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ABSTRACT

Since graduate students in education are expected to direct educational inquiry at the termination of their doctorates, the program to prepare educational inquirers at Indiana University stresses critical understanding as well as mastery of techniques or methods. There are two essential aspects of the Indiana University Program in Educational Inquiry Methodology. First, basic methodology is not tied to select substantive fields within education. Second, there are substantive-methodological linkages throughout education. The program consists of both a general minor (inquiry methodology) and specialized minors. Specialized minors include development methodology, empirical research methodology, theoretical research methodology, evaluation methodology, and measurement methodology. (PB)

methodology is not tied to select substantive fields within Education, such as statistics and measurement to educational psychology and logic to philosophy of education. This frees methodology for application to all substantive fields within Education. So the second aspect of the program emerges, substantive-methodological linkages throughout Education. Given these linkages, in all substantive fields there would be experiences for graduate students in which they could be guided within their speciality in the usage of educational inquiry methodology. These two aspects of the program are reflected in its structure. It is an area program in which there is an integration and pooling of the talents and skills of faculty throughout Education whose concern is inquiry methodology. The Educational Inquiry Methodology Program is schoolwide.

Besides a general minor, the program consists of specialized minors. It is patent that one could specialize in either development or research methodology. A minor in development methodology, therefore, is part of the program. Research methodology, however, is not one minor but is sorted into two: theoretical and empirical. This sort reflects the traditional division of labor between theorizing and experimenting. Because the experiment is not the only approach available to the educational researcher, the minor is called 'empirical research methodology' not 'experimental research methodology'. Consider such naturalistic approaches as the case study and survey.

Besides the general minor and the three specialized minors--development methodology, theoretical research methodology, and empirical research

How should philosophy enter into a program to educate educational researchers? In this paper, I shall present an answer to this question and the outlines of Indiana University's program to educate educational inquirers which attempts to fashion itself accordingly.

To begin, educational inquiry is a doing of human beings; it is an investigation of education. Investigations of education can be effective or non-effective. One can succeed or not succeed in answering questions about what education is and about what to do educationally. The successful ways become a fund of intelligence for those who would inquire into education. This fund is called 'educational inquiry methodology', as it is our knowledge of methods of inquiring into education.

Presentation of this fund of intelligence could be done so as to prepare technicians or to prepare methodologists. One could prepare persons who either simply have mastery of technics or also critically understand them. Instead of 'methodologists', one could use 'technologists' to indicate those who also critically understand technics. But 'methodologist' has at least two merits: firstly, 'methodologist', because it differs more in sight and sound from 'technician' than does 'technologist', calls more attention to the marked difference in competencies; and, secondly, 'methodologist' unlike 'technologist' does not carry with it the special reference to industry and commerce.

Since graduate students in education at the termination of their doctorates are expected to direct educational inquiry, whether it be their own or that of others, such as that of doctoral students or of inquiry

staffs on projects, the program to prepare educational inquirers at Indiana University is not simply a technical one. Rather the program is one that stresses critical understanding as well as mastery of technics or methods. It is a program in educational inquiry methodology.

A program in educational inquiry methodology demands that one present not only method but also its logic. Obviously, the 'ology' in 'methodology' so indicates. To grasp how it is that the presentation of logic of method provides critical understanding of method, one must attend to the very broad not the very narrow sense of 'logic'. In its very narrow sense,'logic' is a branch of philosophy which describes the formal order or the syntactical dimension of language or thought. Recall your study of valid arguments or deductive inference. In its very broad sense, 'logic' is a branch of philosophy which describes order or structure. In this sense, logic treats of function, content, and form. Order is for a purpose, i.e. a structure can be distinguished by what it can do. This pragmatical dimension sets limits and, hence, determines what the elements of the structure are to be and how they are to be arranged. Thus, the semantical and syntactical dimensions of order emerge. Examples of this broad go at logic are commonplace in contemporary philosophy of science. Consider Nagel's THE STRUCTURE OF SCIENCE. In terms of method, its logic would make explicit what a method could effect--its pragmatics, what actions are significant for the method--its semantics, and how the actions are to be organized--its syntactics. Such explicitness would permit one to understand the function, content, and form of methods. Also this understanding would be critical, for function, content, and form

constitute criteria for order or structure. One would have normative knowledge for judgments about order or structure. One could judge actions, whether one's own or another's, in the light of their significance and organization relative to effectiveness. Stated simply, to understand method puts one in a position to judge whether one is engaging in it correctly.

Before being more specific as to this philosophical dimension, the logical dimension, of the educational inquiry methodology program, the sense of 'educational inquiry' needs to be noted. 'Educational inquiry' is used in the sense of a disciplined investigation of teaching and/or learning so as to produce either knowledge about education or educational programs or products. Consequently, one may distinguish research and development as two modes of educational inquiry.

With respect to both research and development, a general minor in educational inquiry methodology can be proposed which would consist of logic giving the basic structure to concepts and operations. In turn, these concepts and operations would be directed toward the design of experience to yield educational facts or generalizations or products or programs. Central in the operations are statistics, allowing the description and intepretation of experience, and measurement, the quantification. Basic methodology, however, must be applied within one's speciality, e.g. within art education. Methodology without substance is empty, and substance without methodology is blind. Figure 1 presents a schema of this general minor.

The general minor illustrates two essential aspects of the Indiana University Program in Educational Inquiry Methodology. Firstly, basic

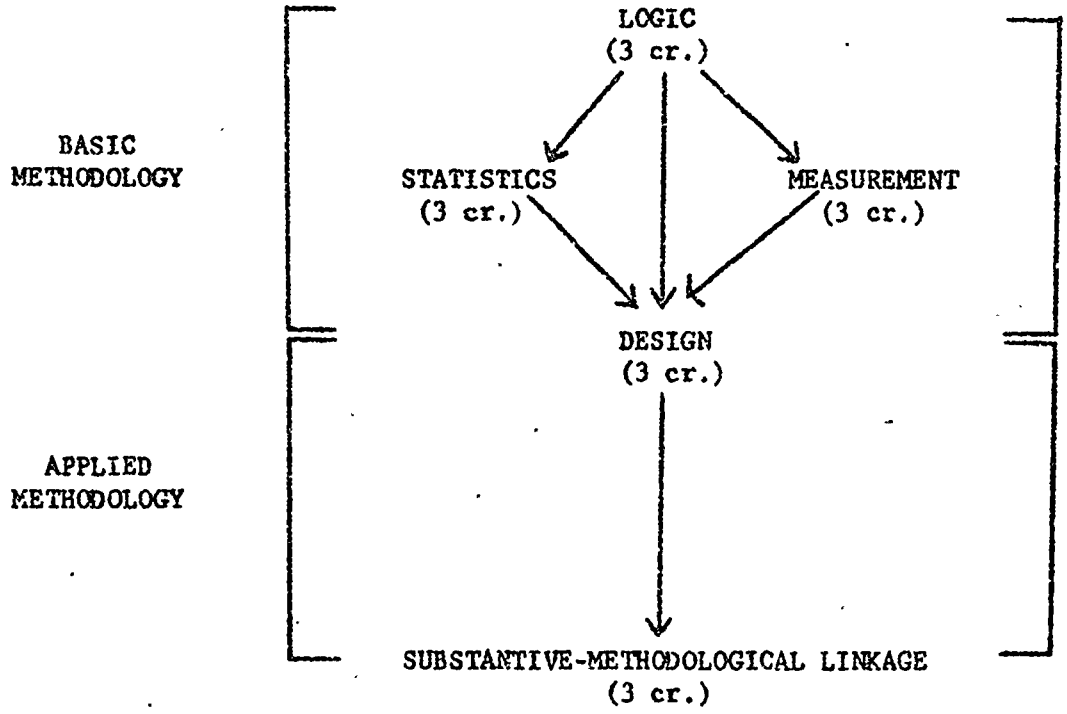

FIGURE 1: THE GENERAL DOCTORAL MINOR IN EDUCATIONAL INQUIRY METHODOLOGY

methodology is not tied to select substantive fields within Education, such as statistics and measurement to educational psychology and logic to philosophy of education. This frees methodology for application to all substantive fields within Education. So the second aspect of the program emerges, substantive-methodological linkages throughout Education. Given these linkages, in all substantive fields there would be experiences for graduate students in which they could be guided within their speciality in the usage of educational inquiry methodology. These two aspects of the program are reflected in its structure. It is an area program in which there is an integration and pooling of the talents and skills of faculty throughout Education whose concern is inquiry methodology. The Educational Inquiry Methodology Program is schoolwide.

Besides a general minor, the program consists of specialized minors. It is patent that one could specialize in either development or research methodology. A minor in development methodology, therefore, is part of the program. Research methodology, however, is not one minor but is sorted into two: theoretical and empirical. This sort reflects the traditional division of labor between theorizing and experimenting. Because the experiment is not the only approach available to the educational researcher, the minor is called 'empirical research methodology' not 'experimental research methodology'. Consider such naturalistic approaches as the case study and survey.

Besides the general minor and the three specialized minors--development methodology, theoretical research methodology, and empirical research

methodology, two other specializations have been distinguished. These two specializations are evaluation methodology and measurement methodology. Although evaluation has been sorted out from research and development, it is not a separate kind of inquiry but is a part and an essential part of both research and development. Whether one engages in producing knowledge or in producing programs or products, justification is involved. One must collect data or information in order to establish adequacy. The researcher through data or information must establish facts and generalizations as true. The developer through data or information must establish programs or products as effective and worthy of use. To so establish truth or goodness requires both formative and summative evaluation. Each step of the research and development process must be justified as must be the overall process. Measurement, too, is not a separate kind of inquiry but is a part and essential part of not only research and development but also of evaluation. Quantification is crucial to inquiry. It is patent, therefore, why evaluation methodology and measurement methodology should be singled out as specialization?

Figure 2 summarizes the genesis and thereby the interrelationships of the six doctoral minors:

1. INQUIRY METHODOLOGY
2. DEVELOPMENT METHODOLOGY
3. THEORETICAL RESEARCH METHODOLOGY
4. EMPIRICAL RESEARCH METHODOLOGY
5. EVALUATION METHODOLOGY
6. MEASUREMENT METHODOLOGY

1 is of course the general minor and 2 through 6 are the specialized minors.

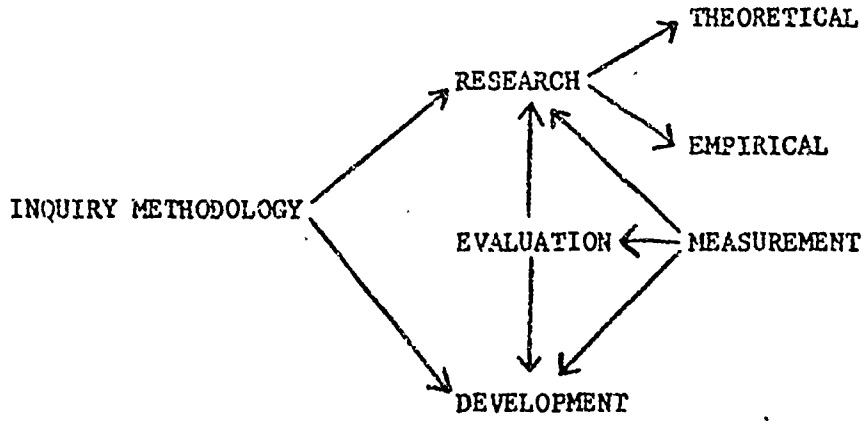

FIGURE 2: THE GENESIS OF THE SPECIALIZED MINORS

It should be noted that each of the specialized minors is structured so as to educate methodologists not technicians. As an instance, the logic of evaluation is emphasized in the evaluation methodology minor. A seminar taught by a philosopher of education who is an expert in axiology is included. Also the specialized minors are structured according to the already stated principle:

METHODOLOGY WITHOUT SUBSTANCE IS EMPTY and
SUBSTANCE WITHOUT METHODOLOGY IS BLIND.

The minors include substantive-methodological linkages. An example would be including a seminar in aesthetics and education as part of the program of an art education graduate doctoral student who is minoring in theoretical research methodology. In this seminar, the graduate student would be guided in the use of that methodology.

As it is patent that all doctoral students in Education should have both mastery and critical understanding of inquiry methods, the minors developed for this purpose are the heart of Indiana University's program for educational inquirers. A major is possible for the few whose interest causes them to inquire into inquiry.

Returning to the question with which this paper began, "How should philosophy enter into a program to educate educational researchers?" the answer presented above is

THROUGH LOGIC.

But a neglected dimension of philosophy does surface. What of the ethics of inquiry? What of the ethical questions relative to a researcher's use of subjects or a developer's program of behavioral modification? Philosophical intelligence must be brought to bear upon WALDEN TWO.