

DEFINITIONS OF INTERDISCIPLINARITY

Collaboration between disciplines is possible in many forms, ranging from the relatively intimate self-regulated cooperation between two specialists who proceed in a friendly spirit to elaborately organized specialists supervised by complex administrative structures. All these efforts have their origin in a dissatisfaction with the compartmentalization of the disciplines and the productive expectations from a collaborative model.

The term interdisciplinary has been confusing and something of a misnomer.¹⁴ In the literature the term *interdisciplinarity* is used in both broad and narrow senses. In the broad sense *interdisciplinarity* literally means between disciplines suggesting the basic elements of at least two collaborators, at least two disciplines, and a commitment to work together in some fashion in some domain. In the narrow sense, *interdisciplinarity* describes a specific type of nondisciplinary effort that is distinguishable from other nondisciplinary approaches to research and education such as *crossdisciplinary* or *multidisciplinary*. To confuse matters further, *multidisciplinary* and *interdisciplinary* are often used interchangeably, usually in the broad sense.

In an early attempt to clarify interdisciplinary research, Gordon W. Blackwell¹⁵ characterized a continuum of types of research undertakings using the dimensions of number of people doing the research, kinds of actions involved in the research process, and the number of disciplines involved. On one end of the six-point continuum is the lone researcher working in one discipline and the last point is *multidisciplinary* team research where researchers from more than one discipline work collectively on a problem. Others¹⁶ have followed attempting to develop descriptive terminology or clarify meanings. Despite these discussions, notwithstanding their positive contributions, no consistent usage appears to be accepted by the scientific community.

The following uniform terminology is suggested for clarifying definitional concerns and underscoring the thrust of this article. As shown in Figure 1, at the base of the typology is *intradisciplinary*, within disciplinary work, followed by *crossdisciplinary*, a viewing of one discipline from the perspective of another. Examples of *crossdisciplinary* activity are a physics professor describing the physics of music or the art department offering a course in art history. *Multidisciplinary* is a level higher and involves several disciplines who each provide a different perspective on a problem or issue. A *multidisciplinary* example is faculty members from history, literature, and sociology who teach in a women's studies program or study women's position in society. Other examples include most general education courses and most social sciences conferences. In each of these cases the student or conference participant is required to integrate the often diverse ideas. Higher in the typology is *interdisciplinary* where integration of the contributions of several disciplines to a problem or issue is required. *Interdisciplinary* integration brings interdependent parts of knowledge into harmonious relationships through strategies such as relating part and whole or the particular and the general. A higher level of integrated study is *transdisciplinary*, concerned with the unity of intellectual frameworks beyond the disciplinary perspectives.¹⁷

The emphasis of this article is *interdisciplinary* in the narrow sense, although some of the issues and strategies for *interdisciplinarity* apply in a limited sense to other nondisciplinary activities. Although *interdisciplinary* is more productive than *multidisciplinary*, most activities in the social sciences are *multidisciplinary* rather than *inter-*

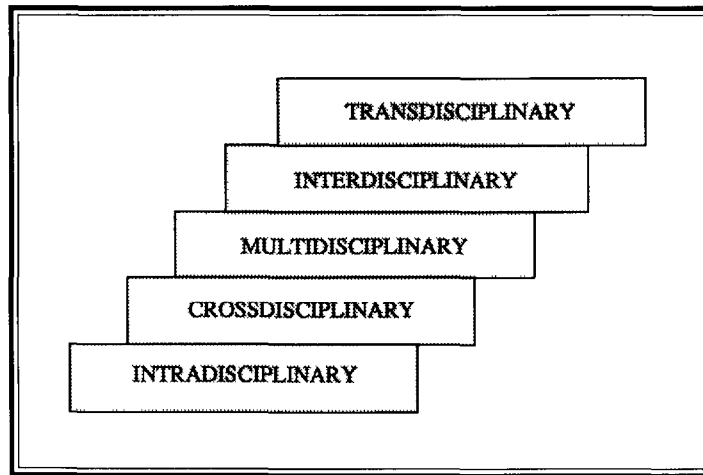


Figure 1. Typology for Enterprises Within and Across Disciplines

disciplinary A genuinely interdisciplinary enterprise is one that requires more or less integration and even modification of the disciplinary contributions while the inquiry or teaching is proceeding In interdisciplinary efforts, participants must have an eye toward the holistic complex of interrelationships and take into account the contributions of others in making their own contributions

Interdisciplinarity, then, is a complex endeavor that seeks to explicate relationships, processes, values, and context using the diversity and unity possible only through collaborative approaches To do so successfully, Stephen H Cutcliffe suggested that it:

means developing an understanding, both generally and in specific instances, about what values are, how people come to hold them, and how values evolve It means understanding the genesis and function of societal institutions in the political, economic, and cultural realms It means understanding in some general sense the internal essence and operation with major current concepts and methodologies, with design and modeling strategies in the disciplines being studied It also requires a holistic understanding of the complex interactions among these diverse components And as if this were not enough, it also implies the study of these complexities as reflected in art, literature, philosophy, and history as well as through contemporary political, economic, and sociological analyses ¹⁸

Interdisciplinarity holds great promise for understanding the holistic complex of interrelationships The challenge is to increase our capacity for truly interdisciplinary work

STRATEGIES FOR INTERDISCIPLINARY WORK

Interdisciplinary research and education are difficult endeavors imbued with both pleasures and problems While nothing may be more positive than imagining a dedi-