Evaluation Working Group

What do we do in GLOBE?
Why evaluate?

June 2018

Sponsored by: NASA NSF Supported by: NOAA Implemented by: UCAR

The purpose of this group is to get in touch with all who are involved in GLOBE to find out how the Program impacts its participants, to identify evaluation tools and resources and build on the existing experience to provide suggestions that can help its implementation and outcomes.

Who we are

Yogendra Chitrakar

Lawrence Kambiwoa

Siham Salman

YIliass Lawani

Kevin O’Connor
Group Vice Chair

Nektaria Adaktilou
Group Chair

Andrea Ventoso
Group Secretary

Some highlights from our work

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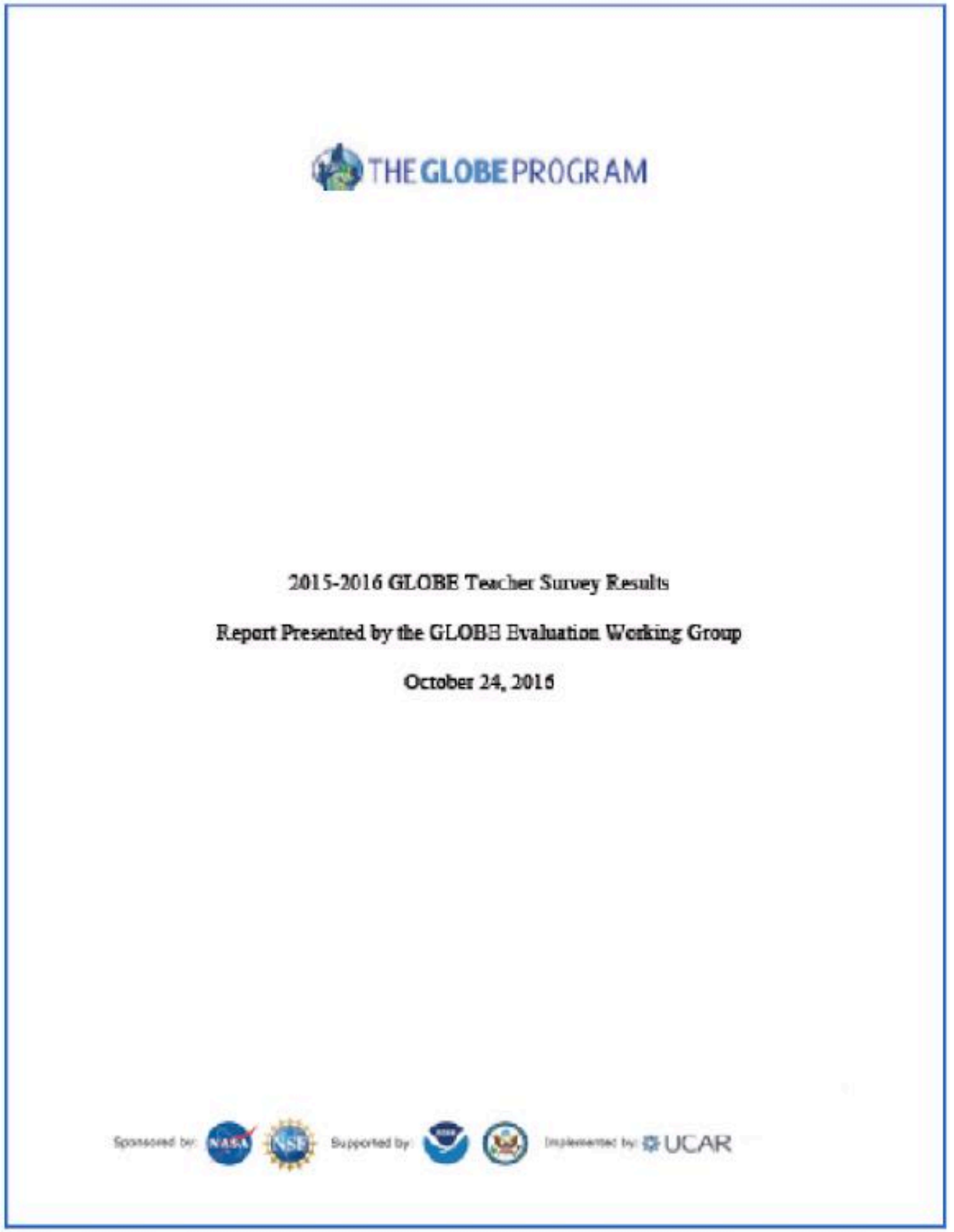
The teacher survey

The Evaluation Working Group has shared with the community the results of the 2015 and 2016 survey that was sent to the GLOBE teachers.


THE GLOBE PROGRAM

2015-2016 GLOBE Teacher Survey Results

Report Presented by the GLOBE Evaluation Working Group

October 24, 2016

Sponsored by: NASA NSF Supported by: Implemented by: UCAR

The report includes:

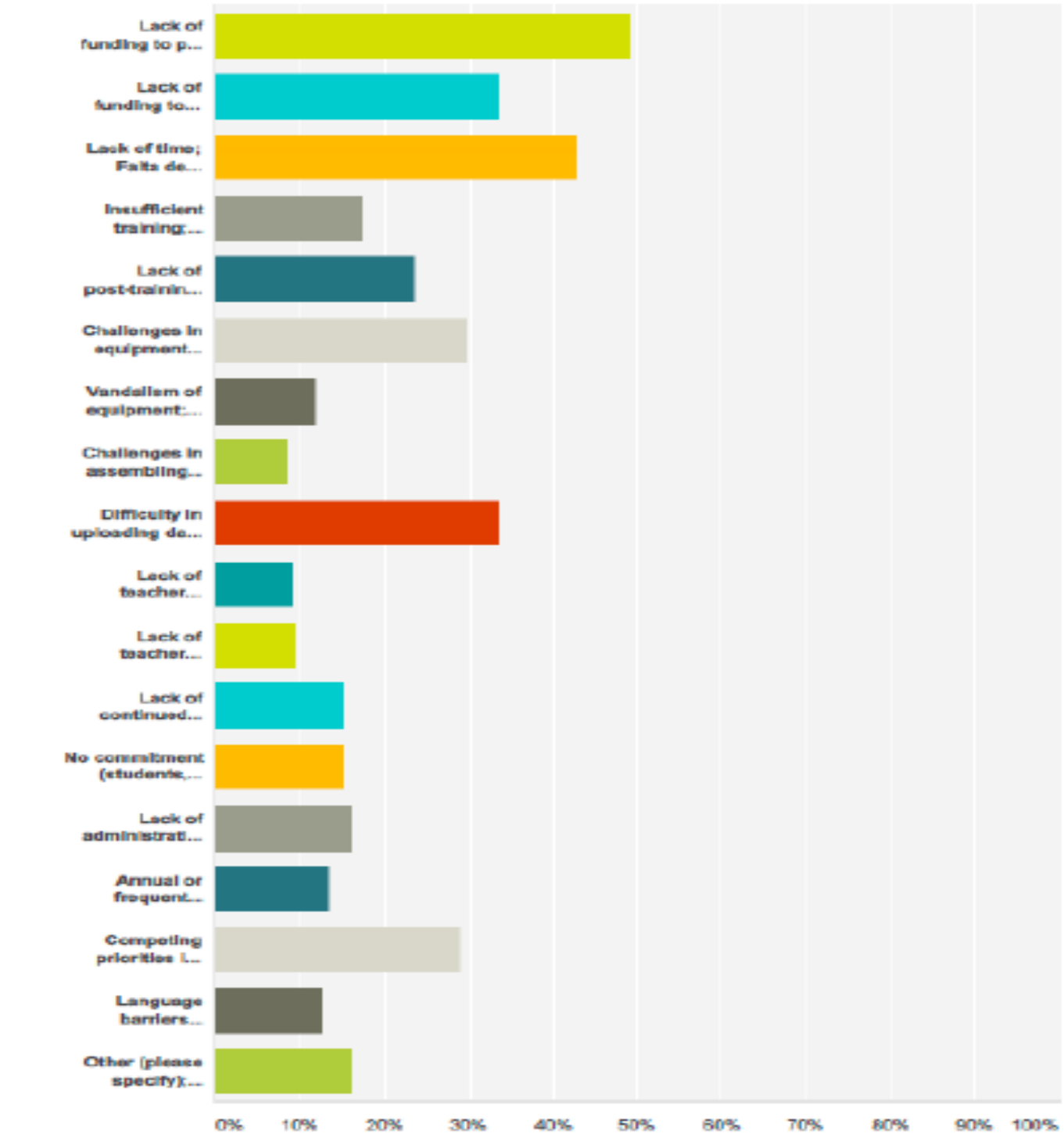
The current status of GLOBE at schools: successes, barriers and challenges,
Valuable aspects of the Program,
Fit of the Program in the curriculum- Incorporation in the instruction process,
Evaluation tools used,
Outcomes teachers want to be able to document,
Outcomes that teachers have seen from implementing GLOBE,
Types of support needed to better implement GLOBE,
Types of support needed to better assess the effectiveness of GLOBE,
Demographic data about the teachers.

Question 8

What barriers/challenges do you experience in implementing GLOBE?

This question was answered by 330 and skipped by 9.

The teachers primarily stated insufficient funding for equipment and materials (49%) along with insufficient amount of time (43%).
They also prioritized the difficulty in uploading data (33%)

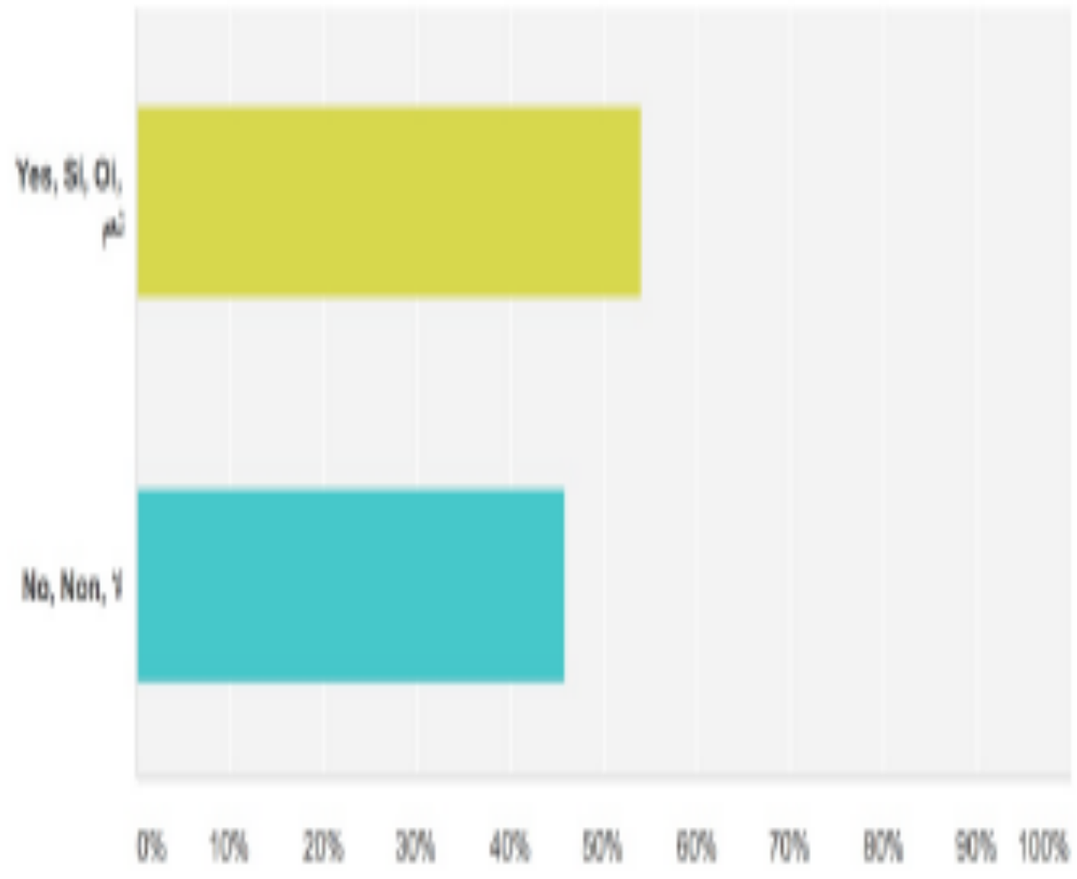


I find the lack of funding for teacher time interesting.

Question 11

Do you use evaluation tools to assess student learning and GLOBE implementation in your school?

Only ten respondents of out of all responses (337 in survey) have not responded to Q. 11. Over 50% (52.5%) responded positively, which means they have used some evaluation tool.



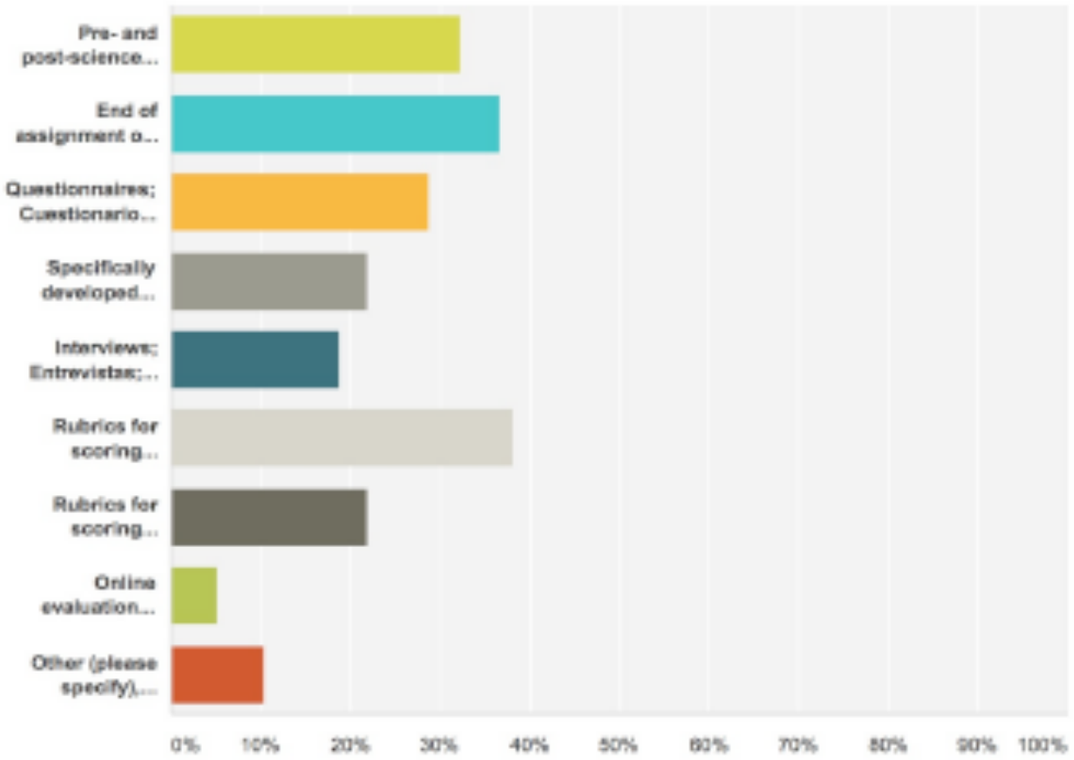
Question12

If yes, which types? (Choose all that apply)

Since respondents can choose more than one choices for the types of evaluation tool they use, there are 391 responses, from the ones that answered said "yes" in Q11. Except from the last response (Online evaluation tool) the response rate for all other responses varies between 10% - 20%. Nearly equal rates have been recorded for evaluation tools "End of assignment or unit assessments of learning and Rubrics for scoring projects or performance tasks- scored by teacher".

The numbers of responses are as follows:

- Pre- and post-science tests – 62
- End of assignment or unit assessments of learning – 70
- Questionnaires – 55
- Specifically developed evaluation tools – 42
- Interviews -37
- Rubrics for scoring projects or performance tasks- scored by teacher – 73
- Rubrics for scoring projects or performance tasks- - scored by outside professionals (as in juried science fairs or community presentations) – 42
- Online evaluation tool, such as simulations or other; please specify – 10



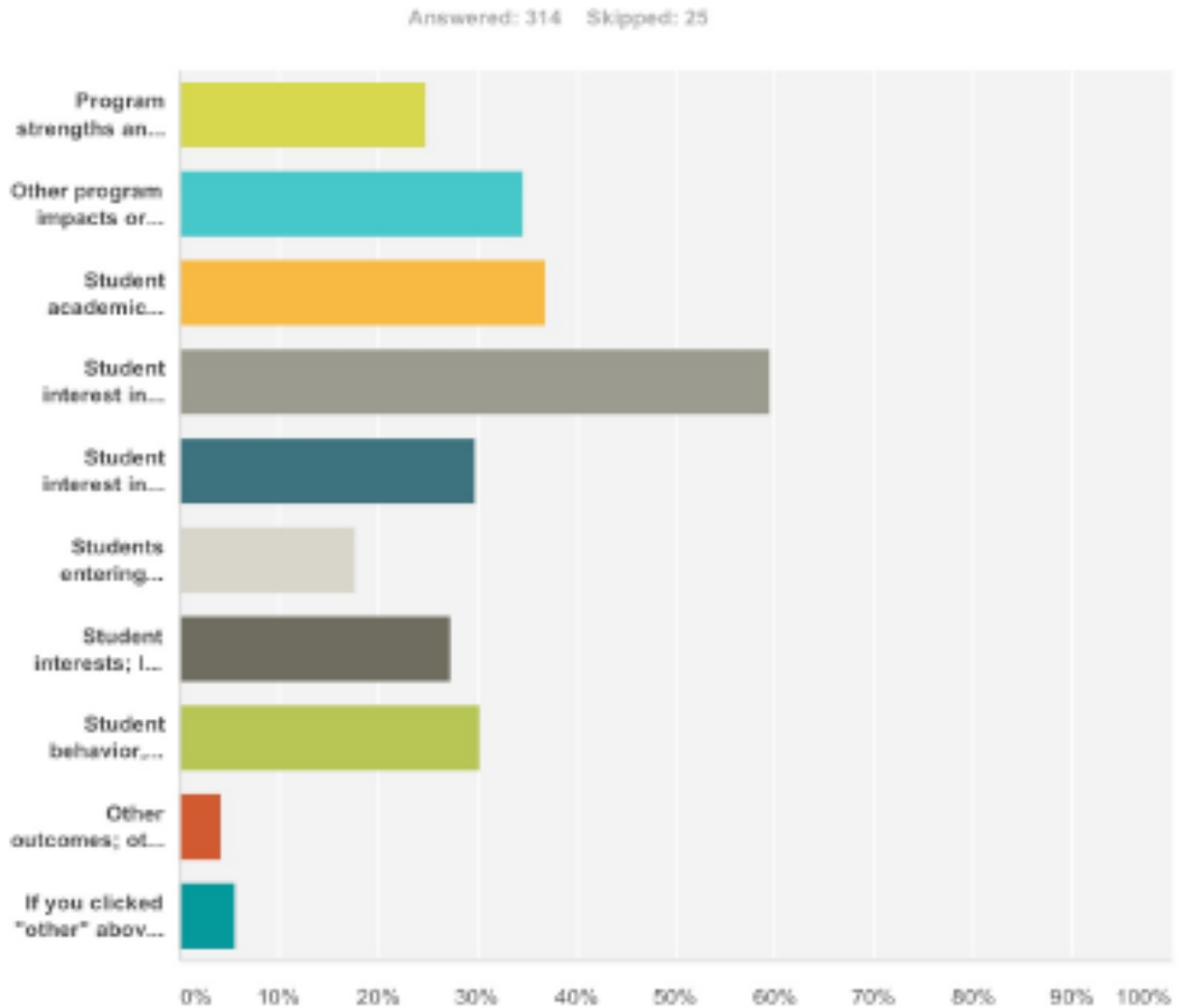
Question 13

What kinds of outcomes do you want to be able to measure or document? (Choose all that apply).

The question was answered by 314 respondents and skipped by 25.

The majority of the respondents (59.55%) stated that they would like to be able to report outcomes that are related to students' interest in science. This percentage is significantly higher compared to the percentage of teachers that chose students' academic outcomes (36.94%) or other outcomes such as impacts on school culture, results from students' projects, new collaborations etc. (34.71%). Students' behavior, attendance, social and emotional skills was the next more popular answer (30.25%).

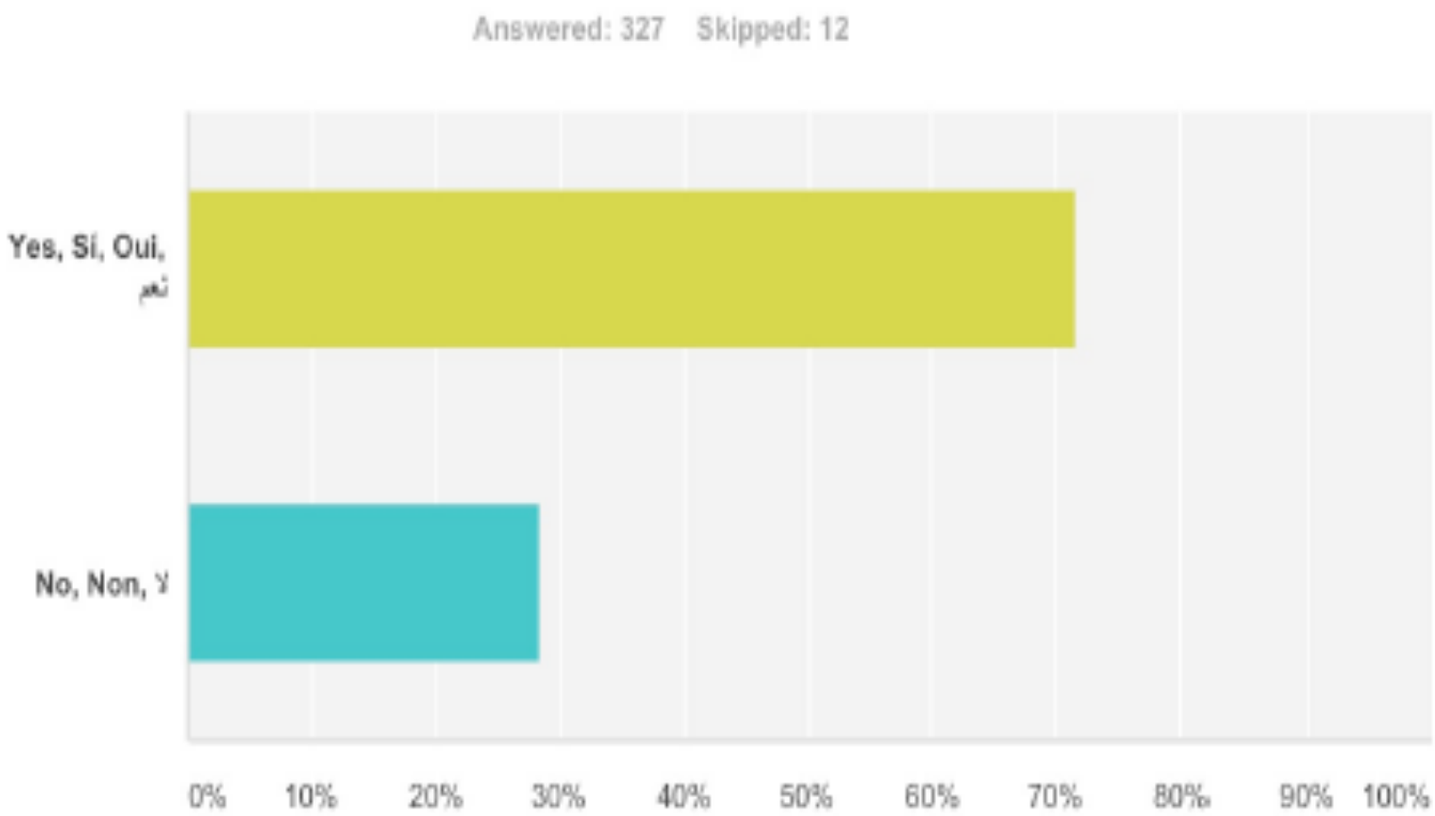
Students' interests in science careers (29.94%) and students' interests (27.39%) were the next more populated categories in the set of options that were provided in this question. A smaller percentage of the respondents (24.84%) stated they would like to be able to measure the strengths and challenges of the program.
Last, some of the respondents (4.14%) did not select any of the given options and chose 'other'*



Question 14

Do you report- or want to report- any information about your work to any individuals or organizations?

The question was answered by 327 respondents and skipped by 12.

The majority of the teachers who responded to this question report or want to report information about their work that relates to GLOBE to individuals or organizations (71.56% who choose 'yes' over 28.44% who choose 'no').	

This majority reflects the importance of having evaluation information that can allow the teachers to share information about the implementation and impact of GLOBE related activities.

Question 17: What other outcomes have you seen? Please describe.

From 339 surveys, 153 teachers answered the question and 186 skipped it.
The answers can be grouped into the following categories:

- Greater commitment, responsibility and awareness of students with GLOBE and environmental problems (*27 responses*)
- A positive change of attitude towards sciences (*17 responses*)
- More group and collaborative work among students, among teachers and between them, improves teacher-student relationship (*19 responses*)
- Development of a greater understanding and knowledge of nature and environment (*15 responses*) and the students observe weather conditions for themselves (*7 responses*)
- Strengthens the formulation of questions (pre and post investigation), the research capacity and develops critical thinking (*17 responses*)
- Improvement in communication and presentation skills (13 responses)
- Scientific method to learn sciences (*11 responses*)
- Importance of doing measurements correctly, collect and report data (*9 responses*)
- Better results in the curricular subjects, especially in science ones (*9 responses*)
- Students enjoy and have fun in class applying the GLOBE program and go outside to the field trips (*13 responses*)
- Fostering student collaboration and exchange with people from all over the world (*8 responses*)
- Family support and involvement in extra and curricular GLOBE activities (*4 responses*)
- Preference for science careers or continue their subsequent studies in science (*3 responses*)
- Students like to use (and learn to use) scientific instruments (*3 responses*)
- Hands on activities of the program (*3 answers*)
- A better subsequent curricular performance of those students who went through GLOBE training (*2 answers*)
- Interest in continuing its later involvement in GLOBE projects in the institution or being alumni to keep in touch with the program (*2 answers*)
- Ability to infer and connect data to real issues (*1 answer*)
- It contributes to improving the technical vocabulary (*1 answer*)

Most of the responses are very positive ones, teachers evidence a great variety of outcomes they have seen in class and can clearly identify and that possibly encourage them to go on applying GLOBE methodology as they see students feel comfortable with the program and like it. Other responses mentioned teachers are just starting in the program, they need time to assess the outcomes or would like to participate, need for time to disseminate and knowledge of the program, no time enough to report data or no solid data to report, need to increase the number of schools joining GLOBE in the school area (*10 responses*).
Only a few negative comments arise from the survey that are also valuable from the point of view they identify problems to apply the program.

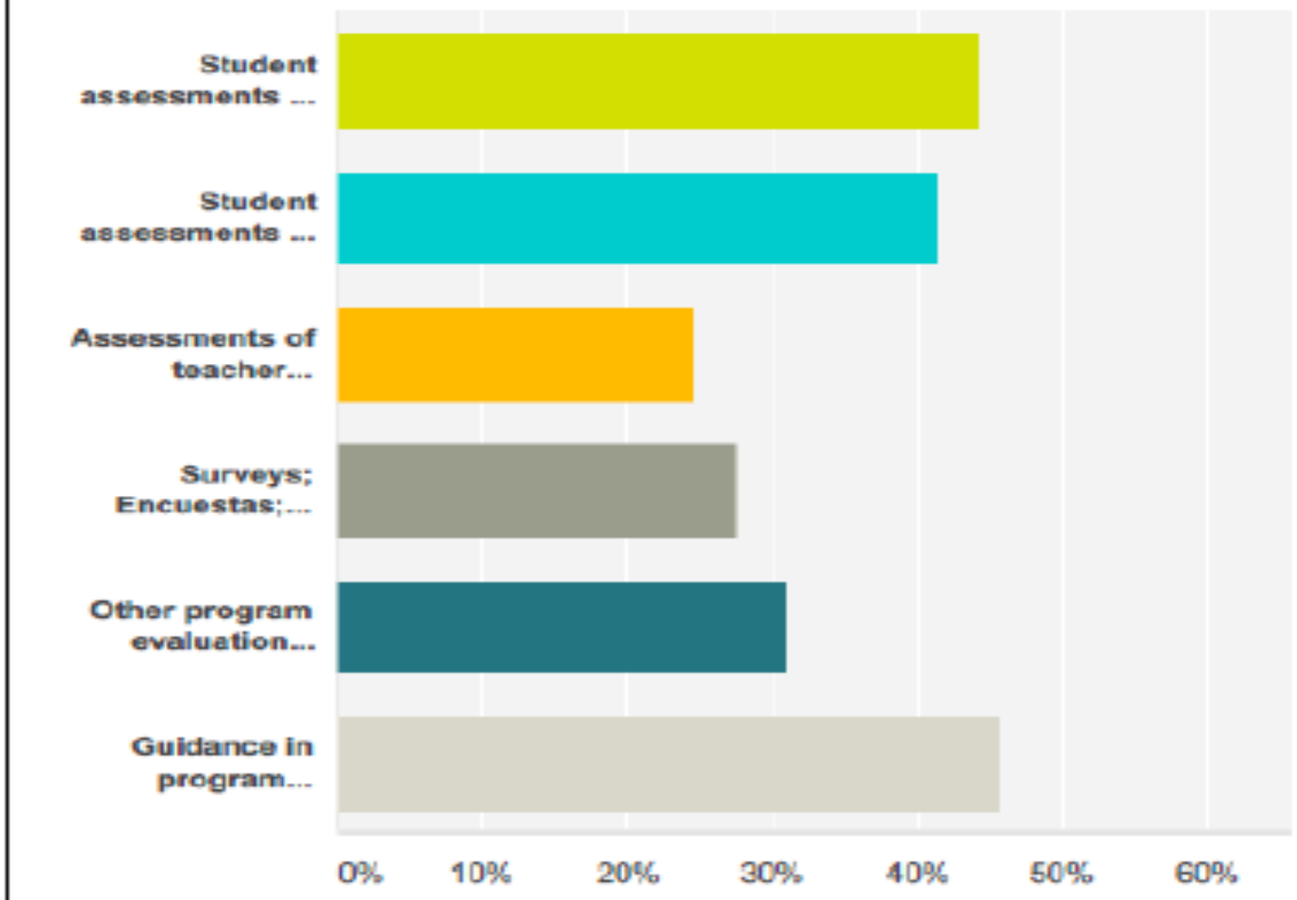
- No motivation or rewards for teachers nor students from the program (*1 response*)
- The teacher can't use it in class (*1 response*)

Question 19

Please select the types of support that would be useful to assess your program's effectiveness

This question was answered by 304 and skipped by 31.

Teacher's role/responsibility. teachers wanted support and guidance in program evaluation. (45%)
Student assessments of learning (44%): teachers designated that they needed support in assessing student interest in science and science careers(41%)



Seems teachers want to get more involved in program evaluation? Which evaluation are they talking about?

OUR CONTRIBUTION IN THE GLOBE COMMUNITY ANNUAL SURVEY

THE GLOBE PROGRAM

The GLOBE Implementation Office
Summary of the 2016 GLOBE Community Annual Survey

NOVEMBER 2016

Prepared by Valerie L. Williams, Ph.D.,
Senior Program Evaluator, UCAR Community Programs

THE EVALUATION RELATED QUESTIONS

Q.23: Do you have information on the evaluation tools being used in your GLOBE area schools that assess the quality of the GLOBE program, such as program implementation and student impact? If yes, please describe the evaluation tools that are being used.

Q.24: Do you know of successful teacher/educator practices utilizing GLOBE materials in your GLOBE area schools? If yes, briefly describe some of those practices.

Q.25: Do you experience any barriers and/or challenges to implementing the GLOBE program If yes, briefly describe some of them.

Q.26: Please describe how GLOBE can best support you in communicating program practices, outcomes, challenges, and/or benefits.

FOR THE FINALIZATION OF THE QUESTIONS INCLUDED IN THE GLOBE COMMUNITY ANNUAL SURVEY, THE GROUP WORKED WITH VALERIE WILLIAMS, GLOBE SENIOR PROGRAM EVALUATOR.

We want our work to be aligned to the Strategic Plan that has been recently revised.

Overview of Strategic Plan Education Performance Measures

Valerie L. Williams, Ph.D.
GLOBE Senior Program Evaluator

Sponsored by: NASA NSF Supported by: NOAA Implemented by: UCAR

GLOBE Strategic Plan consists of the following sections

1. **What is the GLOBE Program?**
   - Vision
   - Mission
   - Strategic priorities
2. **The GLOBE Program Organizational Structure**
   - GLOBE Program Office
   - GLOBE Implementation Office
   - GLOBE Regions and Regional Coordination Offices (RCOs)
   - GLOBE Partners
   - GLOBE Community
3. **The GLOBE Program Operational Structure**
4. **Goals and Performance Measures**

Performance measures will be used to monitor progress toward goals

- Performance measures were developed last to ensure that the most meaningful things are measured, not the easiest
- Proxy measures can be used until better measures are developed
- Where possible, data collected from annual survey are used to help determine targets and baselines
- Measures will help assess and understand the program's impact

Focus Area	Goal	Performance Measures	Baseline numbers	Performance Target
Materials and Resources	EG1. GLOBE materials and educational resources are accessible and useful to the GLOBE community in diverse environments	• Percent of GLOBE community members reporting that they access GLOBE materials and educational resources often; • GLOBE community members rating on the usefulness of GLOBE materials and resources Data Sources: • Annual GLOBE community survey; • Data analytics of users accessing GLOBE materials	Currently use often: 49% GLOBE website 28% Science Data entry 19% Data Visualizations	By end of 2022: 60% GLOBE website 35% Science Data entry 25% Data Visualizations Mean value of 3.0 or higher on 4 point scale of usefulness of GLOBE materials and resources by end of 2022

Focus Area	Goal	Performance Measures	Baseline numbers	Performance Target
Professional Development	EG2. GLOBE's capacity to deliver high quality professional learning experiences (trainings) has increased	• Number of GLOBE trainers available by region • Number of e-trained teachers available • Number of teacher training workshops held per year • Trainees' rating of quality of workshop	Current GLOBE trainers: 42 Africa 142 Asia and Pacific 201 Europe and Eurasia 133 LAC 73 NENA 649 North America Current # of Workshops Held: 101 Africa 297 Asia and Pacific 622 Europe and Eurasia 244 LAC 88 NENA 3997 North America	By end of 2022: 46 Africa 156 Asia and Pacific 221 Europe and Eurasia 146 LAC 80 NENA 713 North America By end of 2022: 111 Africa 320 Asia and Pacific 650 Europe and Eurasia 268 LAC 96 NENA 4200 North America 10% increase in the number of e-trained teachers by end of 2022 Mean value of 3.0 or higher on 4 point scale of quality of teacher training workshop by end of 2022
		Data Sources: • GLOBE Training database • Annual GLOBE Community Survey		

Focus Area	Goal	Performance Measures	Baseline numbers	Performance Target
Student Investigations	EG3. Students develop high quality STEM investigations of Earth systems phenomena from a local to global scale perspective	• Number of students developing STEM investigations • Avg score of rating of student investigations using IVSS rubrics Data Sources: • GLOBE Database • Annual GLOBE Community Survey	Current # of Student projects: 10 Africa 85 Asia and Pacific 108 Europe and Eurasia 36 LAC 159 NENA 240 North America	By end of 2022: 15 Africa 93 Asia and Pacific 118 Europe and Eurasia 45 LAC 170 NENA 265 North America Mean value of 3.0 or higher on 4 point scale of quality of student investigations (IVSS rubric) by end of 2022
Evaluation	EG4. Information on GLOBE's educational impact is regularly shared by the community	• Number of articles, publications, or presentations shared on the GLOBE website indicating GLOBE's educational impact Data Sources: • GLOBE website and webpages • Annual GLOBE Community Survey		10% increase in the number of articles, publications, or presentations shared on the GLOBE website indicating GLOBE's educational impact by end of 2022

One pager for funders

This document presents the benefits that your students gain from participating in the GLOBE program and provides this more formal presentation to give to potential funding agencies. Many different funding agencies exist and we have attempted to provide the brief essence of the importance and value of GLOBE that you can modify to meet your needs.

This document is available in English, French, Spanish, Portuguese, and Arabic.

THE **GLOBE** PROGRAM

The GLOBE (Global Learning and Observations to Benefit the Environment) program is a worldwide, hands-on, science and education program that aims at the development of awareness of one's "Place" in the natural world. Through the use of environmental science-related activities and an integration of local place-based learning, students develop an enlightened recognition of the proper relationship of self, community, and the global world.

GLOBE (Global Learning and Observations to Benefit the Environment) Program is an innovative worldwide hands-on science and education program focusing on learners at the Pre-school, Primary and Secondary Education Levels including their educators. Through the use of science activities and the manipulation of scientific materials under the guidance of an educator in the learner's environment, learners develop an enlightened recognition of the interactions of self, community, and the global world, becoming a global citizen scientist.

Teachers are trained to provide this innovative program in an adapted manner that incorporates their community's specific cultural and educational needs. There are opportunities to make connections on a global scale as GLOBE schools across the world share knowledge and collaborate on environmental activities. An outdoor education component is often incorporated, as many of the activities are undertaken in the field.

With GLOBE coming in their classroom activities and by being involved in the GLOBE program, students:

- acquire knowledge and skills in science
- learn the value of data collection and research
- learn how to develop a research question
- become connected to a network of scientists and STEAM (Science, Technology, Engineering, Arts and Math) experts that participate in the program and learn about STEAM careers and opportunities
- participate in research collaborations with other students and scientists
- develop 21st century skills
- acquire awareness and knowledge of other cultures
- develop leadership skills
- develop awareness and responsibility for the environment

In a nutshell, GLOBE supports the development of ethical, informed and engaged citizens with scientific training skills.

Students that participate in GLOBE are using their data for projects they do at their schools. GLOBE students are also encouraged to participate in GLOBE sponsored contests, competitions,

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New Haven trainees impressions (2017 Annual Meeting)

Reports for :

Atmosphere
Hydrology
Soils
Land cover
Mosquitoes

How the idea arose

- During the first meeting of the Evaluation Working Group at the 21st. Annual Meeting (07/30/2017), the group agreed to prepare a survey form in order to give to the participants who attended the training sessions.

- We considered this a good opportunity to get feedback from the diverse audience that this kind of events bring together: trainers, teachers, scientists, CCs, regional officers, students.

- The participants at each site had to work on the following protocols:

  COVE RIVER: hydrology, biosphere, atmosphere, soils

  HAMMONASSET: hydrology, atmosphere, intertidal transects

  CAMPUS: hydrology, atmosphere, soils, mosquitos

SURVEY QUESTIONS

Site name:

How many times have you conducted this protocol before today?
Never – A few (1-2) – Many (+3)

Did you do the e-training module before this workshop?
Yes - No

Circle the protocol that you felt that was more engaging to you. Describe why you felt it was engaging.
Atmosphere – Hydrosphere – Biosphere - Soils/SMAP – Mosquitos - Intertidal transects

What did you learn from it?

Were you able to successfully use the instruments?
Yes - No

Please describe the challenges associated with the protocols you conducted today.

What suggestions do you have to improve the protocols you conducted today?

Some interesting results from the analysis of the survey

The survey was applied to a total of 99 people who joined the trainings.

First time the participants practiced the protocol
12 participants in soils, 13 in atmosphere, 8 in Biosphere, 16 in Hydrology and 26 in mosquito larva.
This was 75 responses on a total from people that stated it was the first time they learned a new protocol.

Completing the e-training modules before coming to the training
22 participants in Hydrosphere, 24 for Biosphere, 9 for Soils and 18 for Mosquito Larva.
Biosphere and Atmosphere are the areas where most of the attendants completed the e-training modules.

Protocol they felt more engaging
The hydrology protocols were not selected as most favorites at any of the sites, 8 participants stated that the atmosphere ones were the most engaging, 7 affirmed that soils were for them and 17 people felt that the mosquito was the most engaging. There was only 1 response for biosphere.

The majority of the participants stated they were able to successfully use the instruments. Only 5 said they were not for Hammonasset (the instruments for Hydrology did not work in this case), 1 for Campus and 1 for the Cove River site.

Things they liked or learned

-They learned about science, education and life from all protocols.

-The Mosquito protocol: collecting samples, larvae identification, collecting data, using the cellphone Habitat Mapper app, using hand lens.

-Hydrology: using instruments and terminology, how the water impacts life, importance of calibration.

-Atmosphere protocols: important protocol for teachers, trainers and students, will trigger scientific knowledge and analytical skills. Cloud observer app can be a good tool and fun to work with.

-Biosphere: sites were very interesting and appreciated the history and knowledge provided by the trainers.

-Soil protocol very interesting and well explained.

Summing up the challenges met during the trainings:

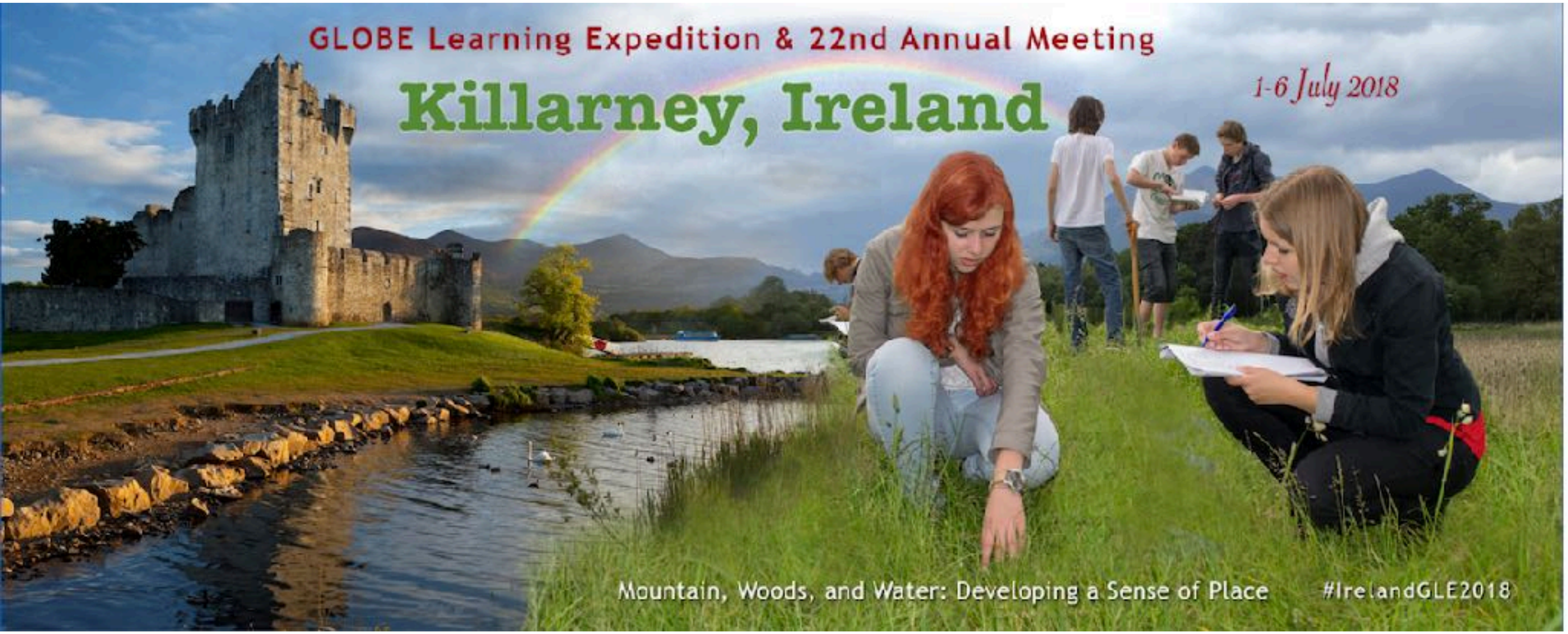
General ones: -more time to implement each protocol in each area
-not easy to use the phone app, must be complemented with the data sheets
-hot weather and no shade (couldn't see the screen of the cell phones)

Hydrology: -not much background was given
- Vernier ware was hard to use outside
-probes did not work properly
-cost of automated probes is quite high and makes them unattainable for many participants
-too much time was spent on the measurements, not enough time on calibration
-the training should be more organized

Mosquito: -there were no mosquitos to sample, shortage of devices for this protocol
-mosquito sampling field guide instructions are confusing
-it was difficult to identify larvae, the photos were not labeled on the GLOBE Observer app
-trainees couldn't see the display because there was no shade
-they couldn't figure how to zoom in while taking pictures in the app

Atmosphere: -Cover River site was not appropriate to observe the sky (time could have been used for other protocol).

Soil: -the field guide is a bit confusing
-soil characterization not clear in the app
-soil screen was missing
-the training should be more organized



Evaluation surveys

Purpose of the syrveys

- To understand how the meeting was perceived by the different participants.
- To provide the neccesary feedback to GlO in order to maintain quality professional development sessions, aligned to needs of GLOBE stakeholders.
- To improve the management of future GLOBE Annual Meetings.
- To understand the students' interest, experiences and feelings about the different GLE activities.
- To acquire feedback and disseminate the respective information to GlO's different groups that work to organize the meetings.

Different surveys

There will be three different evaluation surveys for the GLE:

- A Professional Development evaluation survey for the GLOBE adukts that will participate in the professional developement sessions.
- An Annual Meeting evaluation survey for all the participants.
- A Student Experience Evaluation survey for all the students participating in the GLE.

General participant survey

2016 GLOBE Annual Meeting Evaluation Questionnaire

Please complete this short questionnaire so we can continue to improve your experience at future GLOBE Annual Meetings!

1. Please select the one that best describes your role in the GLOBE Program.

☐ Alumni ☐ Country Coordinator/Int'l Partner ☐ Scientist
☐ Teacher ☐ Trainer ☐ U.S. Partner ☐ Other_____

2. Approximately how long have you worked with or been associated with the GLOBE Program?

☐ 0 – 4 years: ☐ 5 – 8 years ☐ 9 – 12 years ☐ 12 – 16 years ☐ more than 16 years

3. How many annual meetings have you attended?

☐ This is my first ☐ Between 2-5 ☐ Between 6-10 ☐ Over 10

4. One purpose of the annual meeting is to provide an opportunity for GLOBE Community to learn from experts and from each other. Overall, I would rate the opportunities to accomplish this purpose:

☐ Excellent ☐ Good ☐ Average ☐ Poor

Please explain your rating:

5. Please rate your overall satisfaction with the meeting logistics:

	Extremely satisfied	Very satisfied	Somewhat satisfied	Not at all satisfied	N/A
Pre-annual meeting information materials	☐	☐	☐	☐	☐
Additional Comments:					
Location: Killarney and Killarney Convention Centre	☐	☐	☐	☐	☐
Additional Comments:					
Hotel Accommodation & Services	☐	☐	☐	☐	☐
Additional Comments:					
Food and Beverages	☐	☐	☐	☐	☐
Additional Comments:					
Meeting Rooms	☐	☐	☐	☐	☐
Additional Comments:					
Transportation during the meeting	☐	☐	☐	☐	☐
Additional Comments:					

Professional Development Survey

Professional development (PD) evaluation form

(One form will be provided to the participants on Tuesday and one on Thursday)

Please take the time to complete this survey so that we can continue to improve at providing you with quality professional development that meets your needs.

I. Please select the option that best describes your role in the GLOBE Program.

Country coordinator/ international partner US partner Scientist

Alumni Teacher Trainer Other

II. Approximately how long have you worked with or been associated with the GLOBE Program?

0-4 yrs 5-8yrs 9-12 yrs
12-16 yrs More than 16 yrs.

III. How many annual meetings have you attended?

This is my first 2-5 6-10 More than 10

Please select the PD session you joined (This will be separated by day and the sessions in each strand will be listed as seen below) below. All sessions and sub-sessions will be selectable).

Tuesday
Session 1: GLOBE Weather Middle School Science unit
Session 2: GLOBE Implementation Best Practices
Elementary GLOBE Goes into the Woods
Incorporating Elementary GLOBE into the Classroom
Hop onboard the CSEP Train
A Teachers Journey from Field Campaign to IVSS
IVSS Project Sharing,
GLOBE Digital Games
GLOBE Mooc in Israel.
Session 3: Height Matters: School-based Measurements and Citizen Science with the ICESat-2 Mission

Thursday
Session 1: GLOBE Data Explorations
GLOBE Modules on Weather and Climate
European Air Quality Campaign
Meteorology in the School

Students' Experience Survey

STUDENTS' SURVEY

Students' experience: field experience, students' presentations, cultural nights

I. Age: _____

II. Country of origin: _____

III. Have you ever been in a GLE or Annual Meeting before?
This is the first time Yes, once In more than one occasion

IV. Please select the option/s that best describe your general experience during the GLE.
Excellent Good Average Poor No opinion

Field experience

1. Which field site did you visit?
Deenagh Lower Torc Upper Torc Ross Island

2. Which field site did you enjoy the most?
Deenagh Lower Torc Upper Torc Ross Island

3. Did you enjoy working with students from different countries?
Yes No

4. Did you have trouble communicating with your group?
Yes No (If yes, please explain_____)

	5.Which activities have you practiced for the first time?	6.Which one/ones did you find more interesting?	7. Which one did you find more challenging?	8. Which protocols would you like to use in a research project?
Mapping site				
Ground/vegetation cover				
Canopy cover				

Why do all this?
Why evaluate?

‘Evaluation is a scary word. My experience has been that as soon as you use that word, people get their backs up and feel like they are going to be evaluated, and hence judged. It gets personal very easily’

Margaret Floyd, Sparks Strategies, 2002

Evaluation is a complex process that requires:

- Planning
- People expertise
- Skills
- Time
- Resources
- Funds

How can GLOBE benefit from an evaluation process

- Know what to expect from GLOBE actvites.
- Identify who benefits from the expected results.
- Gather the right information to know whether the Program is achieving its goals.
- Know how to improve GLOBE's activities based on specific information.
- Know how to maximize positive influences / success stories and to avoid or overcome barriers/challenges/ constraints.

- Communicate plans and achievements more clearly to all involved in GLOBE and to other organizations.

- Gain from the knowledge, experience and ideas of the people involved.

- Provide the support that is necessary to stakeholders.

- Provide accurate and convincing information to support applications for funding.

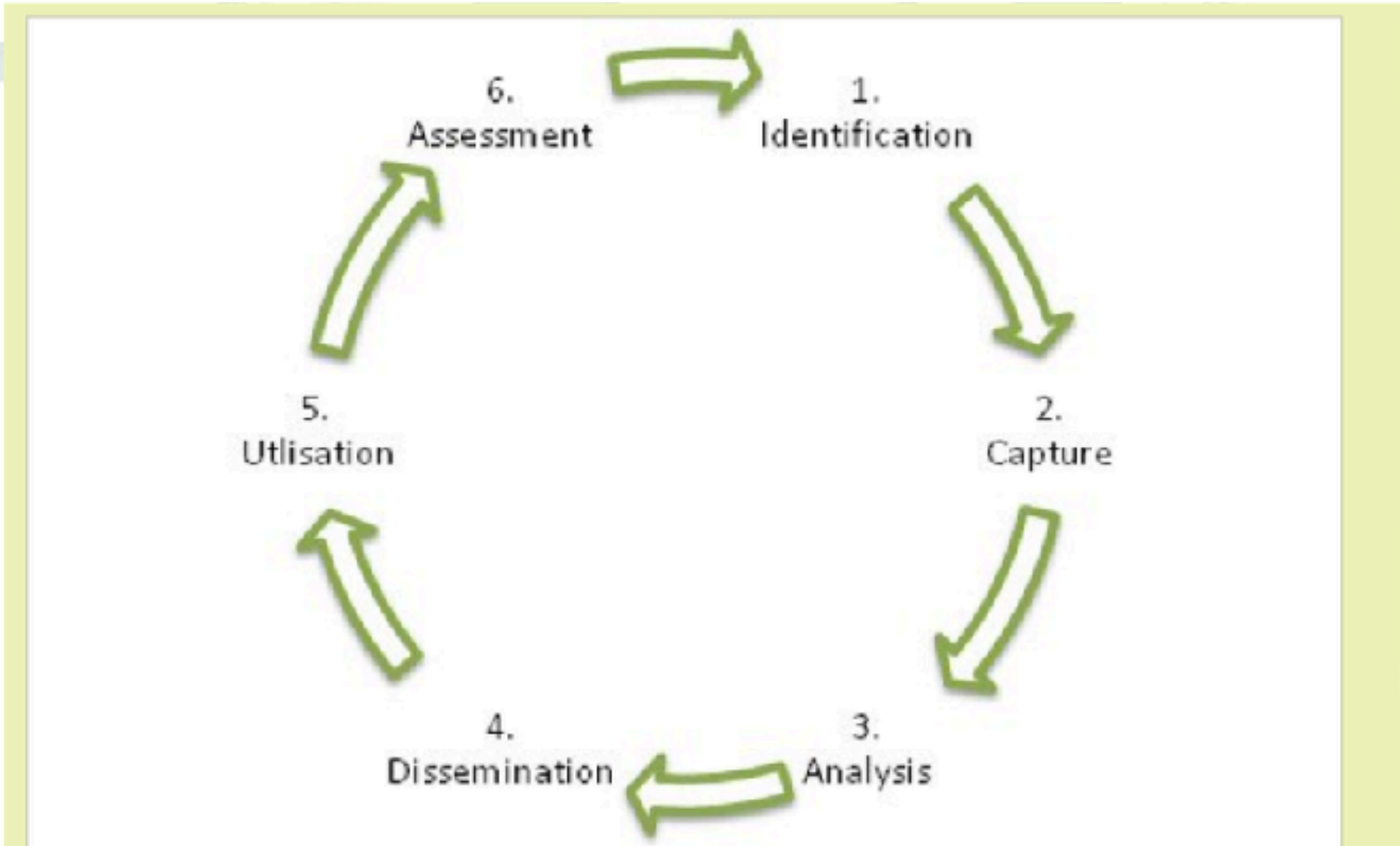
Defining our Objectives:

- Outcomes
    - Well-established by GLOBE
    - 22 years of measurements
- Impacts we want to document
    - Attitudes of students, teachers, community members
    - Skills of students and teachers
    - Interests of students
    - Science career choices
    - Awareness of the environment

Are the objectives SMART?

- Specific
- Measurable
- Achievable
- Relevant
- Time bound

We need a plan!



Source: Willetts & Crawford (2007)

What can we achieve for GLOBE in the long run?

- A cycle of continual improvement for GLOBE that includes the processes of design, preparation, evaluation, and re-design.
- Results that are grounded in a real-world context that are specific to age, curriculum, and place, and encourage practical experiences out-of-doors for students.
- Creative learning experiences that are hands-on and learner-centered, that provide a cooperative context for learning and evaluation, based on the information acquired.
- An understanding of GLOBE's past, a sense of the present, and a positive vision for the future, developing more commitment in the community.

And ultimately evaluation can contribute to having:
A credible, reputable, and based on solid facts, environmental education Program.

What we are looking for:

- Existing student assessment and program evaluation tools that can be shared with other members of the GLOBE community.

- Existing data that partners have from their studies on Program effectiveness:

i) short-term results (student gains in learning, interests, motivation, or teacher outcomes).

ii) longitudinal studies (for example, related to improved graduation rates, entry to postsecondary education, career-related outcomes, etc.).

New Article Published: The Benefit of The GLOBE Program for the Development of Inquiry Competence in the Czech and Slovak Contexts

Oct 26, 2016

GLOBE in the Czech Republic: A Program Evaluation

Cincera, Jan; Maskova, Veronika

Environmental Education Research, v17 n4 p499-517, 2011.

The evaluation explores the implementation of the program in schools and its impact on research skills. Four hundred and sixty six pupils, aged 13, from 28 different schools participated in the evaluation.

Journal of Science Education and Technology

December 2015, Volume 24, Issue 6, pp 721–734 | Cite as

The Costa Rica GLOBE (Global Learning and Observations to Benefit the Environment) Project as a Learning Science Environment

Authors

Authors and affiliations

María Dolores Castro Rojas ✉, Ana Lourdes Acuña Zuñiga, Emmanuel Fonseca Ugalde

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O'Connor, K. (2016). A Pedagogy of Place: Promoting Relational Knowledge in Science Teacher Education. Teacher Learning and Professional Development TEPD, 1(1), 44-60.

O'Connor, K., & Sharp, R. (2016). Developing environmental responsibility through place-based education. International Academy, Research, and Industry Association IARIA, 40 (1), 20-27.

Spellman, K.V., Sparrow, E.B., Chase, M.J., Larson, A., Kealy K. "Connected climate change learning through citizen science: an assessment of priorities and needs of formal and informal educators and community members in Alaska." Connected Science Learning 1(6): 1-24, 2018. (link)

Where you can find our resources

GLOBE Community Annual Survey at: https://www.globe.gov/about/impact-and-metrics/globe-community-annual-survey

Teacher Survey, one pager for funders and New Haven Surveys at: https://www.globe.gov/about/impact-and-metrics/globe-teacher-survey

The GLE surveys will be used in Survey Monkey and be completed online.

How you can communicate with us

- Africa: Ylliass Lawani, ylliass@gmail.com
- Africa: Lawrence Kambiwoa (At large), lawrencekambiwoa@hotmail.com
- Asia and Pacific: Yogendra Chitrakar, yogendra@ecca.org.np
- Europe: Nektaria Adaktilou, nadak@phys.uoa.gr
  or nektaria.adaktilou@gmail.com
- Latin America and Caribbean: Andrea Ventoso
  andrea.ventoso@mvotma.gub.uy
- Near East and North Africa: Siham Salman, siham@afdc.org.lb
- North America: Kevin O'Connor, koconnor@mtroyal.ca

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Former members of the Group that have contributed in our work:

- Svetlana Darche, Rogeline Brettenny, Tuder Seranathna (contributed in the Teacher Survey and the Annual Survey for the Community).
- Tina Cartwright (contributed in the Teacher Survey, the Annual Survey for the Community, the one pager and the New Haven Survey).

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Evaluation Working Group

Thank you!

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