2021 VIRTUAL LAB REPORT
Surveys and Report by Lunaria Solutions

Major Themes:
Perceptions of Project Scientist Virtual Lab
Experiences with online learning
STEM interest
Gender perceptions
Perseverance
Social Connectedness

The Girls at a Glance

Question Type: Qualitative and Quantitative
Number of Questions: 50
Evaluation Type: Pre-Post Survey

The Sample Size
52 Usable responses (Pre)
27 Usable responses (Post)

Location of respondents stayed overall the same from Pre to Post Survey, with both the East and West Cohorts increasing in respondents.

Notably, there was no participation from the MidWest cohort in the Post survey compared to the 9% that participated in the Pre survey.

Location of Cohorts

Age range varied slightly from Pre to Post Survey. While the 4-6 age range remained similar to the Pre-survey, the 7-9 age range increased from 36% to 52% and the 10-12 age range dropped from 44 to 26%. This drop is likely due to a lack of representation from the MidWest Cohort in the Post Survey which represented 60% of the 10-12 age group in the Pre Survey.

In all cohorts, most participants are in the 7-9 age range; ages 7-9 also saw the highest increase from Pre to Post Survey. East Cohort saw an increase in the 4-6 age range, from 13% to 17%, 7-9 increased from 39% to 50% and 10-12 decreased from 48% to 33%. The West Cohort increased in the 7-9 age range and decreased in 4-6.
Racial identities were similar from the Pre to Post Surveys, with some notable exceptions:

- Caucasian or White girls increased from 19% to 32%.
- Hispanic and Latin girls had a significant drop from 30% to 13%.
- Black or African American girls dropped from 21% to 16%.
- Multiracial girls increased from 10% to 19%.

Social media use is a factor that can influence responses. Social media can be particularly influential in ideas around gender roles, confidence and self-esteem.

There was a significant decrease in respondent social media use from the Pre Survey. Most respondents indicated that they used social media between less than 2 hours a day (64%), this number increased to 81% in the Post Survey. Moreover, there was a small number of respondents (2%) that indicated they used social media more than 10 hours a day, there were no selection of that option in the Post Survey.

There are no concerns over influence of social media use in this report.
Project Scientist Engagement | 2.94 score out of 4 | ↓ from 3.35

71% Of girls said they are connected with friends at Project Scientist Virtual Labs.

100% Of girls felt they could be themselves at Project Scientist Virtual Lab.

100% Of girls looked forward to participating in Virtual Lab everyday.

100% Of girls felt like they could make mistakes.

96% Of girls met someone in a career they admire at Project Scientist Virtual Lab.

Project Scientist Virtual Lab created an online environment where girls could be themselves, get excited about camp and explore STEM.

How would you describe Project Scientist?

• Brainstormed Ideas: Fun Entertaining Exciting Cool Hard Sometimes Interesting Amazing Engaging Lots of Learning Meeting New Friends Nice Teachers Fun Experiments Liked the Games.
• It is great place for girls to get interested in Science and realize that girls can all things that boys can do.
• A place where girls get to build and go deep into fun science subjects.
• Very interesting and fun to talk to real life scientists and the girls there. It’s much better to learn through projects.
• So I got to do 3 hours of Project Scientist five days a week. It was my first choice for summer camp. When I’m in school, the teachers don’t teach as much science as I’d like … Project Scientist is a safe learning place for me. I can be myself. I really like Miss Vivian and the other teachers. My favorite theme until now is Food Science and Forensics. So cool. I like my PS kits that I get in the mail. They have everything I need like scissors, glue, tape and other supplies. If i could describe Project Scientist in one word, it would be AMAZING. If i can give back to Project Scientist in the future, I would be someone’s mentor.
• A lot of fun with great information and exciting experiments. Love seeing other girls doing great things. I know I can do anything.
• Project Scientist is really fun. I like all the experiments and the art. The teachers are really nice. It’s a good place to learn science and I would want to go there again really soon.
• Awesome! Amazing! I would go there for as long as I live.
• The best!!!!!!!!
• It was really fun and I learned a lot of things.
• Fun while learning and building things.
• I really liked when we did the science labs and we did projects. My favorite project was when we used the rocks and the dirt.

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How would you describe online learning?

- Learning from home in my pjs - the best ever!
- You get to be in your own home, on a computer, and learn from teachers and friends. While there's less play time, it feels easier to be brave online.
- It’s definitely better to learn in person as well as much more fun and it’s harder to get distracted. However it’s nice to have the online learning option. It’s much better than not doing it at all.
- Sitting in front of a computer. Sometimes my eyes hurt and I asked my parents to go to an eye exam. I like online learning because I don’t have to travel far and my Project Scientist kit is at home with me. I love the expeditions, but they would be even better in-person.
- Sometimes fun sometimes challenging but very convenient.
- Learning online gives you the freedom to do things at your own pace without a lot of distractions in a classroom. You can also be in a space that you’re comfortable in.
- It is sometimes exciting and it is confusing. It is fun when you get to draw and make stuff. It can be boring because you have to sit for a long time and listen to your teacher.

Less participants agreed that they liked learning online, that it is easy for them to learn online, and that they were excited to go back to school in the post survey compared to the pre survey.

Only one question had an increase in participants who agreed, “I want to continue learning online”. The decreases could be due to the novelty of learning online, zoom fatigue or the discrepancy in MidWest participation from Pre to Post Survey.

67% of girls said if given the chance, they would participate in Project Scientists Virtual Labs again.

100% of girls reported that they like online learning better after participating in Project Scientist Virtual Lab.
When asked how they would describe online learning, most respondents, similar to in the Pre Survey, answered “Like school, but online” (33% vs. 38%) and “fun” (22% vs. 35%).

Other responses included, better than doing nothing, that online learning increased bravery, dissatisfaction with online learning, and eye strain.
The two graphs above compare respondents’ STEM interest score by age and racial identity. STEM interest by age decreased, however, some racial groups experienced an increase in STEM interest from the pre to the post survey, notably Caucasian/White, and Multiracial girls. This increase by racial identity, particularly for Multiracial girls (22% to 48%), is likely what caused the overall score to increase.

100% Of girls want to learn more about STEM.

100% Of girls feel more confident studying STEM after Project Scientist Virtual Lab.

93% Of girls can see themselves working in a STEM career.

The above graphs compare respondents’ STEM confidence and future aspiration scores by racial identity. In regards to girls being able to see themselves in a STEM career, that number did decrease for some racial groups.
100% Of girls said that they could explain math or science to their friends to help them understand. | ↑ from 92%.

The responses from the question “How would you describe STEM?” resulted in similar answers to the Pre Survey.

In the Pre Survey, 41% of girls responded with just the acronym, vs. 40% in Post; 8% added examples to their acronym, vs. 16% in Post; and 14% responded with an incorrect acronym, vs. 8% in Post.
Overall, all girls experienced an increase in confidence, however, some racial identities did have a decrease in confidence. Hispanic/Latina girls had the largest drop, from 58% to 24%, however, it is important to note that overall participation for Hispanic/Latina girls dropped from 30% in the Pre Survey to 13% in the Post Survey. Similar case for Black or African American girls, their overall participation dropped from 21% to 16%, which may explain the drop for the question “I am smart enough for my dream career.” This decrease could also be due to the challenging nature of STEM learning, the impact of online vs. in-person learning, or the decrease in respondents from the Pre to Post Survey.

The drops within racial identities might be attributed to girls preconceived confidence in STEM, the challenging nature of Project Scientist, difficulty navigating the online environment, or overall response decrease. This decrease also correlates to the overall decrease girls interest in online learning in, as that also dropped from 84% to 67%.

96% of girls said that they would not change the way they do things to please someone else | ↑ from 76%.
41% Of girls worry about what others think of them | ↓ from 49%.

30% Of girls would change things about themselves if they could | ↓ from 36%.

In contrast to the other results from the Confidence section, overall confidence increased when asked about speaking up regarding their personal boundaries (91% to 96%) and sharing their opinions with others (85% to 96%).
The girls' perseverance increased as a theme overall and across all questions except for question #1, “When I plan to get something done, I stick with it even if it is difficult,” which decreased by 3%. All other categories increased between 4% and 11%.

100% Of girls feel that it is okay to make mistakes | ↑ from 99%.

97% Of girls ask for help from friends or teachers when they need it | ↑ from 92%.
All social-connectedness questions decreased from the Pre to Post Survey by between 1% - 4%. Question 1, “I have friends I can be myself around” increased by 3%.

Project Scientist Virtual Lab created a space for girls to connect with friends virtually and apply practices to engage in healthy friendships.

82% Of girls tell their friends if they hurt their feelings | ↓ from 86% in Pre Survey.

92% Of girls are friends with people who they feel accepted and included by | ↓ from 94% in Pre Survey.

Overall, more girls in the East Cohort felt an increase in social connectedness, except for question 4: “I am friends with people who I feel accepted and included by.” Less girls would tell their friends if they hurt their feelings, or have friends they feel accepted and included in the post survey in comparison to the pre.
What is your dream career?

Project Scientist created a space for girls to learn about career opportunities in STEM. After participating in Project Scientist Virtual Lab, almost 60% of girls said their dream job is in a STEM field.

Careers in a larger font indicate that it was a more popular choice amongst respondents.

92% Of girls stated a woman when asked “Who is a leader you look up to?”
52% Of girls stated a person in a STEM field when asked “Who is a leader you look up to?”

There was an increase of awareness of women in STEM careers among respondents from 60% in the pre-survey to 71% in the post-survey. Respondents also had an increase in awareness of individuals of all genders within STEM careers they admire, from 71% in the pre-survey to 81% in the post-survey.