

Supradisciplinary Environmental Study

I. Introduction

A. We need to discuss some obvious methodological questions at the beginning of your MES program.

1. You are in a graduate program designed to combine and rise above disciplines, but your backgrounds are largely disciplinary. How should you approach this challenge?
2. MES strives for what I will call a "supradisciplinary" approach. But what does that mean, in practice?
3. We expect you to produce new and useful knowledge about environmental problems, through a supradisciplinary approach. But how is that done?

B. There are no clear answers to any of these questions but we need to begin grappling with them from the start.

1. In our first seminar, we already discussed what environmental studies is/should be and how to practice what Lélé and Norgaard loosely called "interdisciplinarity."
2. This lecture is another initial step.

C. Outline of lecture

1. Creation of knowledge
2. Conceptual pluralism
3. Supradisciplinarity
4. Practicing with hypothetical cases
5. Thinking about using all this information in MES

PART I: CREATION OF KNOWLEDGE

II. Discussion of where new knowledge comes from

A. Personal & group qualities that foster knowledge production

1. Things like...
 - a. Creativity
 - b. Careful observation
 - c. Curiosity
 - d. Ability to think analytically
 - e. Intuition and experience
 - f. Ability to cooperate and share
 - g. Etc.

2. In academia, we often loose sight of this broad view.

B. General processes that result in new knowledge (*discussion*)

1. Science, broadly writ
2. Anything else?

C. Review of what you've learned in the first week

1. Scientific methods vary much more than you probably ever imagined.
2. The nature of science is a matter of much debate.

III. Although there is not THE scientific method, there are common elements in the various scientific methods

A. All research entails systematic procedures for answering questions.

B. Topic identification

C. Finding previous work on the topic

D. Identifying a theoretical framework

E. Formulating a research question

F. Constructing the best path to the answers

1. Consistency between elements of research process
(especially theoretical foundation, data collection methods, and analytical methods)

2. Practicality

3. Utility

G. Examination of ethical considerations

1. Impacts on human subjects

2. Impacts on organisms, populations, species & environments in general

H. Data collection

1. The nature and uses of data
 - a. Primary
 - b. Secondary
2. Quantitative methods
3. Qualitative methods
4. Combining quantitative and qualitative methods
5. Note that mixed methods \neq supradisciplinary research

I. Data analysis

1. Statistical analysis
2. Qualitative analysis

J. Model building

K. Theory construction

L. Conveyance of results

1. Forms and techniques of written presentation
2. Forms and techniques of oral presentation

PART II: CONCEPTUAL PLURALISM

IV. General methodological choices

- A. Different, valid methods may be used to answer most questions.
- B. If you don't understand the full range of methods available to you, you may not use the most appropriate one(s).
- C. Examples of broad approaches
 - 1. Empirical approach in both natural and social science
 - a. Positivism
 - b. Experimentation
 - c. Prediction and formal modeling
 - 2. Interpretive knowledge (hermeneutics)
 - a. Idealism (study of things by studying human ideas about them and perceptions of them)
 - b. Phenomenology (study of things by studying human experience of them)
 - c. Postmodernism (various approaches all of which reject rational positivism)
 - 3. Critical knowledge
 - a. Neo-Marxist approaches

- b. Feminist approaches
 - c. Political ecology
- V. Scientific methods vary widely but they are all systematic, social processes combining observation, interpretation, and explanation.
 - A. All are grounded in careful observations.
 - B. All are systematic.
 - C. All are theoretical.
 - D. All are public.
 - E. All are self-reflective.
 - F. All are open-ended.
- VI. Conceptual pluralism
 - A. Basically means appropriately combining approaches to knowledge creation, rather than choosing only one.
 - B. Currently being developed. No dummy's guide available.

PART III: SUPRADISCIPLINARITY

- VII. Negotiating disciplinary boundaries also under construction.
 - A. Increasing levels of disciplinary integration are encouraged in environmental studies but this is contentious.

- B. Unidisciplinary programs predetermine the basic choices
 - 1. Philosophical foundation (epistemology)
 - 2. Research questions deemed important and answerable
 - 3. Research design (e.g., quantitative hypothesis testing)
- C. Supradisciplinary program requires difficult choices at all of these levels.

VIII. Will Focht's PowerPoint on disciplines in ES

PART IV: HYPOTHETICAL CASES

- IX. Designing hypothetical, transdisciplinary, ES research projects
(participatory exercise on chalk board)

PART V: USING THIS IN MES

- X. Using all this information in MES
 - A. Know what types of research are most likely to yield the kind of answers you are interested in and look specifically for them.
 - B. Then, engage in methodological critiques of each research document you use.

1. Identify researchers' assumptions and disciplinary perspectives.
2. Identify theoretical framework used.
3. Identify hypotheses used.
4. Identify research method employed and how appropriate it was; what was yielded and what might have been missed by this method?

XI. Useful web sites (see class web page)