

Natural Resources and Environmental Issues

Volume 7 *University Education in Natural Resources*

Article 64

1998

Enhancing success and professional development of students in natural resources

Brian R. Murphy

Department of Fisheries and Wildlife Sciences, Virginia Tech, Blacksburg

David Wm. Smith

College of Forestry and Wildlife Resources, Virginia Tech, Blacksburg

William E. Ensign

Department of Fisheries and Wildlife Sciences, Virginia Tech, Blacksburg

Terry M. Wildman

Center for Excellence in Undergraduate Teaching, Virginia Tech, Blacksburg

Carol A. Bailey

University Writing Program, Virginia Tech, Blacksburg

See next page for additional authors

Follow this and additional works at: <https://digitalcommons.usu.edu/nrei>

Recommended Citation

Murphy, Brian R.; Smith, David Wm.; Ensign, William E.; Wildman, Terry M.; Bailey, Carol A.; and Pert, Edmund J. (1998) "Enhancing success and professional development of students in natural resources," *Natural Resources and Environmental Issues: Vol. 7* , Article 64.

Available at: <https://digitalcommons.usu.edu/nrei/vol7/iss1/64>

This Article is brought to you for free and open access by the Journals at DigitalCommons@USU. It has been accepted for inclusion in Natural Resources and Environmental Issues by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.



Enhancing success and professional development of students in natural resources

Authors

Brian R. Murphy, David Wm. Smith, William E. Ensign, Terry M. Wildman, Carol A. Bailey, and Edmund J. Pert

ENHANCING SUCCESS AND PROFESSIONAL DEVELOPMENT OF STUDENTS IN NATURAL RESOURCES

**Brian R. Murphy¹, David Wm. Smith², William E. Ensign³,
Terry M. Wildman⁴, Carol A. Bailey⁵, and Edmund J. Pert⁶**

¹Head, Department of Fisheries and Wildlife Sciences;

²Associate Dean, College of Forestry and Wildlife Resources;

³Research Associate, Fisheries and Wildlife Sciences;

⁴Director, Center for Excellence in Undergraduate Teaching;

⁵Director, University Writing Program

⁶Instructor, Fisheries and Wildlife Sciences

Virginia Tech, Blacksburg, Virginia 24061-0321

Graduates from natural resource education programs move into a rapidly changing professional field. Whereas previous emphasis was on specialized technical skills, today's graduates are entering a field that emphasizes a broadly constructed, holistic ecosystem approach. While employers still look for graduates with extensive technical backgrounds, today they also stress the need for graduates with excellent written and oral communications skills, strong critical thinking skills, and teamworking and leadership skills.

Traditional approaches to natural resources education, as in most fields, primarily stressed acquisition of technical knowledge. To produce graduates able to compete in the complex ecological/social/political/economic web of today's natural resource fields, educators need to adopt educational techniques that sharpen critical professional skills in conjunction with technical competence. Universities must move from providing instruction to producing learning, whereby students are encouraged to become active partners in their learning rather than passive receivers of knowledge. Active learning in their college years stimulates students to become effective life-long learners, which will be critical for their professional survival in our rapidly changing fields.

We designed a program to alter the way that faculty teach and students learn in our undergraduate natural resources curricula. Specifically, our objectives were; 1) to create an interdisciplinary educational environment in the College of Forestry and Wildlife Resources (CFWR) at Virginia Tech that fosters higher levels of cognitive development in students, 2) to provide CFWR first-year undergraduate students with the skills needed for success in both their academic and professional careers, and 3) to provide current and future faculty with the support needed to develop and enact alternative teaching techniques that stimulate active learning.

Our objectives were accomplished by drastically altering our approach to the introductory undergraduate natural resources course in CFWR. The new approach incorporated a broad array of teaching techniques to stimulate active learning and critical skills development among the students. The traditional lecture approach was replaced by inquiry-based modules centered on extensive reading, group discussions, formal and informal writing exercises, field exercises, and collaborative research projects. A select interdisciplinary team of faculty, graduate students, and outstanding undergraduate students worked together to create this active learning environment, aided by University teaching and writing specialists. Instructors met regularly for workshops on alternative teaching techniques and for collaborative study group discussions.

The freshmen students in this project reported an increased sense of integration into the College and their chosen field, and a better understanding of what skills they will need to be successful natural resource professionals. Writing and speaking skills dramatically improved, and students reported that these improvements helped them in other courses in the curricula. Students developed problem-solving and teamworking skills that allowed them to tackle broad-scale interdisciplinary questions. Overall student performance in this experimental course was significantly better than under other teaching approaches, despite an increase in the quantity and quality of work demanded of the students.

Contact: murphybr@vt.edu; phone 540/231-5573; Oral presentation; 2x2 slide projector needed