

Innovative Teaching in Fisheries Science

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SPECIAL SESSIONS

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ABSTRACT

Innovative teaching and new approaches to the university educational process have become increasingly important as natural resource graduates are expected to tackle complex environmental issues. We must seriously evaluate the fisheries curriculum and how it might be improved to meet educational objectives. Equally important, alternative approaches to the teaching process itself must be considered.

The general approach to solving natural resources problems has changed in scope and complexity. Formerly a single governmental resource agency was relatively autonomous in its decisions; now other governmental agencies and private groups have a voice. The impact of natural resource decisions is appreciated as never before by the general public. It is this kind of a complex decision-making world which fisheries science graduates will confront.

Natural resource education poses an important, yet difficult, challenge to the university community and resource managers. Few would argue that students must develop a basic understanding of natural resource systems, but are we achieving this? Certainly with all the changes in public attitudes on environment and ecology, the time is ripe for a critical evaluation of educational objectives, methods, tools, and attitudes.

Characteristic of all university curricula, a Bachelor of Science program is broken down into a series of rather discrete courses. We tend toward compartmentalization of a broad discipline into somewhat disconnected bodies of knowledge. Realistically, the question is probably not *if* another curriculum approach is better, but which *mix* of courses shall our students have? What type of graduate do employers (government or private) desire?

¹Introduction to a panel discussion presented before the annual meeting of the American Fisheries Society, Hot Springs, Arkansas, 10-13 September 1972.

Are we educating students to be professionals equipped to solve contemporary problems?

The demands on fisheries managers have certainly changed, especially in this period of environmental awareness. Courses in fisheries management should be critically reviewed regarding their relevance to contemporary problems. We must teach some routine fisheries techniques, procedures, and methods, but what other courses should be incorporated into the curriculum to better qualify students to attack broad-scale aquatic problems?

Fisheries problems are usually complex and interdisciplinary with the public integrally involved in the decision making process. These kinds of problems simply do not fit well into conventional lecture format. The lecture approach in university teaching, long scrutinized and much maligned, is still the subject of criticism. Problem solving and decision making with uncertainty are too important to be omitted from our educational programs. One possible solution available at the university is computer simulations used as integrative teaching tools.

The rate and efficiency at which information is transmitted to students is very important in university educational programs. Auto-tutorial programs are commonly used in certain fields. Are there other teaching tools that we might use to improve our educational efficiency in fisheries?

As fisheries scientists we should be specifically concerned with the questions: (1) Is our contemporary education program realis-

tically meeting the demands of society and our profession? (2) What subject matter and experiences should we stress in fisheries courses? (3) How can we attack the difficult, yet unavoidable, area of *problem solving* rather than memorization? and (4) How can we improve on the classical lecture approach at the university?