GLOBE Evaluation

- An evaluation process, using quantitative and qualitative techniques, has been designed. Implementation began in the Spring of 1996.
- The evaluation uses records of data submissions, and network interactions. Teachers, students, and scientists are being surveyed and observations and interviews conducted at selected sites.

GLOBE Evaluation

- Formative evaluation, to understand how to fine tune and enhance the program, and summative evaluation, to understand the impact, provide valuable information on the processes involved in GLOBE and provide the GLOBE staff with information needed in the planning and design of training activities, materials development and systems design.

GLOBE Evaluation 1997 Teacher Survey

- Sample of 279 U.S. teachers and 65 teachers outside U.S. whose students reported data on a regular basis September 1996-March 1997.
- Survey period from April-May 1997.
- Response rate of 78%.

GLOBE 1997 Student Survey and Assessment

- 4th, 7th, and 10th graders from 44 GLOBE classes and 27 classes of teachers signed up for GLOBE training.
- 777 GLOBE students and 676 non-GLOBE students (response rate of 84%).
- Survey items concerning GLOBE or other science class activities.
- Assessments of knowledge of how to take environmental measurements, general sampling and measurement principles, and ability to form inferences and interpret earth science data.

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Students' View of Their GLOBE Activities

- GLOBE will help people to better understand the Earth (83%).
- GLOBE measurements are important for scientists (78%).

Most Popular Program Activities

- 4th Graders
  - Entering data on the computer (76%).
  - Taking measurements (69%).
  - Examining satellite pictures (63%).
- 7th and 10th Graders
  - Looking at satellite pictures (60%).
  - Entering data on the computer (52%).

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Comparison of GLOBE Students and Non-GLOBE Students

Topic	GLOBE Students	Non-GLOBE Students
Knowledge of measurement procedures	53%	36%
Sampling and measurement principles	56%	51%
Interpreting data and applying concepts	48%	42%
Interest in pursuing a career in science	34%	25%

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Comparison Between GLOBE and Non-GLOBE Studentsin Performance of Science Class Activities

- GLOBE students spent more time on the following:
  - Using a computer.
  - Working in a group with other students.
  - Helping other students learn.
- Non-GLOBE students spent more time on the following:
  - Learning new words.
  - Answering questions from a book or worksheet.
  - Answering questions about what they had learned.

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Comparison of GLOBE and Non-GLOBE Teacher Instruction

- GLOBE teachers spent more time having the students:
  - Take measurements or observations.
  - Apply science concepts.
  - Analyze and interpret data.
- Non-GLOBE teachers spent more time:
  - Teaching vocabulary.
  - Having students complete worksheets.

GLOBE Teacher Perception of the Impact of GLOBE on Student Learning

- The biggest perceived impact of GLOBE on student learning is in the following areas:
  - Observational skills (69%).
  - Measurement skills (68%).
  - Technology skills (60%).
  - Understand data (50%).
  - Work in small groups (50%).
  - Critical thinking (36%).
  - Map skills (30%).

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Teacher Perception of the Biggest Challenges Implementing GLOBE

- Taking measurements during weekends and vacations (64%).
- Finding time for GLOBE given other curriculum and testing requirements (44%).
- Fitting activities into the school schedule (41%).
- Finding time to prepare for implementing GLOBE (37%).