Assessment: How Hard Can It Be?

Michelle L. Weibel
*University of Nevada, Las Vegas*

Daphne Sewing
*University of Nevada, Las Vegas*

Gregory Schraw
*University of Nevada, Las Vegas, gregory.schraw@unlv.edu*

Lori Olafson
*University of Nevada, Las Vegas, lori.olafson@unlv.edu*

Follow this and additional works at: [https://digitalscholarship.unlv.edu/pli_places_stories](https://digitalscholarship.unlv.edu/pli_places_stories)

Part of the [Educational Assessment, Evaluation, and Research Commons](https://digitalscholarship.unlv.edu/pli_places_stories), and the [Sustainability Commons](https://digitalscholarship.unlv.edu/pli_places_stories)

Repository Citation


Available at: [https://digitalscholarship.unlv.edu/pli_places_stories/6](https://digitalscholarship.unlv.edu/pli_places_stories/6)
Assessment: How Hard Can It Be?

Our Places Tell Stories Conference
March 4-6, 2008

Michelle Weibel
Daphne Sewing
UNLV Public Lands Institute
Dr. Gregory Schraw
Dr. Lori Olafson
Department of Educational Psychology
Session Objectives

- Demonstrate how assessment of a curriculum-based education program can work.
- Share results of the Forever Earth program assessment.
- Stimulate thought and discussion of how to implement assessment strategies for your program.
Overview:
Forever Earth Program
The Commercial!

- Use of Forever Earth vessel donated by Forever Resorts.
- Forever Earth program delivered by UNLV’s Public Lands Institute.
- On behalf of the National Park Service.
- Funding is provided through the Southern Nevada Public Land Management Act.
Four Principal Uses:

- Education
- Scientific studies and research
- Water quality monitoring
- Command post activities

Photo courtesy of Brett Seymour,
Submerged Resources Center,
National Park Service
Forever Earth Curriculum

- Created by a team of formal and informal educators.
- Tied to school district objectives and state standards.
- Topics and themes complement National Park Service goals.
Curriculum, cont.

- Hands-on, minds-on science.
- Age-appropriate.
- Boat and shore activities.
Pre- and post-trip activities available to teachers.

- Pre-trip classroom visit.

- Assessment tools developed and tied to learning objectives.
Assessment: What?

- Knowledge
- Attitudes
- Performance Skills
Assessment: How?

- Student Pre- and Post-trip Questionnaire.
- Teacher Pre- and Post-trip Questionnaire.
- Post-trip Teacher Interview.
Results 2006-2007

- 39 field trips on Forever Earth
- 18 schools
- 1263 students
Learning Objective:
Students will describe habitat requirements for quagga mussels to thrive in an aquatic environment.

Pre- and Post-trip Knowledge Question:
Can quagga mussels thrive in Lake Mead? List specific reasons why or why not.
Results - Student Knowledge

Before | After
--- | ---
4th | 5th | 6th | 7th
0 | 1 | 2 | 3 | 4 | 5 | 6

- Blue line: 4th
- Red line: 5th
- Green line: 6th
- Purple line: 7th
Results – Knowledge

- Statistically significant increases found in student knowledge for all four grade levels.
- No significant difference between high and low SES students.
Tools - Student Attitudes

Pre-assessment item
I would tell my friends to do this program on the Forever Earth Floating Classroom.

Post-assessment item
I will tell my friends to do this program on the Forever Earth Floating Classroom.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not Sure</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Results – Student Attitude

- Mean scores for different grades before and after an intervention:
  - 4th grade: Mean scores increase from 14 to 18.
  - 5th grade: Mean scores increase from 14.5 to 18.5.
  - 6th grade: Mean scores increase from 15 to 19.
  - 7th grade: Mean scores increase from 15.5 to 19.5.
Results – Student Attitudes

- Post-test attitudes were higher for all grade levels.
- Significantly different for Grades 4, 6, and 7.
Objective 1: Participant collects water sample and performs water quality measurements.

Objective 2: Participant uses a plankton net and identifies organisms using handout.

Demonstrates Skill | Does not Demonstrate Skill
Knowledge (9 items)
The content of the activity is aligned to the Curriculum Essentials Framework.

Pedagogy (8 items)
Important concepts are conveyed in several ways so that all students can understand them.

Attitude (8 items)
The activity will promote respect and caring for the environment.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not Sure</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Results – Teacher Survey

- N=43 teachers completed pre- and post-trip surveys.
- Post-trip scores higher than pre-trip scores.
- Findings indicated that teachers rated the curriculum as significantly more effective after the instructional event than before.
Examples of interview questions:

- What did you like best about the Forever Earth field trip?
- Did you use any of the information from Forever Earth in your classroom instruction?
- How could the Forever Earth field trip be improved?
Results – Teacher Interviews

- Well organized program and very helpful.
- Pre-visit to school helpful for students and teachers.
- Activities are curriculum-based.
- Spend more time on the boat.
- Transportation and funding assistance helpful and sometimes necessary.
- ALL would do another FE field trip.
Conclusions

1. Forever Earth activities had significant instructional benefit.
2. Student attitudes improved significantly after experiencing the activities.
3. Teachers thought the curriculum was effective.
Now What?

- Make the commitment!
- Choose a strategy that complements your program resources.
- Tie your assessment to your objectives.
- Use your results to make your program BETTER!
- Make your bosses pay attention!
THANK YOU!

www.discovermojave.org/forever_earth/