COSEE-WEST OCEAN OBSERVING INSTITUTE: USING ONLINE DATA IN THE CLASSROOM

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Goals

➢To develop an intensive five day workshop model that connects ocean Scientists and educators

➢To enhance the educators' knowledge and experiences in informal science centers throughout the region

➢To provide educators with current research and ocean observing data to use in the classroom

Figure 1. Ocean Institute scientist works with teacher on water chemistry.

Figure 2. Teachers wait to board ship and later explore touch tank.

The 5-day Institute Model

➢Since 2008, educators have convened for five days during the summer at UCLA, USC and three informal science center partners; NASA/Jet Propulsion Laboratory, Ocean Institute and Cabrillo Marine Aquarium

➢Throughout the day, hands-on activities engage educators in marine science concepts, ocean observing technology, how to collect data and use online data in the classroom

➢Each day a featured researcher presents their research using drifters, gliders, satellites or other ocean observing technology, followed by questions and answers

➢Ocean Literacy Principles are tied to lessons and activities

➢At the end of the Institute participants are required to turn in an original lesson plan and present one online data source that they will use in their classroom

Evaluation Outcome

➢In all 3 years, at least 90% of participants agreed or strongly agreed that they will use OOS material in their classrooms

➢Almost two-thirds of the teachers had previously participated in COSEE-West workshops (62%)

➢Participants reported that presenters demonstrating hands-on activities were knowledgeable (96%) and able to integrate practical application of content (94%)

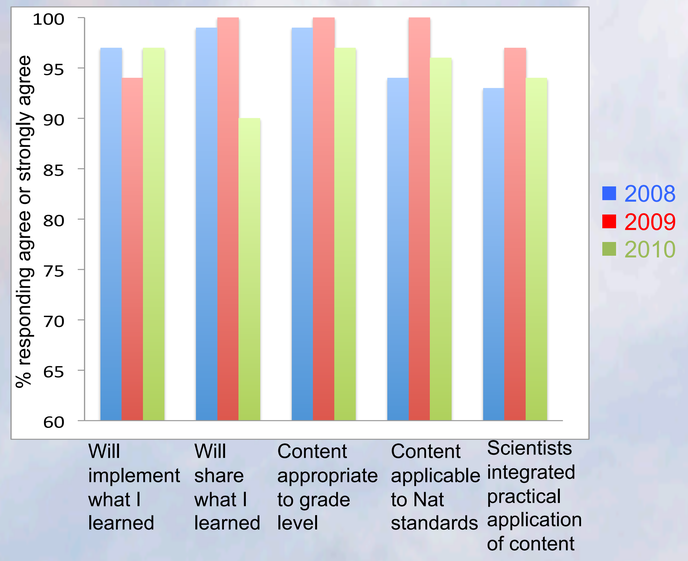

Figure 5. Participant responses taken from post- surveys for first three years of the institute.

Demographics

➢In the first two years of the institute, 66% of participants were High School teachers, 45% Middle School, 7% Elementary School and 3% informal educators

➢By the third year, only Middle School and High School teachers participated

➢In 2008 and 2009 16% of participants were from outside of Los Angeles, and in 2010that number grew to 25%

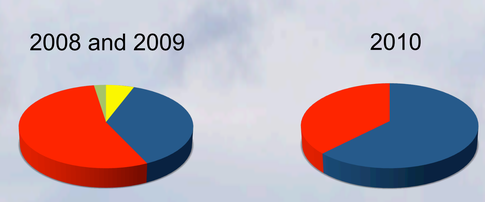

Figure 6. Educator composition by grade level (green=informal, yellow=elementary, blue=middle school, red=high school) 2008 and 2009 are averaged over two years.

Benefits

For Educators
➢In-depth training in a ocean observing systems, research and data and why this knowledge is relevant to students

➢Gain practice and confidence using on-line data in the classroom

➢Hands on experience with cutting edge research technology

➢A direct connection to local Scientists and informal science centers

For Scientists
➢Obtain better understanding of how to communicate their research

➢Learn about how K-12 teachers and informal educators present content to K-12 students (potential future college students)

For Informal Science Centers
➢Connections with teachers and schools from all over Los Angeles

➢Expansion of their institutional learning objectives

➢Deepening of partnerships with Universities and Scientists

Figure 3. Ocean Institute provides experiences for teachers to have a day out at sea and use a CTD sampler

Informal Science Center Partners

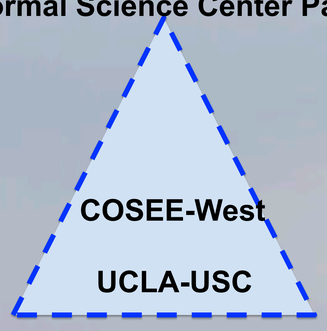

Figure 4. The connections from scientist to teacher to informal science center partners is what makes this institute different than other professional development workshops.

Each informal Science Center offers unique benefits:

NASA/JPL- Access to cutting edge satellite research science and JPL scientists

Cabrillo Marine Aquarium -A combination of aquaria, interpretive displays and museum collections and a leader in marine science education

Ocean Institute- along with a day at sea, teachers learn how to make their own ROV!

PARTICIPANT RESPONSES

Excellent presentation on SCCOOS--so many possible ideas! Using data in the computer lab was interesting and it was helpful. Many possibilities are possible with students

Thanks to all involved for a great job of organizing a very rich and complex workshop! It was very enjoyable and informative. I loved visiting all the locations new to me and meeting new teachers from far and wide. It was an invigorating way to end the summer and get motivated for a new school year

I really appreciate the team approach, this team worked well together and modeled what I need to do at my school. I very much appreciate the support and thoughtful organization that went into this workshop

Thanks for the connection to JPL, the staff was amazing, and I can really see ways to connect to my students and their curriculum needs

Figure 7. Teachers are given a tour of NASA/Jet Propulsion Laboratory including control room.

COSEE-WEST
COSEE-West is the southern California hub for the National Science Foundation supported COSEE (**C**enters for **O**cean **S**ciences **E**ducation **E**xcellence) effort. We link together university and research faculty from diverse institutions with formal and informal educators from the greater Los Angeles area to improve ocean science education. **www.usc.edu/org/cosee-west**