solar knowledge grew — substantially.

Students' scores on a solar energy content assessment rose by roughly 45% on average from pre- to post-program, a statistically significant increase. The gain held across every group the researchers examined.

The gender gap in solar knowledge closed.

Boys entered the program scoring higher than girls on the content assessment. By the end, that gap was eliminated — girls' scores rose by more than 100%, drawing even with boys.

Underserved students made meaningful gains.

Students from STEM-minority racial groups, non-white students, those from lower-income households, and students with no prior solar experience all showed significant content knowledge growth — even where starting gaps existed.

Building something real is what resonated.

When asked what mattered most, students pointed to building something that helps other people, building something that actually works, and using real tools — affirming that purposeful, hands-on making drives engagement.

The global impact connection landed.

After the REM5 Virtual Reality Lab experience, the vast majority of students reported a deeper understanding of why the Solar Suitcases matter, and many said it made them want to do even more to have a positive impact on others.

“Building something with real tools that can help other people” was the single most common response when students described what mattered most about the experience.

Looking Ahead

The evaluation surfaced two priorities to extend the program’s reach and depth:

- **Targeted support** for students from STEM-minority and lower-income backgrounds, where pre-existing knowledge gaps narrowed but did not fully close.
- **Continued investment** in the program elements that activate students who enter with lower STEM engagement — early evidence shows the experience meaningfully strengthens both their belief in the value of STEM and their confidence in doing it.

The Bottom Line

This independent evaluation confirms that We Share Solar delivers measurable learning outcomes while engaging students across the full spectrum of backgrounds and prior experiences. The program turns abstract STEM concepts into hands-on action with real-world impact — and the evidence suggests that real tools, real work, and real impact are what make the learning stick.