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ABSTRACT

Two papers are presented--a summary and a lengthier description of an interdisciplinary college-level liberal arts course. Both papers are intended for use by humanities and social science teachers as they develop and implement interdisciplinary and competency-based curricula. Five areas of academic competency serve as course objectives. These are that students should: (1) be acquainted with purposes, methods, and nature of evidence in humanities and social sciences; (2) have practice in critical thinking; (3) be able to use resources in humanities and social sciences; (4) be aware of the history, major findings, current state, and directions of inquiry in the two fields; and (5) be able to conduct independent inquiry and communicate effectively in oral, written, and visual forms. Course activities involve students in a social science research project, a humanities research project, and a mastery project which involves methods of inquiry from both the social sciences and the humanities. In the social science project, students are directed to answer a question about classroom learning using behavioral observation, survey, statistical analysis, and cultural analysis. In the humanities project, students are directed to use introspection, comparison, and logical analysis in a study of human imagination and creativity. For each project, information is presented on instructional strategies, evaluation methods, and possible research topics. (Author/DB)

Ideas and Research: A Course Introducing Inquiry in the Social Sciences and Humanities [And] Summary.

by

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and
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1977

IDEAS AND RESEARCH: A COURSE INTRODUCING INQUIRY IN THE SOCIAL SCIENCES AND HUMANITIES

Colleges must make clear which competencies they expect their students to acquire recent discussions in the academic community, as typified by the report of the Carnegie Commission on Higher Education (1977), indicates that educators are accepting this task. To fulfill this obligation, educators must first identify those competencies essential to undergraduate education, then design courses which enable students to acquire them. Such efforts will not only allow "general education" requirements to function effectively as a foundation for more advanced academic work, but will also allow colleges to construct efficacious developmental and remedial programs which deal directly with those competencies necessary to begin college work.

The competencies essential for more advanced undergraduate studies are not to be simply identified with the names of subjects--English, history, sociology, etc.--as they often have been in the construction of "general education" requirements. Rather each individual discipline is composed of a complex of elemental skills necessary for conducting inquiry. Thus these competencies are generic to all disciplines, and can be classified into three groups relating to the acquisition, production, and utilization of knowledge. Acquisition includes those skills necessary for formulating questions, for collecting and digesting existing knowledge. Production encompasses those methods which have been developed for creating new knowledge: forming hypotheses, constructing research designs, evaluating theories. Utilization refers to all those skills involved in the application of the results of research, from simply communicating findings to actually using them in solving problems.

Our response to this problem of introducing beginning undergraduates to the skills which make independent inquiry possible was to design an interdisciplinary freshman-level course, one which would allow students to participate actively in controlled research projects while practicing these essential skills. The competencies to be acquired served as the framework for the course's activities, and therefore were

clearly defined, thereby providing an adequate basis for assessment of student performance. This approach is in keeping with the general movement toward competency-based higher education throughout the country.

The design and implementation of competency-based curricula can be considered the major direction in contemporary efforts to revise undergraduate general education in the United States. Alverno College in Milwaukee, Wisconsin has a four year education in the social sciences, humanities, and natural sciences which develops eight generic competency areas of human thought and action in increasing levels of proficiency (Alverno College Faculty, 1976); Harvard University has recently created a plan of general education in the liberal arts centered on five areas of competency (Harvard University Faculty, Arts and Sciences, 1976). The idea that developing human competencies within undergraduate education is a focused mission has been discussed at length in a valuable monographic series published at Bowling Green University. Gary Woditsch's monograph, Developing Generic Skills: A Model for Competency-based General Education (1977), is an excellent theoretical study of the idea of generic academic skills; Thomas Ewens' Think Piece on Competency-based and Liberal Education (1977) is a provocative review of the competency approach to education in the history of western civilization as it relates to liberal education.

In our own restructuring of general education in the liberal arts, we have identified five areas of academic competency which we believe include most of the competency areas defined by Harvard and Alverno College, but more clearly focus on performance-based academic skills:

1. Acquaintance with the purposes, methods, and nature of evidence in each of the three major divisions of knowledge (i.e. the humanities, the social sciences, and the natural sciences).
2. Practice in critical thinking skills which enable comprehension, analysis, and extrapolation of verbal, written, quantitative, and visual information.

3. Acquaintance with the existing sources of information in the major divisions of knowledge, and the ability to use these sources.

4. Knowledge of the history, major findings, current state, and directions of inquiry in each of the major fields.

5. Ability to conduct independent inquiry, and to communicate findings effectively in oral, written, and visual forms.

To incorporate elements of these five competencies areas into a single freshman course; strict economy is necessary in the selection and ordering the course activities. We accomplished this by constructing two research projects which exercise selected competencies from each of the five areas. Since the competencies which were our focus are generic to all disciplines, we limited the subject matter of the course to the social sciences and the humanities, excluding the natural sciences because of their need for experimental equipment.

OUTLINE OF COURSE
(Liberal Studies 101)

I. Introduction
   A. The nature of facts, evidence, inquiry
   B. Characteristics of the scientific method
   C. Objectivity and subjectivity

II. Social Sciences
   A. Introduction of six social research methods
      1. Readings
      2. Replication exercises (of social science experiments)
   B. Social Sciences Project: study of classroom behavior
      1. Orientation and project goals
      2. Methods used:
         a. cultural analysis
         b. behavioral observation
         c. survey
         d. statistics
      3. Analysis and reporting of results

III. Humanities
   A. Introduction of three humanistic research methods.
      1. Readings
      2. Replication exercises (of creative and philosophical investigation)
   B. Humanities Project: definition of philosophical or evaluative concept.
      1. Orientation and project goals
      2. Methods used:
         a. introspection
         b. comparison
         c. logical analysis

3. Analysis and reporting of results

IV. Mastery Project

A. Integration and application of social scientific and humanistic methods in the construction of a research design.

B. Discussion and analysis of results.

During the semester the student conducts two research projects. The first project is in the use of social science concepts and methodologies. The student develops and executes a research plan that will help him gather evidence to answer a question about classroom learning. He must use four methods of social scientific inquiry in his design: behavioral observation, survey, statistical analysis and cultural analysis. He must compile his evidence into forms which communicate clearly his findings. Then, he must discuss the findings as they shed light on his initial question.

The second project is in the use of Humanities concepts and methodologies. The student studies human imagination and creativity, replicating experiments by philosophers who have written on the subject, then applying these methods to a project in philosophical investigation. The student is introduced to three humanistic methods in these exercises: introspection, comparison, and logical analysis. Accurate description, analogy, and the creation of categories for the analysis of creativity and imagination give the student a thorough exercise in humanistic methods of inquiry.

The course begins with the social science project, since the methodological rigors of social science allow us to introduce the student to problems of fact, evidence, and proof which will carry over to inquiry in the humanities. Several criteria of scientific method are considered: its empiricism, its logical plan, its operational assumptions, its potential for replicability, its use of language common to fellow researchers. The students are guided in the discussion of these concepts with worksheets which have them locate definitions of the concepts in a dictionary, and then rewrite the definitions in their own words, thus providing a basis for them to recognize the occurrence of scientific method in their own lives. The discussion concentrates on identifying the methods of inquiry used in everyday life which students bring with them to the class. We supplement this initial consideration of scientific method with a more

special focus on social science methods. Readings reporting the results of social scientific investigations are used to differentiate the various inquiry methods generic to the social scientific disciplines (some of which also occur in natural scientific and humanistic investigations). These methods are:

1. behavioral observation

   observing the actions of human and non-human subjects in order to gather behavioral data.

2. testing performance

   measuring the mental, emotional, and physical performance of human and non-human subjects in a structured task or environment.

3. survey

   interviewing people to determine their attitudes and opinions.

4. physical tests/measurements

   analyzing physical artifacts and measuring physiological signs.

5. cultural analysis

   studying the language, art, religion, and other folkways of a culture in order to understand the background for human behavior.

6. statistical

   collecting, organizing, and interpreting numerical data gathered by any of the above methods.

At the same time, students are taught to identify evidence collected in naturalistic, quasi-experimental, and experimental settings. The readings allow students to see how research designs are constructed and executed; where results are reported in summary form, the student must infer what methods were used to gather supporting evidence by mentally replicating the steps followed by the researcher. This practice builds the student's competency in critically reading and evaluation reports of social scientific research.

The student then goes on to apply the methods he has learned in answering a question concerning human behavior. Questions were limited to those concerning behavior

in classrooms settings, since relevant evidence would be readily available to all students. More importantly, analyzing classroom behavior forces the student to reexamine a phenomena with which he is already familiar, taking his existing vague notions of causality and rigorously gathering the scientific evidence to confirm or disproove them. Students are required to name and define two concepts which could be measured in a classroom setting; we take care to make the student define the concept both nominally and operationally. Some of the broad concepts chosen are student interest, teacher effectiveness, and classroom setting (including the arrangement of furniture). The student forms a hypothesis involving two concepts, one a fairly easy-to-measure independent variable (e.g. seating arrangement, room temperature, sex of teacher, time of day) and one more complex dependent concept more difficult to measure. This allows us to demonstrate to the student that complex questions can be answered scientifically only by gathering empirical data. For example, in order to prove that seating arrangement influenced class participation, the student is forced to visualize actual behaviors (note taking, answering questions asked by the teacher, etc.) which could serve as measurable indicators of the second concept. Once this research design is articulated, the student takes on the task of constructing an instrument that he can use to record actual variations in the behaviors.

We use as a model for this part of the project an observational instrument developed by Mary Lynn Collins (1977) for use in measuring teacher enthusiasm. The students are then required to observe several actual classes and record what goes on using their instruments. Discussing the results of these observations allows us to stress several points: the need for clearly defined observational criteria in order to produce objective and replicable results; the need for clearly recording and reporting results, both in tabular and narrative form, in order to produce evidence that is understandable and whose validity can be argued for effectively. Finally, the narrative description of the observation and its rationale forces the students to come to grips with hidden cultural assumptions. For example, several students may naively assume that choosing

a seat in the back of the room might indicate lack of intrerest in the class; when empirical evidence contradicts this assumption, they are forced to reexamine this bias and the reasons they had for holding it.

Students are next asked to gather additional information concerning their hypothesis using a survey. We analyze representative surveys, distinguishing forced-choice and open-ended questions, discuss the pros and cons of sampling, and lead the students to create and administer questionnaires to further test their hypothesis.

Ultimately students are asked to analyze and tabulate their results from both the observation and survey in order to demonstrate to them that quantified information can be used to test a hypothesis. Using simple statistics (mean, median, range, etc.) we lead them to make inferences concerning whether or not the data collected confirmed their original hypothesis. In a final written report of the entire project, students comment on whether the information collected confirms or disconfirms their hypothesis, and suggest possible avenues for future study. Discussion at this point emphasizes the value of all empirical results and the cumulative nature of scientific research.

Having introduced the student, in the first part of the course, to the rigorous procedures followed by scientists in the collection and interpretation of evidence, we then turn to humanistic methods of investigation, which are often difficult for students to identify because of their frequent use in everyday life. By isolating and naming these humanistic methods, following the model established in introducing social scientific methods earlier, we provide the student with a means to recognize and consciously employ these methods in the solution of problems in areas of human thought and judgment where "objective" empirical evidence is inappropriate. Thus, this portion of the course has two goals: first, to present the methods and practice used by humanists, and, second, to apply these methods in the solution of a humanistic problem.

The three methods isolated and discussed are introspection, comparison, and logical analysis. Introspection is the process by which one examines his own thoughts, feelings, reactions, and memories and accurately describes these observations. Com-

parison is the examination of similarities and differences among these introspections in order to classify them by isolating and sharply defining their characteristics; specialized kinds of comparison include analogy, simile, metaphor, and operational definition. Logical analysis is the ordering and systematizing of data produced through introspection and comparison according to a rationale; examples include the construction of taxonomies, the building of formal definitions, and the formulation of descriptive and explanatory hypotheses. To teach these methods, we assign essays by artists, writers, and philosophers which report the processes through which they create works of art, poems and novels, and philosophical treatises. In guiding the student through these readings, we help the student to recognize and isolate references to the three humanistic methods, and to see the role these processes play in artistic creation. In order to demonstrate the power of these methods in the investigation of a sphere of human activity normally closed to scientific methods, the students read and partially replicate a humanistic study of imagination. In a reading (Casey, 1976) required for this exercise, an investigator seeks to discover the traits of the imaginative process; he begins by describing several scenes he imagines, compares these to each other to isolate their common characteristics, and finally develops a critical taxonomy of these traits. To enable the student to appreciate this study, the student replicates the initial stages of the investigation (imagining, describing, and comparing several imaginative scenes) and then applies the taxonomy presented in the reading to see how effectively it describes his own experience. The result of this exercise is to demonstrate that conclusions based on subjectively produced evidence can be accepted if confirmed by the reports of others. Thus this exercise emphasizes the value of humanistic investigation in contributing to knowledge; discussion helps to clarify for the student the validity of film and literary criticism, esthetic discussions, and philosophical speculation in a world often overly impressed by scientific results. After the student has practiced recognizing and applying these methods, he begins a project designed to enable him to use the methods to produce a personal yet

objective definition of a philosophical or evaluative concept (e.g. honesty, justice, equality, etc.). Using models drawn from philosophical writing, the student writes a simple dictionary definition of the concept. He then reflects on his own experience and visualizes situations in which the concept occurs, thus creating as many concrete instances of the concept as possible. By describing and comparing the behaviors pictured in these introspective scenes, the student can arrive at a more comprehensive definition of the concept. The definitions arrived at produce much discussion because the concept is clearly grounded in human experience, thereby providing a common basis for analysis. In this manner, students are led to appreciate that arriving at knowledge is a gradual process of agreement in which even observations derived from subjective experience can withstand objective scrutiny if supported by evidence collected in a careful application of humanistic methods.

The course ends with a mastery project that asks the student to use methods of inquiry from the social sciences and humanities. The project takes a major question (e.g. "What is humor?") and requires the student to construct a research design that combines the methods of the humanities and social sciences. The design must make use of the methods appropriately, each method being used to gather a kind of evidence vital to the particular stage of the inquiry process.

Having taught and refined this course over a period of several semesters, we now feel capable of accessing some of its merits. First, it demonstrates that the methods of inquiry generic to all fields can be taught to freshman, and that beginning undergraduates can be shown how these methods are used in other courses and real-life situations. Furthermore, presentation of a variety of methods in a single course clearly emphasizes that problems, in any field, can be approached from a multitude of perspectives. One particular weakness to which freshmen are prone is dealt with well in the course: it demonstrates the need to support generalizations with evidence, both empirical data and concrete experience. In learning this important lesson, students begin to perceive that methods of inquiry in the social sciences and humanities, which

are often sensed as being in opposition, actually complement each other in the process of discovering knowledge. Finally, we have come to a great realization of the importance of giving students an opportunity to do actual research early in their college experience: the opportunity to collect evidence and use it to answer questions relevant to their own lives both excites and challenges them.

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SUMMARY

Ideas and Research: A Course Introducing Inquiry in the Social Sciences and Humanities

This paper describes an interdisciplinary, liberal arts course (Liberal Studies 101, Ideas and Research) introducing undergraduates to the ideas and methods of academic inquiry. The course is competency-based, using short research projects in the social sciences and humanities to instruct students in the ideas and methods fundamental to inquiry in each domain. The course is the first in a core curricula of interdisciplinary liberal studies in general education which may lead to a four year Bachelor of Liberal Studies degree if a student chooses this direction. Subsequent courses in liberal studies at the general education level which build on the skills introduced in Ideas and Research include academic library research; courses which illustrate the methods used by humanists, social scientists, and natural scientists, respectively, in formulating, investigating, and answering research questions; and, more advanced topical courses in these areas. In addition, we have a developmental program designed to insure that students already possess the competencies which are needed in our introductory inquiry course and our other general education offerings.

Our competency-based direction in liberal studies, as exemplified by the ideas and research introductory course, recognizes the fact the colleges must make clear which competencies they expect their students to acquire. Recent discussions in the academic community, as typified by the recent report of the Carnegie Commission on Higher Education (1977), indicate that educators are accepting this task. Identifying the competencies integral to undergraduate study in the domains of Social Sciences, Natural Sciences, and Humanities is somewhat of a problem for educators who have never examined the methods of inquiry implicit to their subject. Recent thought and curriculum development in inquiry skills generic to every discipline within a major domain of knowledge, and across domains, has provided a basis for liberal studies organized around clearly identifiable and assessable competencies. Alverno College in Milwaukee, Wisconsin has a four year education in liberal arts which develops eight competency areas of human thought and action in increasing levels of proficiency (Alverno College Faculty, 1976). The idea of developing human competencies within undergraduate education as a focused mission has been discussed at length in a valuable monographic series published at Bowling Green University in Ohio (Wodistsch, Ewens, and Schlesinger, 1977).

We have identified five areas of academic competency in our own restructuring of general education in the liberal arts which clearly focus on performance-based academic skills:

1. Acquaintance with the purposes, methods, and nature of evidence in each of the three major divisions of knowledge (i.e. the humanities, the social sciences, and the natural sciences).

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4. Knowledge of the history, major findings, current state, and directions of inquiry in each of the major fields.

5. Ability to conduct independent inquiry, and to communicate findings effectively in oral, written, and visual forms.

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- B. Social Sciences Project: study of classroom behavior
  - 1. Orientation and project goals
  - 2. Methods used:
    - a. cultural analysis
    - b. behavioral observation
    - c. survey
    - d. statistics
  - 3. Analysis and reporting of results

III. Humanities

- A. Introduction of three humanistic research methods.
  - 1. Readings
  - 2. Replication exercises (of creative and philosophical investigation)
- B. Humanities Project: definition of philosophical or evaluative concept.
  - 1. Orientation and project goals
  - 2. Methods used:
    - a. introspection
    - b. comparison
    - c. logical analysis
  - 3. Analysis and reporting of results

IV. Mastery Project

- A. Integration and application of social scientific and humanistic methods in the construction of a research design.
- B. Discussion and analysis of results.

The paper describes in detail the content of the course, examining its goals, methods, and outcomes. We have offered the course for several semesters, and have refined its sequence, worksheets, and supplementary readings so that it is replicable by other instructors (or institutions). In our presentation, we will distribute course materials that are used to guide student research examples of finished student projects.