

**Ocean Literacy Online Workshop:
Analyses of Pre- and Post-workshop Surveys**

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Ocean Literacy Online Workshop: Analyses of Pre- and Post-workshop Survey Narrative

Participants in the National Geographic-implemented, Ocean Literacy Online Workshop in fall, 2004, completed both pre-workshop and post-workshop surveys designed to gauge perceptions of the accomplishments, strengths, weaknesses, and overarching reactions to the workshop. The survey responses were provided in raw form to an external evaluation team which has a significant background in monitoring discussions and programs associated with ocean science education to develop this data summary. The evaluation team also had access to the workshop and to the planning (greenroom) space used by the workshop leadership team. The pre-workshop survey was completed by approximately 67 participants—some fluctuation exists in the count due to voluntary completion of survey items. There were several distinct constituencies who participated in the online workshop and who completed pre- and post-workshop surveys: scientists, teachers—both from formal and informal education, policy makers, conservationists, and interested citizens. The range of interests and motivations among the participants resulted in multifaceted views and perspectives on ocean literacy and its educational and curricular implications. This fact created complexity and cognitive tension in the discussions as participants moved toward consensus—which seems to be a very healthy and positive feature of this workshop.

There was strong agreement among the participants with respect to an initial statement on the importance and relevance of ocean literacy (85% Strongly Agree and 15% Agree to the importance) (Figure 1). There were no negative perceptions vocalized.

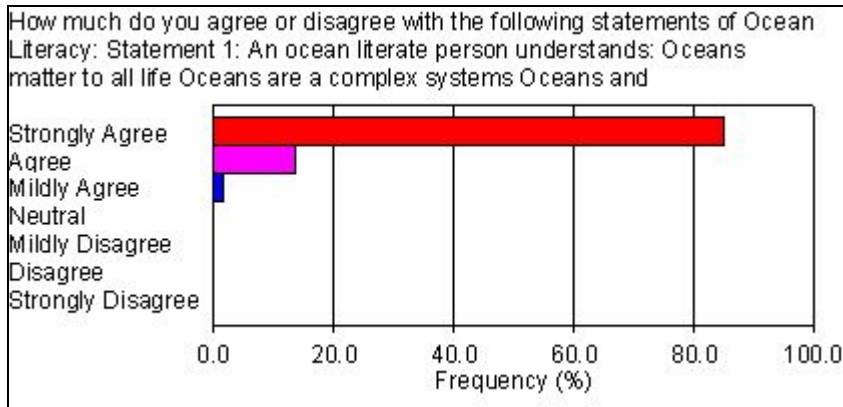


FIGURE 1

The respondents were invited to consider three statements concerned with ocean literacy and its characteristics. These statements were presented to capture strength of agreement or disagreement, as well as open-ended narrative commentary. A strong majority of participants suggested wording changes to the ocean literacy statements in the initial survey, and this engagement carried over into the workshop discussions themselves—producing at times and almost micro-specific level of analysis which seemed to challenge the program facilitator. Interestingly, the more specific the initial literacy statements became (observed in Figure 2), the more broadly the agree-toward-disagree continuum manifested in the reactions. This would suggest that there is broader

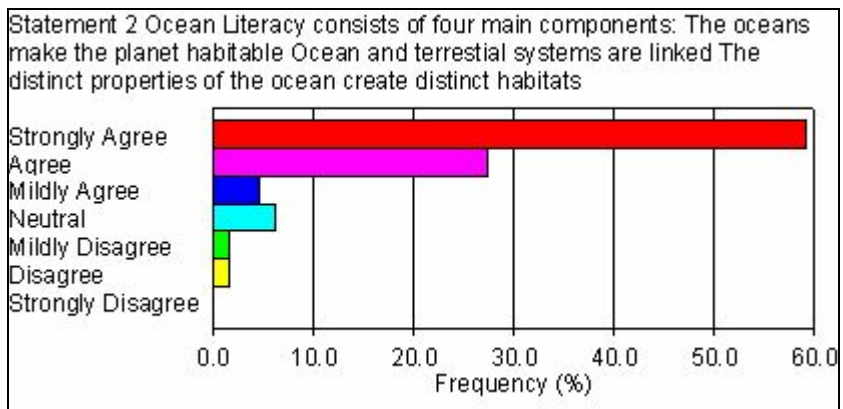


FIGURE 2

agreement at the conceptual level than at the content level for consideration of ocean literacy. This observation continues in the statement regarding ocean literacy and the individual (Figure 3). To the degree this is an accurate interpretation of these data, this observation would possess strong policy implication for future efforts of those engaged in the ocean literacy and ocean science education content/standards discussions.

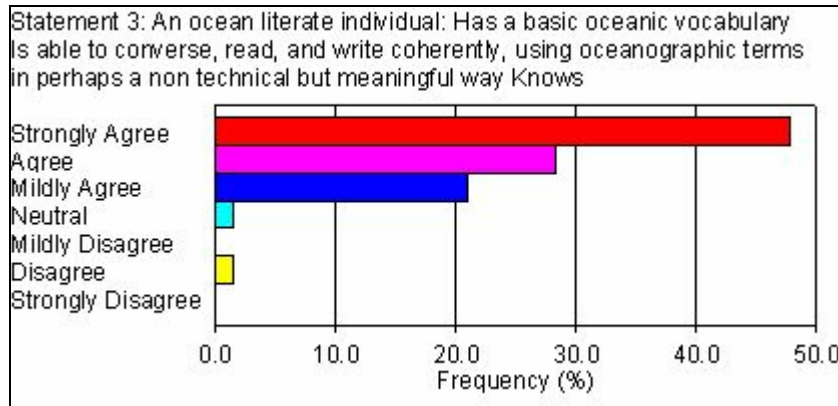


FIGURE 3

Finally, the respondent reactions to the curriculum and professional development questions (Figures 4 and 5 below) diverged in a noteworthy manner, which is further articulated in the narrative responses. There is a perception that adequate materials probably exist to prepare and support teachers’ classroom efforts, but a dearth of training opportunities are available to ensure teachers understand the science content to lead serious classroom inquiry in these areas. More problematic, a strong theme emerges from the narrative that while a plethora of materials exist—they are in practical terms not accessible to teachers for a variety of reasons. These reasons include lack of organization along themes, standards, and infused in core curricular areas to facilitate use. With respect to professional development, emergent themes from the narrative suggest that the visibility of existing workshops could be enhanced through better communications

structures, but that funding levels for professional development are generally too low to accommodate the large numbers of

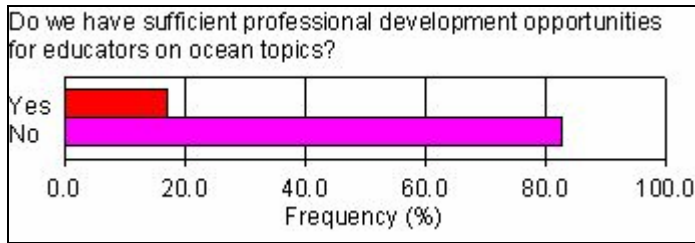


FIGURE 4

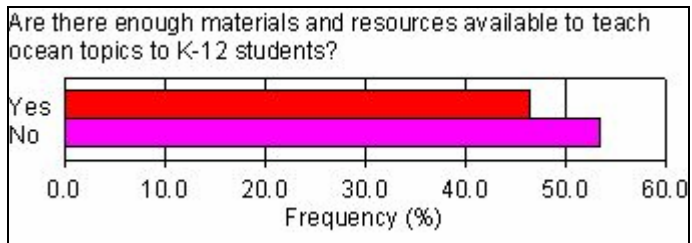


FIGURE 5

teachers. Nevertheless, the lack of curricular framework and standards support for ocean sciences content further serves as an impediment to teacher participation in ocean-centered workshops for many respondents. Finally, it seems clear that many teachers remain disconnected from the ocean science content that is presented through professional development due to lack of motivation, lack of effective communication to increase awareness of available training, or lack of geographically and socio-culturally distributed program offerings.

The workshop post-survey was completed by forty of the participants, or approximately two-thirds of the number who had completed the pre-workshop survey. This decline is expected and typical for similar workshop responses. The post-workshop survey respondents were nearly equally distributed among university faculty (one-third), classroom teachers/informal educators (one-third), and curriculum developers, scientists, and government agency personnel (one-third) (Figure 6). The approximately 31% of

respondents who indicated “Other” affiliation beyond the primary categories were subdivided into Other Educators (7.7% of total), Government employees or Scientists (12.9% of total), and Professional Development Organizers (5.1% of total).

Of this group sixty percent are members in the National Marine Educators Association, an entity which continues to emerge as strongly engaged in the various regional and national ocean science education and policy initiatives.

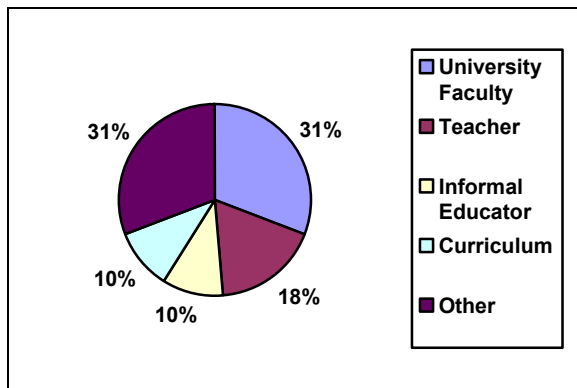


Figure 6. Primary work affiliation of respondents.

More than half of the respondents (55%) indicated they engaged with the workshop greater than 10 hours weekly, with 25% of the respondents indicating they engaged more than 15 hours weekly. This observation suggests a strong commitment to

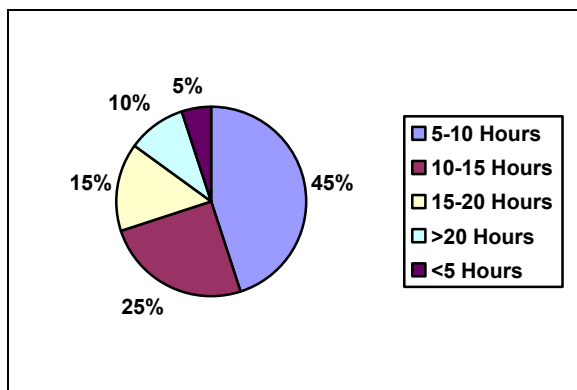


Figure 7. Time spent in workshop by respondents.

the success of the workshop and its overarching goals and objectives, as well as the topic area of interest, i.e. ocean sciences education. The overall perception of the respondents

to the degree to which the workshop met their goals and expectations is somewhat lower than what the evaluator has typically observed in similar workshops—although still quite high overall, with 70% indicating they Strongly Agreed or Agreed to the prompt. The slight shift down in response to this item seems linked to the open-ended conclusion of the workshop and lack of a concrete product “in hand” at the end of the two week period. It does not appear from workshop organizational materials that there was an intent to produce such a product—therefore the desire to have that should not be viewed as a negative with respect to the workshop success, but as a possible “next step” for the workshop leadership to consider now that the workshop is concluded.

The narrative responses to the survey were numerous and guided by a series of open-ended prompts to solicit overall perceptions of workshop quality, accomplishments, challenges, and structure. Six overall themes emerge from the narrative based on a heuristic comparative analysis process. These will be discussed as follows.

First, the workshop produced a large quantity of appropriate content through linked materials, discussion, and participant postings.

The quantity of materials and online postings and responses created a time pressure for participants to fully capture and engage with the discussions. However, this emerging sense of time limitation has been observed in other similar workshops and should be viewed as linked to the nature of the internet—where there will always be a capability of providing more content than is manageable regardless of the workshop facilitation and timetable. This does, however, lead logically to the second emergent theme.

The second theme from the response narrative is a desire, either in a past tense observation of the workshop or a future desired action step, to have the content of the workshop reduced to written summary or product different from the weekly summaries which were provided to the participants. This theme was expressed with respect to the workshop structure as a desire that the workshop facilitator had more frequently provided “in stream” summaries of the postings and commentary as it emerged, as somewhat of a “morning briefing” to the participants. While this would have leveraged the available time the participants had to engage—it is unlikely such a step could have overcome the natural threats to validity produced through such a system, i.e. the participants would not be reacting to each others comments, but to the facilitator’s summary of the comments. This summary would be subject to interpretive bias and would ultimately interfere with the social connectivity of the participants.

A third theme which emerges from the respondent narrative is a desire for continuation of the discussions which began in the online workshop. Whether these continued meetings are preferable online or “face to face” seems secondary to having the conversation continue—although some participants who regularly attend various science conferences offered suggestions that strands be implemented at those conferences. There is a sense that more respondents would be capable of continuing in online format than through face to face meetings based on time constraints and funding.

A fourth theme that emerges is the strong desire to have a tangible product that links the online discussions of a definition of ocean literacy and its relevance to the National Science Education Standards, to a set of concept clusters that would be overarching the entire K-12 continuum, and a set of grade specific content statements

which are linked to these broader conceptual renderings, i.e. what does ocean science literacy “look like” at each grade level, with example lessons and prerequisite content understandings for teachers. Such a document could further provide guidance to the professional development needs further explicated in the respondent narrative. This fourth theme is embedded with the fifth theme which also emerges in the narrative—that as positive as the dialog from this workshop and the perceptions of workshop accomplishments were, there is much work remaining to close the gap between the current formulation of ocean sciences education and the level at which other science disciplines are represented in the broader curriculum. This theme seems linked to the necessity of continued work in smaller, grade specific groups of participants who could make progress toward the richer structure detailed above.

The sixth theme which emerges, though with far less narrative, is the size of the workshop seemed large with respect to the perception of involvement of the respondents. The large number of comments and postings, within large group rooms, with limited opportunity for smaller group discussions, was viewed as sometimes counter-productive. An expressed desire for continuation of the discussion, but in grade specific small-groups, is seen as a possible mechanism to continue movement toward the concrete product desired by many and described above.

The final theme which emerges, and with strong and frequent narrative, is the perception that the workshop was an overwhelmingly positive experience, that it accomplished its primary objectives notwithstanding any of the perceived weaknesses which may have been verbalized by respondents. This sense of accomplishment is paralleled with a stated desire to continue the relationships established through this

workshop through follow-on workshops, or other meetings wherein the discussion could continue.

In general, the evaluators conclude, given *participant-perceived* quantity and quality of workshop content, the workshop produced a focused definition for ocean literacy—and *in the view of the participants*, laid the foundation for continued dialog and discussion moving toward a stronger curricular framework in the ocean sciences built around this shared definition of ocean literacy.