

Abstracts of Research in Marine & Aquatic Education 1990-2010 Update

Compiled by Rosanne W. Fortnerⁱ for NOAA's Office of Education

Marine and Aquatic Education (M/AE) Research has come a long way since the [first set of abstracts](#) was published through Ohio Sea Grant in 1991.ⁱⁱ At that time it was a struggle to identify just over 50 pieces of research that were available to serve as the basis of new inquiry. This update includes nearly [200 new items of research](#), and the sponsors are heartened by the range and quality of the investigations.

As in the first edition, we envision the scope of M/AE by its historic definition, “that part of the total educational process which enables people to develop a sensitivity to and a general understanding of the role of the seas and fresh water in human affairs and the impact of society on the marine and aquatic environments” (Goodwin & Schaad, 1977).ⁱⁱⁱ That definition must now be followed by a primary goal of M/AE, which is [Ocean Literacy](#).^{iv} An ocean literate person is one who

- understands the Essential Principles and Fundamental Concepts about the functioning of the ocean;
- can communicate about the ocean in a meaningful way; and
- is able to make informed and responsible decisions regarding the ocean and its resources.

For those who are educating about *fresh* water, the goals are no less lofty, beginning with understanding of the watershed and the importance of fresh water to life on Earth. While there is no one set of principles and concepts that deal with fresh water, there is guidance in COSEE's [Great Lakes Literacy Principles](#), the [Environmental Literacy Council](#), and NEETF's [Environmental Literacy](#) principles.

What do the research abstracts say about changes in the field?

Regardless of the specific water interest expressed in the Abstracts compiled here, it is obvious that studies of M/AE derive from and inform many disciplines besides ocean studies. The original set of Abstracts had references from only 9 journals. In this new volume, there are research abstracts from [40 journals](#) representing not only science disciplines and education but also social sciences, technology, young investigators, and management.

Likewise, the pool of researchers has expanded since 1990, when 47 authors, including one organization (UNESCO) were writing about research in M/AE. The 2010 collection is the work of [345 authors](#), including 23 organizations. By 1990 there were 6 individuals contributing multiple research works, and in 2010 there were 47 multi-contributors.

M/AE topics were the subject of 18 theses and/or dissertations by 1990, but that number increased to 51 between 1990 and 2010. We sincerely hope that these researchers will publish their findings and become regular contributors to the field.

What kinds of studies are included?

The literature selected for this volume is limited to M/AE research concerning

- preK-16 classroom education or students,
- classroom teachers, both in-service and pre-service,
- informal education, audiences and educators,
- adults and the “general public,”
- science education principles applied in a marine/aquatic context,
- data summaries and meta-analyses with their implications for the field, and
- program descriptions with evaluation data relevant beyond the program.

For numerous reasons, primarily related to preparation time and access to resources, but also to broad applications and relevance for ocean literacy, we chose not to include:

- Program descriptions with data relevant only to the program,
- Curriculum descriptions/development with evaluation data relevant only to the program,
- Recreation-based research, unless relevant to target topics,
- Concept papers based outside of a research context [“think pieces”],
- Subject matter of rivers/streams unless associated with coastal watershed,
- Maritime trades education, and
- Military education [of marines].

Our plan was to confine the search for entries to the publication years 1990-2009, adding 20 years to the existing abstract set. In reality, some works from earlier years and from 2010 surfaced and could not be ignored, so they are also included. It is very likely that some worthy entries were not found at all, and the editor hopes that a mechanism for updating can be found so that the set retains its value to new scholars in the field by growing as the body of research expands.

What information is included?

The full database was developed with EndNote X1 (www.endnote.com), an application used by many scholars in the social sciences. It includes typical information used in literature citations: author, date, title, journal or book, volume, issue, pages. In addition, EndNote classifies entries by publication type, such as whether an abstract is from a book, journal article, thesis, proceedings, or report, all with additional information characteristic of that kind of publication.

The editor of this work supplied keywords for each entry. The [keyword list](#) grew as abstracts were added. The list is not exhaustive but includes variables explored, location [if relevant to the research], target audience/sample, and how research was done [survey, Q, interview, etc.].

Abstracts do not follow a standardized format as in the previous volume. They were written by authors of the original work, where available, and have generally been reported here unmodified. Initials following an abstract indicate another abstractor besides the original author, perhaps an ERIC associate or the editor of this collection [RF].

Where can the literature be accessed?

In most cases we limited entries to journals, e-journals, reports accessible via the Internet, and published proceedings. The complete reference in the html and print version of the abstracts should provide enough information to access the full report. A few documents were included that are clearly relevant but did not have complete information. Some journals do not publish abstracts; others provide digital access only for a limited number of volumes [not back to 1990]. We'll continue to search for those, but invite you to send information if you find it first!

The theses and dissertations were accessed through the ProQuest database, which requires a subscription that most universities will have. Other dissertation abstract databases should also include these works.

How do I search the database?

In all versions the abstracts are alphabetical by the primary author's last name. The EndNote file can be [downloaded](#) for full search capability if you have the software. This is the recommended search method. It does not constitute an endorsement of EndNote over other software, just an acknowledgement of the level of use of that program in academic settings. An [html version of the file](#) was exported for web use, and a [pdf file](#) is also available [prints to 98 pages]. If these versions are being searched, use your computer's "FIND" function to search by publication type, keyword, journal, or author.

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--Rosanne W. Fortner, 2010

ⁱ *About the Editor:* Rosanne W. Fortner is one of the most cited authors of marine and Great Lakes education research, and she coordinated the first version of the *Abstracts*. She is the Director of COSEE Great Lakes and Professor Emerita from the School of Environment and Natural Resources at The Ohio State University. Fortner.2@osu.edu

ⁱⁱ Fortner, R.W. & N.J. Smith-Sebasto (1991). *Abstracts of Research in Marine and Aquatic Education 1975-1990*. OHSU-EP-077. Ohio Sea Grant, The Ohio State University.

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^{iv} <http://oceanliteracy.wp.coexploration.org/>

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Puerto Rico
Q methodology
qualitative
quasi-experimental
Quebec
questionnaire
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reasoning
recreation
regional
relevance
research review
residents
resource management
resources
retention
review of research
scenic resources
school
science and technology
science discourse
science education
science learning
science literacy
scientist engagement
scientists
scope and sequence
scuba divers
Sea Grant
sea turtles
secondary
simulation
social psychology
Solomon Four Group
stakeholders
standards
states
statistics
STEM pipeline

stewardship
students
survey
sustainability,
systems
systems approach
teachers
teaching methods
teaching strategies
technology
television
theory
Theory of Planned Behavior
Theory of Reasoned Action
tourism
tracking
traditional ecological knowledge
trainers
unconscious learning
undergraduate
understanding
values
vessel-based
virtual reality
visitors
volunteers
water
water cycle
water quality
watershed
whale watch
wildlife tours
willingness to act
willingness to pay
workshops
zoological institutions