Chapter 8

Island Ecology for Educators: The Intersection of Ecosystems Content, Coastal Environmental Education, and Technology

Amy R. Taylor

b https://orcid.org/0000-0002-4793-5175 University of North Carolina at Wilmington, USA

Dennis Kubasko University of North Carolina at Wilmington, USA

ABSTRACT

Island Ecology for Educators is an interdisciplinary course that is cross-listed between environmental studies and education students engaging both undergraduate and graduate students. This chapter aims to contribute to our understanding of environmental education practices by introducing the TTIP Teaching Model addressing (1) the importance of teaching about and in nature, (2) issues of teaching in the digital age, (3) benefits derived from interdisciplinary courses, and (4) building partnerships in your community. The TTIP model is the framework that the authors developed and adapted for creating an engaging platform for learning and teaching of environmental education and blends the aspects of teaching outdoors (T), technology inclusion (T), interdisciplinary courses (I), and partnering with experts (P). The discussion includes the outcomes of the course and recommendations for how to design similar environmental education courses using the TTIP Teaching model focusing on content application, pedagogical application, technology infusion, and partnership creation.

DOI: 10.4018/978-1-7998-2711-5.ch008

Copyright © 2021, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.

INTRODUCTION

"The edge of the sea is a strange and beautiful place." ~ Rachel Carson

The edge of the sea is indeed a special place. Can you imagine a coastal community that is so rich in diversity that a biological hotspot designation applies? Can you imagine a community where unique flora and fauna coexist and compete for limited resources across thirteen different ecosystems, all easily accessible in just a short hike? The answer is yes. This local edge of the sea exists and provides university preservice education and environmental studies students a glimpse into one possible way that an ecology education field course can begin to address the goals of sustainable environmental education. For the last nine summers, the authors have taught a course on a barrier island rich in history, culture, and biodiversity. Island Ecology for Educators is an interdisciplinary course that is cross-listed between environmental studies and education students engaging both undergraduate and graduate students. This chapter aims to contribute to our understanding of environmental education practices by introducing the TTIP Teaching Model addressing

- 1). the importance of teaching about and in nature,
- 2). issues of teaching in the digital age,
- 3). benefits derived from interdisciplinary courses and
- 4). building partnerships in your community for contextual learning.

The TTIP model (Figure 1) is the framework that the authors have developed and adapted over the last nine years while teaching this course. This model has proven to be beneficial in creating an engaging platform for learning and teaching of environmental education and blends the aspects of teaching outdoors (T), technology inclusion (T), interdisciplinary courses (I), and partnering with experts (P).

This chapter describes how the design of the unique setting for this university course engages and leverages future science educators to support students' learning of ecological concepts. The authors address the pedagogical context, learning objectives, assessment tools, and student produced web-based products for the course. The discussion includes the outcomes of the course and recommendations for how to design similar environmental education courses using the TTIP model focusing on content application, pedagogical application, technology infusion, and partnership creation. Research efforts examining key factors in environmental education uncovered a number of broad patterns that emerged from prior studies. A sample of those findings that played an integral role in the development of this ecology education field course are included.

23 more pages are available in the full version of this document, which may be purchased using the "Add to Cart"

button on the publisher's webpage: <u>www.igi-</u> global.com/chapter/island-ecology-for-educators/262027

Related Content

A Case Study of Primary School Students' Use of a Dynamic Statistics Software Package for Analyzing and Interpreting Data

Irene Kleanthousand Maria Meletiou-Mavrotheris (2015). Cases on Technology Integration in Mathematics Education (pp. 24-42).

www.irma-international.org/chapter/a-case-study-of-primary-school-students-use-of-a-dynamic-statistics-software-package-for-analyzing-and-interpreting-data/119135

cSELF (Computer Science Education from Life): Broadening Participation through Design Agency

Audrey Bennettand Ron Eglash (2015). STEM Education: Concepts, Methodologies, Tools, and Applications (pp. 677-691).

www.irma-international.org/chapter/cself-computer-science-education-from-life/121867

Engineering With Empathy in the Build a Better Book Project: Meaningful Making Supports STEM Participation

Stacey Forsyth, Jessica Sicklerand Gigi Yang (2023). *Developing and Sustaining STEM Programs Across the K-12 Education Landscape (pp. 1-22).* www.irma-international.org/chapter/engineering-with-empathy-in-the-build-a-better-book-project/329937

Using Authentic Earth Data in the K-12 Classroom

Meghan E. Marrero, Amanda M. Gunningand Karen Woodruff (2016). *Improving K-12 STEM Education Outcomes through Technological Integration (pp. 281-309).* www.irma-international.org/chapter/using-authentic-earth-data-in-the-k-12-classroom/141192

Local Lotto: Mathematics and Mobile Technology to Study the Lottery

Vivian Lim, Erica Deahl, Laurie Rubeland Sarah Williams (2015). *Cases on Technology Integration in Mathematics Education (pp. 43-67).* www.irma-international.org/chapter/local-lotto/119136