



## TEACHING AND LEARNING IN THE MARITIME ENVIRONMENT



## A LIST OF CONFERENCE PRESENTATIONS

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### ***“Developing Spatial Literacy in Coast Guard Officers”***

*Michael Alfultis, United States Coast Guard Academy.*

Spatial literacy and proficiency have become increasingly important skills for USCG officers, as these personnel need technical expertise in these systems in order to effectively accomplish their missions. To meet this need for spatially literate officers, the US Coast Guard Academy developed curricula that examine the development of spatial literacy in a systematic fashion.

### ***“Computer Integrated Course Design for 21<sup>st</sup> Century Marine Engineers”***

*John Bausch, Massachusetts Maritime Academy.*

Courses in the Engineering department at the Massachusetts Maritime Academy must cover older systems still in use as well as new materials found in Electronics, Instrumentation, and Control. Traditional engineering courses have been redesigned to improve hands-on experience in formal labs and case studies relevant to marine engineering.

### ***“Explaining Ships Dynamic and Handling using MATLAB and SIMULINK as Simulation Tools in Teaching Maritime Students”***

*Knud Benedict and Matthias Kirchhoff, Wismar University of Technology, Business and Design.*

MATLAB and SIMULINK can be used to familiarize students with various aspects of ship maneuverability. An understanding of basic mechanical problems is vital to maritime students, as these tools are among the most effective pedagogical devices available to maritime educators.

### ***“Student-Centered Practices in a General Education Oceanography Course”***

*Kenneth Boda and Michael Alfultis, U.S. Coast Guard Academy.*

Student-centered learning practices in oceanography courses at the United States Coast Guard Academy facilitate hands-on, inquiry-based activities that serve as the primary method of evaluation. This allows instructors to introduce cutting-edge technology and the latest pedagogical constructs while maintaining the currency and relevancy of the course.

***“Integrating Problem Based Learning into the Classroom via a Real-Time Ship Engineering Problem”***

*John Bridge and Stephen Collins, Maine Maritime Academy.*

A design project that was developed on Summer cruise and then replicated in several academic courses allowed for the development of an Engineering design “mini-capstone” project that facilitated student learning through activity-based, real-time problem solving.

***“Use of Maritime Examples in the Teaching of Mathematics and Physics”***

*Steven D. Browne and Samuel R. Pecota, The California Maritime Academy, CSU.*

Studies have shown that learning, understanding and retention of mathematics and physics concepts are increased when students understand the context and application of the subjects. The purpose of this paper is to provide examples of maritime applications to be used in the teaching of mathematics and physics courses at maritime academies.

***“Learning Styles: Are There Differences Between Academic Majors?”***

*James Buckley, The California Maritime Academy, CSU.*

Differences in the learning styles between students in different academic majors can be gauged using a variety of assessment tools. Such differences exist among maritime academy students, and one’s selection of major is largely a reflection of their learning style.

***“Developing Information Literacy for the Maritime Curriculum: Strategy and Pedagogy”***

*Constantia Constantinou and Shafeek Fazal, SUNY Maritime.*

Developing a comprehensive plan to integrate information literacy in the areas of maritime studies and scholarship involves moving in strategic directions. Pedagogical techniques employed for achieving positive student learning, collaborations with teaching faculty, and assessment tools used to measure outcomes in response to program review and accreditation requirements are all prerequisites.

***“Students Teaching Students: East Carolina’s Maritime Studies Association Outreach Program”***

*Michelle Damian, Adam Friedman, and Amy Leuchtmann, East Carolina University.*

The development and implementation of a community outreach project allows for cross-generational experiences. Utilizing hands-on activities that allow children to engage maritime archaeology, graduate students are able to assess outcomes and impact developed in conjunction with grade school teachers.

***“Information Fluency in Maritime Education”***

*Melinda Drake and Carl Phillips, The California Maritime Academy, CSU.*

The California Maritime Academy’s benchmark Information Fluency Program— and the role of the Library in developing effective programs of curriculum-integrated instruction— serves the needs of students in a broad range of maritime disciplines. Focus is given to the importance of assessment and the Library’s use of the innovative Information and Communication Technology (ICT) Literacy Assessment tool as a means of identifying and addressing the evolving needs of students.

***“The ABCs of Building Practical Training Programs Utilizing Assessment Methodology”***

*Peter Hayes and Bill Schmid, The California Maritime Academy, CSU.*

Changes in the deck training program at Cal Maritime reflect changing industry standards and new pedagogies that promote student engagement and a learner-driven educational experience. Program revision that achieves its goals through student-outcome driven foci, objective and accurate assessment, and resource acquisition that supports future growth is a model to be followed.

***“The Contribution of Self Directed Strategies to the development of Adult Metacognition at Higher Maritime Education and Training”***

*Mustafa Kalkan and A. Guldem Cerit, Dokuz Eylul University.*

Self-directed experiential learning should be the primary focus of teaching and learning in the maritime environment. Problem-based discussion sessions provide a promising avenue for engaging students at maritime colleges, as well as for developing such metacognitive processes as higher-order thinking and life-long learning.”

***“How Problem-Based Discussion Sessions are Used to Promote Cognitive, Affective and Psychomotor Domains: A Case Study at a Maritime Higher Education and Training Institution”***

*Mustafa Kalkan, A. Guldem Cerit, and Yusuf Zorba, Dokuz Eylul University.*

Clear goals and objectives are important when developing curricula for maritime education. These goals, objectives and curricula are portals through which skills such as reasoning, critical thinking, problem solving, information processing, and independent learning are developed.

***“Writing for the Cyber Ocean: Evaluating the Impact of Student Participation in Digital Publications”***

*T. Kurt Knoerl, Museum of Underwater Archaeology.*

The development of an online journal that accompanied a field school in underwater archaeology allowed for the dissemination of information in a timely fashion, one that changed the students’ approaches to their work and the exercise as a whole.

***“H-Maritime and the Asynchronous Learning Community: A 21<sup>st</sup> Century Thinktank”***

*Timothy Lynch, The California Maritime Academy, CSU.*

New technologies offer challenges and opportunities to traditional academics. By bringing scholars together while improving pedagogy and student involvement, listservs can be used to facilitate teaching and learning in the maritime environment.

***“Sidelines to Center Stage: Transforming Teaching and Learning in a Maritime College Humanities Department”***

*Karen Markoe, SUNY Maritime.*

The Humanities Department at SUNY Maritime has moved from “exclusively a service department” to a “full partner in the education of students” through a series of strategies that were devised to bring the humanities to the very heart of the learning experience for every SUNY Maritime student.

***“The Structure of, and Hidden Advantages in Ship Operations” POSTER***

*Peter McGroarty, The California Maritime Academy, CSU.*

The experiential learning component of maritime education is taught through a sequence of courses managed by the Maritime Operations department. These classes allow students to combine and use other sources of knowledge in a practical setting, which ensures the understanding and retention of that knowledge.

***“Faculty Learning Community in Maritime Teaching”***

*Joan Mileski and William McMullen, Texas A&M University at Galveston.*

An intradepartmental faculty forum allows colleagues from different disciplines to discuss issues that are unique to teaching and learning in the maritime environment. This paper provides an evaluation of the accomplishments and shortcomings of the approach, with a focus on improving what many see as a powerful tool for improving collegiality, pedagogy, and curricular revision and assessment.

***“Training on Tanker Operations as a Task Based Learning Application”***

*Selcuk Nas and Yusuf Zorba, Dokuz Eylul University.*

Task-based learning is a major component of active learning at the Dokuz Eylul University School of Maritime Business and Management. This study focuses on how the applications and practices of task-based learning are performed, and how this impacts student learning.

***“Computer Models for Solving Operational Problems in the Maritime Industry”***

*Krishan Rana and JoAnne Strickland, California Maritime Academy, CSU.*

Algorithms and mathematical models can be used to identify problems within the maritime business environment. Additionally, maritime operations can be made more efficient and cost effective through the use of scientific management techniques and computer models.

***“An Innovative MET Approach in Turkey: Joint Dual Diploma and Dual License Undergraduate Program”***

*O.K. Sag, Istanbul Technical University, A.R. Buyukuslu, European University of Lefke and D. Yarsuvat, Galatasaray University.*

A unique curriculum that merges the traditional deck and engine degrees into a new composite promises to address the current shortage of qualified seafarers in Turkey and the rest of the world. This unique program will serve as a testing ground for the concept of a joint undergraduate degree/license that would supersede the current models.

***“A Statistical Approach to Outcomes Assessment”***

*Michael Schaab, Maine Maritime Academy.*

The use of statistics as an assessment tool can improve teaching and learning in the maritime environment. The process involves building and analyzing student data sets, and then using this information to guide procedural changes to make pedagogy more effective.

***“Navigating the High-Tech Tools and Pedagogy of the 21st Century”***

*Armand and Cynthia Seguin, Emporia State University.*

High-tech pedagogical tools--from blogs and podcasts to wikis and RSS feeds-- allow maritime teachers to connect with their students in new and exciting ways. These tools allow individuals to make connections with content and issues in new and meaningful ways. As a result, teaching and learning become more interactive, collaborative, motivational and organic, as staid texts are replaced by innovative methodologies.

***“Teaching Maritime History: Interdisciplinary Approaches”***

*Jennifer Speelman, The Citadel: The Military College of South Carolina.*

An overview of trends in the teaching of maritime history, focusing especially on interdisciplinary approaches popular among many educators. Even with institutional limitations, historians who incorporate interdisciplinary elements give their students a more sophisticated understanding of man’s relationship with the sea.

***“The American Merchant Seaman’s Manual” POSTER***

*Mark Stackpole, The California Maritime Academy, CSU.*

The standard text is used to trace the development of maritime education over the past seven decades, establishing an outline of the changes in both scope and variety of skills demanded for both teaching and learning in the maritime environment.

***“Inquiry Based Learning in the Technical Maritime Environment”.***

*Brooke Stutzman and Paul Reid, U.S.Coast Guard Academy.*

An active learning environment enhances student understanding of, and facility with, material covered in Physics courses at the United States Coast Guard Academy. This paper will share some of the teaching methods used in recently revised Physics courses so as to incorporate an activity-based, interactive learning environment.

***“A Problem Based Learning Approach to Developing Naval Architects”***

*Giles Thomas, Norman Lawrence, and Paul Furness, Australian Maritime College.*

The senior design project at the Australian Maritime College requires students to develop teamwork and communication skills, as they interact with external clients and industry representatives. Additionally, the course enables students to integrate knowledge acquired in previous years, ensuring that they are equipped to enter the workforce as practicing and proficient naval architects.

***“Reconsidered Scholarship: A Utilitarian Paradigm for Maritime Education”***

*Don Zingale, The California Maritime Academy, CSU.*

Maritime education should be refined, with a focus on a seamless and interdependent relationship of learner centered activities. To facilitate this, maritime institutions need to support professional development, so that faculty can share effective teaching and learning strategies with each other. If done correctly, maritime education has the potential to stand as a model for other professional preparation programs.