

ZOOM SEASON VI EVALUATION: EXECUTIVE SUMMARY

INTRODUCTION

Goodman Research Group, Inc. (GRG), a research firm in Cambridge, Massachusetts specializing in program evaluation, has been conducting external evaluation of ZOOM for WGBH-TV Boston since 1998. GRG's Season VI evaluation comprised a pilot test to investigate the effectiveness of the new online ZOOMSCI™ TRAINING: LEARN TO LEAD SCIENCE ACTIVITIES (ZOOMsci Training), a self-directed, online tutorial designed to help afterschool educators learn how to lead hands-on science activities with kids ages 8 to 11. The goal of the training is to motivate leaders, help them develop science-teaching skills, and enable them to access the resources they need to conduct science activities or to enhance the activities they may already be using.

GRG sought to answer two questions: (1) Is the ZOOMsci Training an effective tool?, and (2) How do different levels of training influence outcomes? To answer these questions, GRG recruited Girl Scout leaders from four national GSUSA councils to participate in a pilot test with their Junior Girl Scouts (age group: 8-11 years). Councils included: Girl Scouts of San Francisco Bay (CA), Girl Scouts of Rhode Island (RI), Columbia River Council, Inc. (OR), and Girl Scouts of Nassau County, Inc. (NY).

The pilot study employed an experimental design to assess whether degree of use of the ZOOMsci Training had a differential impact on leaders and girls. GRG randomly assigned the four GSUSA councils into one of two experimental conditions that dictated specific use of the ZOOMsci Training tool. The conditions are described below; evaluation activities required of participants are outlined in Table 1.

Condition 1: "Online Only" Leaders interacted with the ZOOMsci Training tool online, independently

Condition 2: "Combo" Leaders attended a face-to-face training led by their council leader and then interacted with the ZOOMsci Training tool online, independently

Table 1
Outline of Evaluation Activities

Meeting	Activity
Meeting 1	<ul style="list-style-type: none"> ▪ Watch episode of ZOOM VI (video provided) ▪ Girls complete Pre-survey: Part 1
Meeting 2	<ul style="list-style-type: none"> ▪ Conduct pre-training ZOOMsci activity from episode viewed ▪ Girls complete Pre-survey: Part 2 ▪ Leaders complete Pre-survey
ZOOMsci Training	<p>Online Only Condition:</p> <ul style="list-style-type: none"> ▪ Leaders complete independent online training
	<p>Combo Condition:</p> <ul style="list-style-type: none"> ▪ Leaders attend face-to-face training led by council leader^a ▪ Leaders complete independent online training
Meeting 3 ^b	<ul style="list-style-type: none"> ▪ Conduct post-training ZOOMsci activity (Flinker) ▪ Girls complete Post-survey ▪ Leaders complete Post-survey

^a Face-to-face trainings lasted about 2 hours.

^b Meeting 3 took place within one week of completing online training.

In addition to collecting surveys completed by participating leaders and girl scouts, GRG evaluators scheduled six site visits to observe the ZOOMsci activities being conducted and to observe one face-to-face training session. Data collected from these visits were intended to supplement survey findings.

This document highlights the major findings from this pilot test.

KEY FINDINGS

Leaders' and Girls' General and Science-Related Girl Scout Experiences

- Leaders had been working with girl scouts for up to 11 years and had worked with children ranging from under five years to 15-17 years old. Most leaders typically had an assistant leader with whom they shared most responsibilities. While most leaders had attended face-to-face trainings for Girl Scouts, few were trained to lead science activities with Girl Scouts.
- Most leaders did not have educational background or training in science (47% reported they had some undergraduate science courses), but reported they were confident and comfortable leading hands-on science activities with their girl scouts. Before participation in the evaluation, 61% reported they led science activities with girls about one to four times per year; most (78%) reported they usually get ideas for science activities from leader guides or Girl Scout handbooks.
- Girls were mostly in 4th or 5th grade and the vast majority (89%) reported they had done science activities at school. About two thirds each said they had done science activities at home and at Girl Scouts. Girls reported they do

science activities more often at school than at home. As would be expected, girls reported doing science activities at Girl Scouts more frequently after participation in this pilot study than before the study.

Previous ZOOM Interactions and Ratings of ZOOM VI Episode

- ❑ Most leaders (89%) were familiar with ZOOM and had watched the program, primarily with their children.
- ❑ Nearly all girls had watched ZOOM and half had done a ZOOM activity in the past. Half of those who had done a ZOOM activity did a science activity. Most got the idea for the activity from watching ZOOM on TV. About one in four girls have also visited the ZOOM web site.
- ❑ Leaders perceived, and girls confirmed, that the girls enjoyed the ZOOM VI episode they viewed. Leaders rated girls' enjoyment of ZOOM 4.20 out of a possible 5; more than three quarters of the girls reported they liked *most* or *all* of the program. Girls expressed enthusiasm about the program, and wanted to try several of the activities they saw on the show, including the Spaghetti and Marshmallow Tower ZOOMsci.

Leaders' Use and Satisfaction with ZOOMsci Training

- ❑ Most leaders completed the ZOOMsci Training in one sitting, usually in under an hour. A few leaders went through the training, either in its entirety or particular sections, multiple times.
- ❑ Leaders took every opportunity throughout the ZOOMsci Training to read the documents that provided science content and background and referenced those resources repeatedly.

Try an Activity

The Glass Xylophone activity was read by more than three quarters and conducted by half (Real version) or a quarter (Virtual version) of the leaders. Most read the accompanying "Science Scoop" information once or twice.

Learn to Lead

Most leaders watched each video clip, including the overview and the five steps for leading an activity. Most watched the clips once, and a few watched up to three times. Step 2: Introduce Activity was watched most frequently. More than half of those who watched each clip also read the transcript.

Wrap Up

Nearly all leaders read the "Learn More" handouts that contained additional information about the topics covered in the training, and from two thirds to three quarters also printed them out. Leaders reported referencing the handouts repeatedly. About half also shared all the handouts with colleagues.

Resources

The materials reviewed by most leaders were the lists of activities to conduct, the ZOOMsci Training Workshop (used by more leaders in the Online Only

condition), and the background science information. Nearly all leaders planned to use the tools in this section in the future.

- ❑ Leaders were quite satisfied with the ZOOMsci Training and said they learned about the ease, fun, and value of conducting science activities with girls. They would definitely recommend it to colleagues.
- ❑ Leaders believed their ZOOMsci training experience influenced the success of the post-training ZOOMsci activity (Flinker) they conducted with their girls, such that they felt better prepared to do the following: set up and lead the activity, answer girls' questions about science, and encourage girls to ask questions and think about new ideas.
- ❑ After their ZOOMsci Training, leaders were able to lead a science activity in such a way that girls were certain it was science rather than a craft activity. Nearly all girls identified the post-training activity (Flinker) as a science activity, not as an arts and crafts activity. In contrast, just over half of the girls had identified the pre-training ZOOMsci activity (Spaghetti and Marshmallow Tower) as arts and crafts.

Understanding and Demonstration of the Science Process During the ZOOMsci Activities Conducted

- ❑ Both leaders and girls reported they enjoyed the ZOOMsci activities, both before and after leaders' ZOOMsci training. Average ratings were between 4 and 5 out of a possible 5 (*complete* success and enjoyment).
- ❑ After using the ZOOMsci Training, leaders reported and demonstrated a better understanding of science process skills and were successfully able to pass those skills on to their girls. More leaders prepared for the activity by conducting it themselves first than did so before the pre-training ZOOMsci activity.
- ❑ During the post-training ZOOMsci activity, leaders reported carrying out more actions related to leading girls through the science process. For example, they encouraged girls to make predictions and encouraged them to change variables to see what would happen.
- ❑ Girls also demonstrated an understanding and use of the science process skills conveyed by their leaders during the post-training ZOOMsci activity. More girls reported they made predictions, changed variables to see what else would happen, discussed real-world connections, and discussed their designs with one another than did during the pre-training activity.

Leaders' and Girls' Perceptions of Science

- ❑ After the training, leaders described perceived differences between science and other typical Girl Scout activities. Main differences included the set up and preparation required before leading a science activity, and the fact that girls find science activities more interesting and engaging.

- After their leaders' ZOOMsci training, more girls agreed that "*being curious is a part of doing science.*" Girls also demonstrated a more advanced understanding of actions and behaviors that are involved with science. Actions that girls did not identify as being part of science before their leaders' training (e.g., *You make a guess about what will happen*) were positively identified as science after the training.

CONCLUSIONS AND RECOMMENDATIONS

GRG's conclusions and recommendations are based on leaders' reports of their use of and satisfaction with the ZOOMsci Training, and on leaders' and girls' perceptions about and methods of conducting ZOOMsci activities before and after the training. Our recommendations are designed to assist ZOOM as they prepare for national dissemination of the online training tool in Season VII.

The trainings led to increases in understanding and demonstration of science process skills. The online training proved to be sufficient; the additional face-to-face training component did not add significantly to the benefits of the online training. Nonetheless, the in-person attendees enjoyed the experience greatly.

For national dissemination of this tool, GRG recommends that ZOOM specify that either the online training alone or the online training plus a face-to-face component will help users develop science teaching skills. The training will also enable leaders to access the resources they need to conduct science activities or to enhance the activities they may already be using.

Girl Scout leaders' infrequent use of science activities with girls and the lack of Girl Scout trainings directed at leading science activities point to a need for the ZOOMsci Training for this type of audience. Virtually all leaders had attended face-to-face trainings, but very few had attended ones for leading science activities with girls. They were receptive to the idea of the training and enjoyed both its content and format. **GRG recommends ZOOM implement national dissemination strategies that highlight the gap in training that this product can fill.**

Both the leaders and girls described positive previous experiences with ZOOM, including the TV show, the web site, and conducting ZOOM activities on their own. Leaders were eager to be trained to use ZOOM-based activities, and girls were quite receptive to conducting the ZOOMsci activities. **GRG recommends promoting this training tutorial with the WGBH and ZOOM names and logos clearly visible because of the familiarity and positive associations with these names.**

Consistent with findings from GRG's evaluation of an earlier version of this ZOOMsci training tutorial, the biggest barrier some leaders experienced was a home computer with insufficient resources. **GRG makes the following recommendations in order to increase likelihood and ease of use:**

- **Continue to draw attention to the fact that the resource has low-tech as well as high-tech options.**

While most leaders have computers at home and feel comfortable using them, many described their computers as old and not able to accommodate the video clips and Adobe files. As noted by Girl Scout leaders in a previous evaluation, if users cannot access parts of the training, and have no alternative way to get the information, they may cease use of the tool.

The ZOOMsci Training included text-only options for all video clips and downloads. These options were clear and accessible to leaders in this study. In fact, many leaders read the text-only options (low-tech) in addition to viewing the video clips (high-tech).

- **Include system requirements, explanations for those requirements, and suggestions for use in case users' computers do not meet the requirements.**

A clear description of system requirements on the introductory page of the ZOOMsci Training will help ensure that leaders know whether or not they can use the entire training on their home computer. In this description, point out the fact that those elements of the training that require faster computers (e.g., video clips) have low-tech options (e.g., transcripts of the video clips) as well.

- **Provide a list of possible locations that Girl Scout leaders can access public or shared computers if necessary.**

In the Season V evaluation, Girl Scout leaders listed locations they can easily go to use a different computer if their home computer does not have sufficient resources. The list includes public libraries, Girl Scout Council offices, or computers at leaders' places of work.

- **Include a streamlined summary of online training tips.**

Leaders found the detailed steps helpful the first time through the training. They expressed interest in a brief wrap-up or bulleted review sheet that they can print out and keep with them for review each time they conduct a science activity in the future.

Overall, the ZOOMsci Training Tool was considered helpful by leaders. It helped them develop science teaching skills that they were able to use and convey to their girls.