

A STUDY OF INTERDISCIPLINARY PROGRAMS IN  
SELECTED INSTITUTIONS OF HIGHER  
EDUCATION

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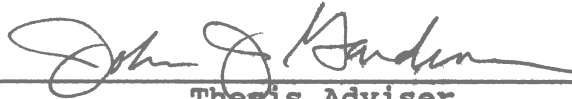
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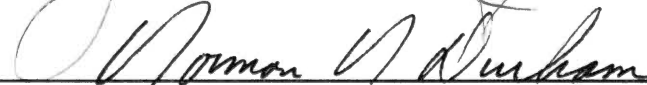
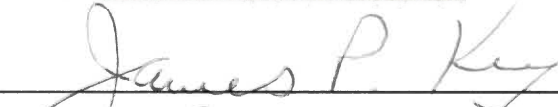
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## CHAPTER I

### INTRODUCTION

Before I built a wall I'd ask to know  
What I was walling in or walling out,  
And to whom I was like to give offence.<sup>1</sup>

Robert Frost

#### Background of the Problem

Since World War II, there have been very few successful interdisciplinary programs undertaken by American colleges and universities. On the other hand, research conducted by different authors clearly indicated that many institutions of higher education considered it highly desirable.

A major legacy of World War II was the end of the Industrial Revolution and introduction of the present era of Technocracy. As a result, it was necessary for American institutions of higher education to broaden the scope of traditional academic curricula by including explanandum from complementary courses.

It was found that the shift of resources from information gathering to information processing was accompanied by requests for broader, more integrative forms of higher education. Gardner (1985) wrote:

Collaboration is needed to build bridges between and among large pools of disciplinary information on the one hand and society's increasingly complex problems on the other.<sup>2</sup>

An historical review of interdisciplinary higher education programs, and examination of the available literature, yielded contradictory conclusions. For example, the literature suggested a need for broad, far-reaching interdisciplinary programs in higher education; also, an end to decades of specialization that inhibited deemphasized integrated learning.

A crisis exists in university education, if a crisis may be defined as a time of sharp but uncertain changes in the critical components. Students, faculty, administration, curriculum, campuses, finances--all are changing more rapidly and uncertainly than ever before. This crisis may be seen as a threat to established values or as an opportunity for creative reform.<sup>3,4</sup>

Gardiner (1987) described the problem as one where, "The creation of technological knowledge, a process which is the heart of modern economic growth, requires the use of interdisciplinary teams."<sup>5</sup> Another aspect of the problem of interdisciplinary teaching was discussed by Cleveland (1985) who concluded that:

Collegial, not command, structures become the more natural basis for organization. Conferring and networking, not command and control, become the mandatory modes for getting things done.<sup>6</sup>

The general and specific problems of interdisciplinary education at American institutions, along with suggested resolutions, were addressed by Abt (1970) who conducted a major study: "Interdisciplinarity in Universities: One Descriptive and One Ideal Model and Implications for University

Organization for General, Professional, and Lifelong Education and Research."<sup>7</sup> The findings of Abt's research provided a broad base of information concerning interdisciplinary activities at 76 American universities and colleges. Abt's study demonstrated most American colleges and universities failed to employ the principles of interdisciplinarity even though they were desired by administrators, department heads, and faculty members. Conversely, Abt showed that the same principles were heartily employed by business, industry and government.

After analyzing the dilemma, Abt emphasized the need to establish the interdisciplinary model of teaching in colleges and universities throughout the world. Nevertheless, Abt learned that most institutions of higher education had encountered major resistance toward the development and implementation of interdisciplinary programs from every type of collegial unit.

#### Purpose of the Study

The purpose of the study was to conduct ex-post facto research that described and identified interdisciplinary programs at a systematically selected group of American colleges and universities distributed between different regions of the United States during 1988 and 1989.

In addition, it was a purpose to conduct research which updated some information of the Abt (1970) study by employing the list of colleges and universities, and col-

lecting the self-reported responses of selected individuals currently employed by those colleges and universities.

#### Statement of the Problem

The study addressed the conflicting issues surrounding interdisciplinarity as "an opportunity for reform"<sup>8</sup> at institutions of higher education in the United States. The problem consisted of collecting data to assess and evaluate the current status of interdisciplinary programs at selected colleges and universities.

#### Research Questions

The research was designed to address five questions:

1. What problem areas are being addressed today through interdisciplinarity in higher education?
2. What are the efforts being undertaken by different participant institutions to resolve problems conventionally associated with interdisciplinary education?
3. What are the major obstacles, as differentiated from problems, to interdisciplinary education?
4. What are the remedial efforts necessary to overcome the obstacles of interdisciplinary education?
5. What are the future roles of interdisciplinarity in higher education?

### Need for the Study

The study is important because it collected self-reported observations of involved university officials concerning current interdisciplinary programs in place, the perceived obstacles and the remedial measures to overcome obstacles, and observations concerning the future role of interdisciplinary education at the institution.

The study also contributed to the growing body of available literature and studies concerning the principles of interdisciplinarity, interdisciplinary programs at selected colleges and universities, and provided new insights for professional educators who are concerned with establishing or expanding interdisciplinary education at their similar institutions.

The primary and secondary source information is important, because it yields data for other authors and researchers to use in future research that explores, describes, and analyzes the conditions of interdisciplinary education.

### Rationale

The rationale, or theoretical framework of the study, conforms with the investigative approach set forth and described by Abt (1970) to research the characteristics and attributes of interdisciplinarity in accordance with two models (see Figure 1): Ideal and Descriptive.

---

IDEAL MODEL	DESCRIPTIVE MODEL
1. Demand Generation	Demand Generation Imperfectly Communicated
2. Resources Mobilization	Resources Mobilization Inhibited by Competing Disciplines
3. Temporary Institutionalization	Institutionalization
4. Deepening and Broadening Continuous Adaptation	Deepening and Broadening
5. Continuous Adaptation	Stabilization
6. Replication	Replication
7. Reconstitution Into Other Disciplines As Needed	Decline Into Formalism
8. Dissolution When No Longer Useful	Dissolution Involuntarily Long After All Utility Is Lost

---

Figure 1. Abt's comparisons of the ideal and descriptive models of interdisciplinarity.

Source: Clark C. Abt, *Interdisciplinarity in Universities: One Descriptive and One Ideal Model and Implications for University Organization for General, Professional, and Lifelong Education and Research* (Cambridge, Massachusetts: Abt Publications, 1970), p. 12.

In theory, according to Abt, interdisciplinarity consists of a dynamic process that creates, bridges, and dissolves disciplinary boundaries that require the formulation of any type model for the explanation, prediction, and

efficient planning of activities. The interdisciplinary activities, as Abt (1970) theorized are,

The principal adaptive mechanism by means of which university curricula and researchers were continually conducted as a response to the changing needs of the present society and its future possibilities expected in basic research interests of some scholars.<sup>9</sup>

#### Commonalties of the Two Models

Both the descriptive and ideal model, respectively, mutually contain specific parameters that outline certain ongoing activities at colleges and universities, such as: classroom, library, research laboratory, and studies of professors and at dormitory desks of the students. The essence of the model was based on a belief that the activities always involved the interaction of two or more disciplines that ranged between simple communication across disciplinary lines to the mutual integration of concepts, methodology, procedures, terms, and data.

#### Ideal Model

The "ideal" model of interdisciplinarity creates, defines, limits, applies, and dissolves a knowledge-producing and transferring activity contributing to current or future societal needs with efficient application of scholarly and other resources. In other words, it is that independent new discipline arising out of interdisciplinary experiments, that was actually devoted to intellectual duty as needed and ready to dissolve into oblivion when its role

had been played in the continuing modulations of knowledge creation. It employs the activity as a perfect communication and organizational device between the needs of the present, the past, the future, and between the interests of the society currently expressed in the demand for solutions to practical social and technological problems; also, to the needs of the future society for problem-solving knowledge that cannot yet be imagined except by a few scholars whose interests are solely for the sake of knowledge.<sup>11</sup>

### Descriptive Model

The "descriptive" model of interdisciplinarity reflects the imperfect characteristics and attributes of formal academic organizations to communicate. The model accepts the tendencies of resistance to change, bureaucratic procedures, sociopolitical and legal constraints, and general sluggishness to respond to projected needs.

Beginning as a pioneering function, the descriptive model incorporates the iteration of error due to the lack of tested methodologies. As a result, the adherence to formalism was perceived as a fundamental attribute of the model since overall demand-needs of the institution chiefly respond to internal and external socioeconomic and political constraints.



## Summary

The rationale for the research conforms with the constraints and determinants of Abt's (1970) two models of "Ideal" and "Descriptive" interdisciplinarity, and the comparison chiefly illustrated the natural competition between disciplinary departments and "any new absorber of resources."<sup>12</sup> Theoretically, the ideal model indicates the movement of interdisciplinarity from demand to dissolution, with the intervening developments of institutionalization, expansion, adaptation, replication, restructuring, and eventual dissolution. In the descriptive model, demand for innovation or change is imperfectly communicated; generates conflict while competing for resources; experiences early institutionalization; and expands, stabilizes, and replicates attributes of other disciplines with a resulting decline into formalism. According to Abt's theory, the dissolution of interdisciplinarity occurs "long after all utility was lost."<sup>13</sup>

## Variables

Interdisciplinarity is best described as a function of the opportunity for reform of academic curriculum to accommodate relational knowledge, and information and data of parallel disciplines into a new synthesis that provides an improved learning experience for students. Conversely, research variables were the awareness and authoritarian perceptions of demand needs for integration of characteris-

tics and attributes of isolated disciplines, identifiable problems and resolutions, obstacles and remedies, and the future role of interdisciplinarity in higher education.

The ex-post facto, descriptive-exploratory research was loosely based upon the survey and data collecting portions of the Abt study; therefore, a general hypothesis for the study may be stated in the following manner:

A current study of interdisciplinarity utilizing Abt's list of selected colleges and universities developed during the late 1960s described interdisciplinary programs in place, the awareness about the value of interdisciplinary education, and officials at institutions identified obstacles and remedial measures perceived needed to overcome obstacles while predicting a positive future role for interdisciplinary education at the institution.

#### Assumptions

The research developed three assumptions.

It was one assumption that the Abt (1970) study was complete and conducted according to conventionally accepted principles for scientific research, and that the findings and conclusions were developed from reliable and valid data.

A second assumption was based on the firm belief that the population of college and university officials willingly volunteered to participate in the research as respondents in the current survey, and that they occupied identical or similar positions of authority noted in the Abt study. The researcher made telephone contact with each

institution to ascertain the person currently serving in the role indicated in the 1970 list.

Third, it was another assumption that the volunteer-participants provided "truthful" observations to statements in the instrumentation, and their written responses reflected minimal personal biases.

#### Limitations

A limitation which must be considered is the change in personnel, programs, and institutions over a twenty year period. Although the current study grew out of the Abt list, there have been personnel changes at all of the institutions and some colleges have closed or changed significantly.

The location of the researcher was in Southern California during 1987-1988, but the target population of the colleges and the universities were widely distributed among different regions in the United States; therefore, the condition necessitated use of the U.S. mail to conduct the survey.

The study was limited by certain other constraints beyond the control of the researcher. For example, the college and university officials were systematically selected on the basis of the positions of authority designated in the Abt (1970) study. Furthermore, participation in the survey and research was voluntary; however, it was

presumed to be likely that officials not choosing to volunteer for the research could have influenced the outcomes.

In addition, the survey and research were purposely and exclusively limited only to the colleges and universities designated in the Abt (1970) study; therefore, the results of the study must be viewed with caution when applied to similar institutions of higher education in other geographic regions of the United States.

#### Definitions of Terms

General Education: General education may be defined as one that provides a broad general view of the world and its problems, and the major responses to those problems that Man has thus far attempted.<sup>14</sup>

Interdisciplinary Education: Interdisciplinary education may be defined as the function of combining all or some courses from two or more distinct, parallel, or related disciplines.<sup>15</sup>

Interdisciplinarity: Interdisciplinarity may be defined as the synthesis of two or more disciplines which established a new level of discourse characterized by a new language of descriptions.<sup>16</sup>

## Organization

The study is organized into five chapters.

Chapter I presents and describes the purpose, problem, research questions, rationale, variables, hypothesis, assumptions, limitations and definitions of terms.

Chapter II is a review of the available literature, and it describes the ideas, notions and theories of different authors regarding the characteristics and attributes of interdisciplinarity and interdisciplinary education in the United States.

Chapter III sets forth and describes a methodology with a design to conduct research. In addition, it contains procedures to conduct a survey and collect primary source data from a list of authorized officials at the same institutions designated in the Abt study.

Chapter IV presents and describes the results of the survey, and analyses of the volunteer-respondents' outcomes to statements in the instrumentation.

Chapter V presents and describes the research findings of the investigation that formed the basis for the study conclusion, analyses of the collected data, and one or more generalizations about interdisciplinarity and conditionality of interdisciplinary education in America. In addition, the chapter describes the recommendations for further research, followed by a section of concluding thoughts.

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## CHAPTER II

### REVIEW OF THE LITERATURE

#### Introduction

The purpose of Chapter II is to present and describe the ideas, notions and theories of different authors in the available literature regarding the characteristics and attributes of interdisciplinary programs developed by institutions of higher education in the United States.

The chapter describes the interdisciplinary nature of the world. In addition, the chapter includes information developed by the authors concerning different aspects of interdisciplinary programs, such as: conceptual parameters, problems with implementation, and a summary of different efforts.

#### Nature of the World of Interdisciplinarity

Conventional wisdom accepted a premise, that, there was a lack of a positive relationship between the "traditional," academic method of teaching, and workplace requirements in the "real world." In other words, it appeared that most colleges and universities were too firmly entrenched in their traditional systems of education

to incorporate new developments in the external world into their existing curricula. Although each department within most institutions separately upgraded curricula to accommodate new knowledge gained in the external world, it was held as course-exclusive data unavailable to students with parallel majors or simply those desirous of gaining enrichment.

Cleveland (1985a) pointed out that the different problems of modern society could be largely attributed to the lack of shared information between different disciplines. Cleveland wrote that the solutions to most problems were "interdepartmental, interprofessional, interdependent and interactive."<sup>1</sup> The observation led Cleveland to believe that a new core curriculum should be developed that reflected the view that education was integrative brain work. Cleveland concluded that the capacity to synthesize information was the new competency which should be demanded of college students.

Prior to Cleveland (1985), Simon (1973) observed that in the service sector of society, organizational patterns needed to be revised to recognize the output that dealt with the processing of information. Simon recommended the principles of interdisciplinarity as the basis to form a new framework in the workplace that focused precisely on the flow of data and subsequent transformation of information for decision making. Simon summarily concluded that there existed a growing capacity to consider organization



interactions as embedded fragments of comprehensive models.<sup>2</sup>

Kockelmans (1979) advanced specific endorsement of interdisciplinary education and identified three major advantages, as follows: (1) integration of knowledge, (2) freedom of inquiry, and (3) innovation.

Kockelmans wrote:

Through interdisciplinary education the learner gains a closer knowledge of the unity of the world view than is available in traditional organization modes...because a student is encouraged to range over several fields, he or she gains a greater freedom of inquiry. These features help the student to become free of traditional limitations and gain original insights.<sup>3</sup>

Jantsch (1980) was another author who endorsed interdisciplinary education. Jantsch suggested that there was nothing in reality that favored the traditional breaking-up of empirical knowledge into isolated disciplines. Jantsch believed that many great discoveries of Western culture were achieved by investigators who correlated and employed broad knowledge found in the traditional disciplinary models. Jantsch suggested that the dissection of information into disciplines was possible only by sacrificing relationships between knowledge-acquiring systems and the environment, and by stopping "mental metabolism."

In describing the problem of academic- and curricula-traditionalism, Jantsch wrote:

To deal with the broken-up disciplinary sectors of knowledge about such a holistic reality amounts to freezing the world and digging deep and narrow holes into the frozen ground instead of looking at the stream of life with its pro-

cesses and interactions, turbulent patterns and emerging and vanishing vortices. Interdisciplinarity is an approach to partially unfreeze the world and interlink disciplinary 'holes.'<sup>4</sup>

Levine and Volberg (1980) also supported the principles of interdisciplinary education. The authors observed that a positive feature and benefit of the production of knowledge was building on existing information. Levine and Volberg found that researchers should be able to easily locate, evaluate, and advance the findings of colleagues and others. A major result, according to the authors, was the fact that society could employ the products of learning along with the fruits of knowledge as a means to improve the quality of life and recoup its investments.<sup>5</sup>

Boyer and Levine (1981) referred to the traditional structure of departments within colleges and universities as "historical artifacts," and suggested that they failed to exhaust the totality of human experiences or universal knowledge within the existing parameters. In addition, Boyer and Levine pointed out that scholars were separated from one another and from students. As a result, traditionalism had the affect of encouraging a view of the world of learning as chopped-up and fragmented.<sup>6</sup>

A broader view of the issue reflected by the available literature was provided by Cross (1970) who wrote:

If improving student learning were to become the major mission of colleges, dramatic, yea, truly revolutionary change would have to occur in the traditional practices of education.<sup>7</sup>

Cross, along with others, apparently supported the earlier opinions of Piaget (1970), as follows:

The essential ingredient in disciplines and their subject matters can be brought out by uncovering their basic or underlying structures. These structures cut across intra- and inter-disciplinary lines of division. Within disciplines certain structures are invariants of the different ways in which a discipline may describe, or relate to its subject matter, and therefore they capture its essence. Across disciplines such structures allow us to relate disciplines to one another and create structuralistic metadisciplines.<sup>8</sup>

Dressel, Johnson, and Marcus (1970) also described some negatives of traditional, departmentalized education that produced serious problems within the university, such as: isolation of professors, inhibition of new fields of knowledge, and narrow specialization of courses and research.<sup>9</sup> Similarly, McHenry (1977) observed that the disciplinary department was not necessarily accepted as the best of all possible styles for the academic organization. The major criticism was that conventional departments fostered a specialization that considerably narrowed the horizons of both the learner and the professor.<sup>10</sup>

The same ideas were expressed earlier by Van Doren (1943), who wrote:

The connectedness of things is what the educator contemplates to the limit of his capacity. No human capacity is great enough to permit a vision of the world as simple, but if the educator does not aim at the vision, no one else will, and the consequences are dire when no one does.<sup>11</sup>

Commenting on the interdisciplinary nature of business and industry, Jantsch (1980) agreed with the observations

of other authors and pointed to the differences between academic organization and the non-academic world. Jantsch viewed the situation in the university as significantly different because, although in non-academic research there appeared to be a form of disciplinary structure, it only served as an administrative skeleton. Jantsch referred to businesses that employed physicists and chemists, and noted that processes in the workplace were ad hoc interdisciplinary; however, administration (salary, benefits, etc.) was structured according to principles for operating the formal organization.<sup>12</sup>

Kockelmans (1979) illustrated another positive support for applying interdisciplinary principles to traditional discipline departments. For example, Kockelmans observed that some departments duplicated, extended or overlapped learning functions and knowledge in other disciplines. Kockelmans believed that many departments were inadvertently employing interdisciplinary principles, to a large or small degree; also, some institutions already possessed that capability.<sup>13</sup> McHenry (1977) agreed, and suggested that problem-solving was not necessarily restricted to disciplinary boundaries, because some problems were naturally composed of a variety of features that crossed the traditional boundaries of entrenched academic departments.<sup>14</sup>

## Conceptual Parameters of Interdisciplinary Programs

The prevailing organizational mode of most universities and colleges in the United States was traditional academic departments. On the other hand, a review of the available literature indicated a growing awareness among academicians to employ the principles of interdisciplinary education as a means to achieve specific goals.

In "Three Thousand Futures," a study for the Carnegie Council of Policy Studies in Higher Education, it was reported that isolation resulting from departmental controls was a serious problem confronting research and scholarship. Levine and Volberg, who conducted the study, observed that researchers and scholars were too often closed off from each other in the colleges and the universities by disciplinary walls erected by the departments. As a result, according to the authors, the institutions suffered from duplication of effort, neglect of important subjects, and isolation because critical, researchable questions failed to fit comfortably or adequately into the framework of a single department or discipline.<sup>15</sup>

Levine and Volberg (1980) concluded that, "Colleges and universities needed to encourage interdisciplinary scholarship and teaching, and the federal government should provide increased support to such work."<sup>16</sup>

Mayhew (1979) reviewed the work of different authors, and cited further support for crossing disciplinary lines.

Mayhew recommended periodic combinations and recombinations of different elements in the curricula, more experimentation with various teaching techniques, and wrote that interdisciplinary "activities help create an atmosphere of life and vitality."<sup>17</sup>

Kockelmans (1979) justified interdisciplinary approaches to education on the ground that they promoted integration of knowledge, freedom of inquiry, and educational curiosity. The three elements highlighted the conceptual desirability of interdisciplinary education because, according to Kockelmans, "They contained within them the promise of humanism."<sup>18</sup>

Hart (1874) foretold the desirability of interdisciplinary concepts:

Our undergraduates (in German universities) have at the present day too many studies, and are hurried through difficult and disconnected subjects at too rapid a rate. New professors in the natural sciences and the new professors in the classics threaten to tear the youth asunder between them.<sup>19</sup>

Boyer (1985) reported that colleges and universities should ensure that graduates were conversant with the best that had been thought and written about the human condition. In addition, that institutions should ensure that graduates were broadly educated in fields of knowledge other than their primary field, able to ask and answer questions of wide significance, and conduct field- or laboratory-intensive research. Boyer also noted that special-

ization should be balanced with broad undergraduate education.<sup>20</sup>

The study "Involvement in Learning" (1984) was similar to the one conducted by Boyer (1985), and the results demonstrated a need to integrate knowledge from different disciplines. The study also recommended that undergraduate requirements should be expanded and reinvigorated to ensure that content was directly addressed not only to the discipline in which it was found, but also to the development of the capacities of analysis, problem-solving, communication, and synthesis.<sup>21</sup>

Thornburn and Blackburn (1986) conducted a survey of the faculty members at three private universities in the Midwest. The study findings indicated that most professors desired some form of interdisciplinary programs. The authors found, that, not only were the faculty already involved with interdisciplinary education, they reported that students experienced increased vitality, higher intellectual stimulation, and gained more respect for other disciplines. Moreover, application of interdisciplinary principles in the university setting developed a greater sense of "collegiality" between faculty members across different disciplines.<sup>22</sup>

Boyer and Levine (1981) described efforts at the University of Chicago undertaken by Robert Hutchins to demonstrate the conceptual desirability of interdisciplinarity in higher education. Boyer and Levine described Hutchins'

program as a radical approach to general education that was distinguished by the use of a "Great Books Program," interdisciplinary courses, early college admissions, comprehensive examinations, and a four-year required course of study. Boyer and Levine noted that the strength of the interdisciplinary program was credited to the prestige of the University of Chicago, and the charisma of Robert Hutchins. Later, according to Boyer and Levine, parts of Hutchins' interdisciplinary program were replicated in different colleges throughout the country, and some are still in place with reduced emphasis.<sup>23</sup>

Boyer and Levine (1981) reported that the main advantage of Hutchins' approach was its ability to broaden the educational experience. The authors observed that when general education was forced into departmental constraints it tended to lose its purpose, and wrote:

The focus was too narrow and connections are not made. Little thought is given to how the separate disciplines might actually contribute to a truly general education. If anything, the question is often posed the other way: How can general education contribute to the disciplines.<sup>24</sup>

As a result, Boyer and Levine concluded that departments should be encouraged to employ interdisciplinary principles as allies of common learning, not its end. In addition, the authors firmly supported interdisciplinary programs as useful approaches to learning.<sup>25</sup>

Boyer and Levine (1981) reviewed a report by the Southern Regional Education Board. The findings indicated



that there was a positive need for colleges to broaden educational perspectives. In addition, according to Boyer and Levine, the report noted that more courses should be required from a variety of disciplines outside the major. Furthermore, it was also reported that undergraduates should be directed to develop better ways to organize, understand, and present knowledge across traditional departmental lines.<sup>26</sup>

In a study aimed at efficiency in teaching methods, Bowen and Douglass (1971) pointed to the conceptual desirability of interdisciplinary techniques based on budgetary considerations and improved instruction. Rather than rigid traditional approaches, they suggested a mixture of educational methods.<sup>27</sup>

#### Implementation Problems of Interdisciplinary Programs

Dressel, Johnson and Marcus (1970) traced the 100-year development and entrenchment of single discipline education in American colleges and universities, and observed that most departments adhered to one discipline and functioned mainly along traditional lines. The authors noted that Harvard, Yale, Columbia, and Princeton established autonomous departments by the 1890s, and they remained firmly entrenched throughout the 20th century. According to Dressel et al. (1971), the traditional system of departmentalizing the educational process led to increased

specialization, more isolation, and conventional wisdom accepted it as the status quo.<sup>28</sup>

Levine and Weingart (1973) observed that the major objection to interdisciplinary education was both faculty reluctance, and the resistance and the apathy of students to innovation. After completing a study that included Florida Presbyterian College, Florida Atlantic University, University of Wisconsin at Green Bay, Metro State College in Minnesota, and the University of California at Santa Clara, the authors reported that some highly visible curricula reforms of the 1960s were well planned educational programs, but they failed to attract the amount of forecasted students for whom the special programs were developed.<sup>29</sup>

The literature indicated that another problem with the development and implementation of interdisciplinary programs was faulty assumptions by faculty members. For example, as the involved principals in higher education, it was one assumption that institutions could easily adapt interdisciplinary programs to existing curriculum. Jantsch (1980) reported that it was a mistake to expect disciplinary-oriented universities to quickly restructure programs or become leaders in interdisciplinary education. Jantsch pointed out that the university's structure directly reflected the perceptions, interests, skills, beliefs and ambitions of the faculty. As a result, according to Jantsch, any changes perceived as external were con-

sidered a threat to the department's structural integrity and met with resistance and antagonism.<sup>30</sup>

Stivers (1986) suggested that administrative assumptions concerning the need for interdisciplinary programs generally failed to account for de facto interdisciplinary teaching. Stivers reported that interdisciplinarity was a reality in many traditional departments of the humanities and arts. As a result, Stivers observed that departmental boundaries did not necessarily inhibit implementation of interdisciplinary programs. On the other hand, Stivers noted that tenured faculty members generally failed to support new programs when the structure of the departmental organization was challenged by administrative edict.<sup>31</sup>

The views of Kockelmans (1979) supported those of other authors (Stivers, 1986; Jantsch, 1980; Levine & Weingart, 1973, and others), and suggested that the problem of implementing change was based on two factors. For example, Kockelmans believed that reluctance to change was derived from the nature of departmental autonomy. The departmental objections to change, according to Kockelmans, were based on the pragmatic consideration to focus total support on the central discipline to maintain growth. In addition, Kockelmans pointed out that the supremacy of disciplinary autonomy and integrity over administrative authority was the fundamental cause of resistance to interdisciplinary programs. Moreover, Kockelmans (1979) noted that the factor of "entrenched resistance" interacted

directly with the normative 'administrative competition' between departments for status, fund and other benefits.<sup>32</sup>

There appeared to be another problem with the factor of institutional change that confronted efforts to develop and implement interdisciplinary programs in colleges and universities. Jantsch (1980) reported that personality traits, prejudices, limited teacher-training, and plain narrow-mindedness, were other variables that determined whether or not institutions entertained notions for change. Jantsch (1980) wrote:

There is an academic proletariat of narrow-minded, highly specialized, and frightened faculty members who are overly concerned with their static security. The result of these concerns is a reluctance to take up the challenge of new visions and synthesis.<sup>33</sup>

The views of Jantsch (1980) were supported by Kockelmans (1979) who stated: "Major educational reforms are increasingly difficult to achieve, largely because the greatest opposition generally comes from within the faculty."<sup>34</sup> Kockelmans (1979) agreed, and summarized the problem. Kockelmans emphasized that interdisciplinarity could not be successful if it was perceived as a threat to the integrity of the department or discipline, or to their "raison d'etre." Kockelmans added that psychological and conceptual disciplinary entrenchment were common features of traditional educational systems, and any attempt to develop interdisciplinary programs was taken as a threat by involved principals. Kockelmans concluded that the major problem with implementation of interdisciplinary efforts

were the failures to preserve the unique outlook and substantive concerns of the disciplines, respectively.<sup>35</sup>

Abt (1970) described three major forces working toward interdisciplinarity, and, conversely, the major force working against it.

According to Abt (1970), the three forces working towards interdisciplinarity are as follows:

1. Areas of concern where the discipline-defining forces have shifted from the currently defined discipline boundaries to new groupings of several already established disciplines, but in combination with each other.
2. Areas of scholarly or social interest to which already established disciplines can individually make partial contributions, although one group of any number of them fully satisfies the substantive and methodological knowledge needs of the problem.
3. The mutual support--intellectual, social, political, or, interpersonal and emotional--that disciplines operating in a given academic setting may offer each other.<sup>36</sup>

Abt presented a comprehensive description of the singular force working against interdisciplinarity that included information already provided by the other authors, as follows:

All those university administrative arrangements creating disincentives and penalties through physical, economic, or sociopolitical means to the free flow of information, data, and

students as well as scholars--specific department course requirements for degrees allowing few substitutions from other departments, lack of mutual physical access, social and hierarchical distinctions, unique technical languages, highly politicized academic activities, and in general all those things that tend to separate rather than to bring together people interested in solving problems.<sup>37</sup>

Student apathy toward new programs was another area addressed by different authors in the literature (Levine & Weingart, 1973; Jantsch, 1980). For example, several undergraduate colleges in the United States developed interdisciplinary themes, but they were not entirely successful.

For example, Kockelmans (1979) found that a crucial element in the failures of interdisciplinary programs appeared to be a lack of enthusiastic support from students. On the other hand, many curricula changes were designed to provide the "relevance" demanded by students in the 1960s, but their interest quickly waned and swung back towards the traditional paths of learning. Kockelmans (1979), along with others, found that the students' goal for higher education was competition for lucrative jobs after graduation.<sup>38</sup>

Kockelmans' (1979) observations were supported earlier by Levine and Weingart (1973). The two authors found that the reform policies of the University of California at Santa Cruz, to implement interdisciplinary courses, seriously jeopardized enrollment in the mid-1970s due to apathy on the part of the student body. As a result, it was nec-

essary for the university to reinstate traditional programs.<sup>39</sup>

Grant and Reisman (1981) dealt with the importance of student support as a critical function for lasting changes in the curriculum, they studied different reforms and experiments undertaken by various colleges and universities in the United States. The authors found three important factors had to be present for any reform to be successful, as follows: (1) support of the student population, (2) contact with changes in students' attitudes, and (3) new programs had to reflect attitudinal changes of the students and environment.<sup>40</sup>

The literature indicated that conventional wisdom accepted as a caveat the paradox of trying to follow changes in student interests, and to provide a solid educational experience. Boyer and Levine (1981) admitted that curriculum change was a necessary reality of higher education. In addition, the authors also observed that most faculty members and deans affirmed that "tinkering" with curriculum was an ongoing process.<sup>41</sup> In suggesting a solution for the problem, Mayhew (1979) noted that the support of the student body was necessary for any reforms to be successful. In qualifying the observation, Mayhew (1979) wrote: "To receive the support of the students...the program must have a solid purpose, direction, and be within the capabilities of the faculty."<sup>42</sup>

## Summary

The review of the available literature included descriptions of the nature of the world of interdisciplinarity, conceptual parameters of interdisciplinary programs, and implementation problems of interdisciplinary programs in American colleges and universities.

The literature indicated that there were few, if any, positive relationships between the traditional academic method of teaching and "real world" requirements of the workplace, because most institutions and departments preferred established methodologies. Some observers suggested that core curriculum needs to be changed, and workplace organizational patterns should undergo revision for many different reasons.<sup>43,44,45</sup>

The advantages of interdisciplinarity were integration of knowledge, freedom of inquiry, innovation, educational curiosity,<sup>46</sup> building on existing information, improving the quality of life;<sup>47</sup> and, students experienced increased vitality, higher intellectual stimulation, and gained more respect for different disciplines.<sup>48</sup>

The negatives of traditional disciplinarian organization were isolation of professors, inhibition of new fields of knowledge, narrow specialization of courses and research;<sup>49,50</sup> inter- and intra-departmental duplication of efforts, overlapping functions;<sup>51</sup> no basis in fact for maintaining a higher educational system whereby teaching



empirical knowledge should be necessarily isolated into separate disciplines.<sup>52,53</sup>

The reasoning of different authors to cross disciplinary lines was based upon the growing awareness for combining various elements in the curricula, testing more experimental teaching techniques, creating a vital academic atmosphere,<sup>54</sup> broadening the knowledge of students beyond the primary field of study, integrating knowledge from different disciplines, and developing capacities of students for analysis, problem-solving, communication and syntheses.<sup>55</sup>

The literature indicated that some, but not all, faculty members and heads of departments desired interdisciplinary programs in the curriculum.<sup>56,57</sup> However, different authors identified areas of concern that inhibited development of interdisciplinarity. For example, the major hindrance was the reluctance of administration, department heads and faculty.<sup>58</sup> Other problems were faulty assumptions concerning adapting interdisciplinary programs to the curriculum;<sup>59</sup> and, the prevailing belief that interdisciplinarity possessed inherent boundaries.<sup>60</sup> Furthermore, departmental autonomy and competition for status and funds were reported to be other problems,<sup>61</sup> along with personality traits, prejudices, limited teacher-training, and narrow-mindedness.<sup>62</sup>

Conversely, the literature indicated consensus between the authors regarding the need, development and implementa-

tion of interdisciplinary programs in American colleges and universities. It was shown that three forces supported interdisciplinarity: shifting emphases of disciplines, partial contributions of disciplines to different methodologies, and the need for mutual support for attaining educational goals. On the other hand, the disincentives (social, economic, sociopolitical) were outlined as student apathy, entrenched hierarchies, thoroughly politicized activities, and discouraging course substitutions.<sup>63</sup>

The review of the literature concerning interdisciplinary programs indicated that scholars, researchers, authors, administrators, heads of departments and faculty members perceived--to a large or small degree--the conceptual desirability of interdisciplinary programs. On the other hand, the literature also showed that few institutions were actively engaged in promulgating interdisciplinarity due to a high rate of failure after program design and implementation. The problems, according to the literature, appeared in the form of resistance from administrators, heads of departments, faculty members and students, and a general misunderstanding regarding the dynamic mission of higher education in adjusting to changes in the "real world."

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## CHAPTER III

### METHODOLOGY

#### Introduction

Chapter III presents and describes the methodology with the procedures to conduct ex-post facto, exploratory-descriptive research that investigates the characteristics and attributes of interdisciplinarity in American institutions of higher education. In addition, the chapter reviews the data collecting and survey analysis portions of the research conducted by Abt (1970), that surveyed and examined interdisciplinarity as an opportunity for reform.

There were major differences in the approaches used for the investigations between the current study and the one conducted by Abt in 1970. First, nearly two decades had elapsed, and it was reasonable to surmise that the colleges and the universities experienced many changes in interdisciplinary education, hired and retired faculty members and administrators, and otherwise manipulated pedagogy in accordance with present technologies like computers. Second, Abt's primary concern was the development of the "Ideal" and "Descriptive" models, respectively, and his survey of institutions with interdisciplinary programs was a function of selecting the colleges and the universities

from the list provided by the OECD, Organization for Economic Cooperation and Development at that time in the late 1960s.

In addition, Abt (1970) originally conducted research for the following purposes.

To examine interdisciplinarity as an opportunity for reform...describe the current status and near future possibilities of university organization in necessarily simplified terms of interdisciplinary aspects of general and professional and pre-university and adult education, teaching and the training of teachers, research and the training of researchers, the relationship between teaching and research, and across all of these issues the cultural, social, political, and economic impacts of these possible changes on all the significant groups concerned with the university--the students, faculty administration, pre-university educators, parents, governments, and employers.<sup>1</sup>

On the other hand, the current research used the list of colleges and universities found in the Abt study to survey the current status of interdisciplinary programs in those institutions.

#### Research Design

The research design used the colleges and universities from Abt's 1970 study. In addition, the design outlined the steps necessary to develop a survey questionnaire with statements expressing different conditions of interdisciplinarity and interdisciplinary education for analysis by the researcher according to "a qualitative indication of ranges and emphases."<sup>2</sup>



The design also described the procedures deemed necessary to conduct the direct mail survey, and to collect and evaluate the results and the findings used to form a study conclusion, and one or more generalizations about the perceptions of educators towards the current conditions and future role of interdisciplinarity and interdisciplinary education in the United States.

### Selection

The selected list of the research reflected colleges and universities within the geographic boundaries of the United States and its possessions.

The selection of institutions for the present research was limited to the American colleges and universities who previously appeared in the Abt (1970) study. Therefore, the selection consisted of the same list of 76 colleges and universities surveyed by Abt (1970). The list of institutions appears in Appendix C. It reflects changes from the original list due to closure and name changes involving three institutions. The institutions ranged between 1,000 to 30,000 students with from 100 to more than 5,000 faculty members, and they were mostly located in urban/metropolitan areas. The ages of the institutions ranged between four to 300 years old. Also, in most instances, both students and teachers were at least partly lodged on a campus setting. The most common institutions were those with over 10,000-15,000 students, and 1,000-2,000 faculty members.

The research responses population consists of the colleges and the universities who completed and returned survey questionnaires to the researcher.

### Procedures

Abt's sample was selected on the basis of OECD information that listed colleges and universities with interdisciplinary education programs installed. Abt (1970) noted that:

(The Abt sample fell) somewhere between a random sample and one biased in the direction of interdisciplinary activities. This seemed appropriate, since the objective of the survey has not been to determine the degree of interdisciplinary activity in typical colleges and universities, but rather to determine the "state-of-the-art" of interdisciplinarity in American universities in its most advanced state, to contribute towards the better understanding of interdisciplinarity and its role in the university of the future.<sup>3</sup>

### Instrumentation

Appendix B contains a copy of the survey questionnaire (instrumentation) employed to collect the primary source data for the research.

The statements in the instrument were designed to elicit the self-reported, written perceptions of sources of authority at different institutions of higher education towards current conditions of interdisciplinarity and interdisciplinary programs. The three open-ended statements addressed the major issues of the research: (1a) areas being addressed by the institution through interdis-

ciplinary programs; (1b) identify and briefly describe current interdisciplinary programs, (2a) state the observed obstacles, (2b) recommendations to overcome observed obstacles, and (3) perception(s) of the future role of interdisciplinary education.

The instrument was designed to accommodate written responses, and contained a notation requesting additional information on supplemental sheets if deemed necessary. Therefore, although the "instructions" delimited the observations to written responses, there were no constraints on the amount of information.

#### Survey Package

The survey package contained a copy of the "Cover Letter" (see Appendix A) signed by the researcher, a blank "Survey Questionnaire;" also, a stamped, self-addressed envelope to remail the completed survey questionnaire back to the researcher.

Cover Letter. Appendix A contains a copy of the cover letter that accompanied the instrumentation, and it explained the nature, purpose and request for participation in the survey.

#### Conducting the Survey

The researcher developed a research package that contained a copy of the cover letter (see Appendix A) and survey questionnaire (see Appendix B) for the officials or

highest administrative/departmental unit included on the master list of names and addresses of the colleges and the universities (see Appendix C) in the Abt (1970) study. The research packages were mailed at the same time.

### Data Processing

A table was designed to accommodate and to list the self-reported, written perceptions of the volunteer-respondents who returned completed questionnaires to the researcher. The table contains three columns with identifying box headings, as follows: "Item No.," "College or University," and "Written Response."

The first column, "Item No.," lists the sequential order of the responses. The second column, "College or University," lists the name of the institution. The third column, "Written Response," contains a brief summary of the self-reported, written observations.

### Data Analyses

In order to analyze the collected data and obtain "a qualitative indication of ranges and emphases,"<sup>4</sup> it was necessary to describe the results according to the subjects, colleges and universities (emphases), and events (ranges).

First, the data in the tables were grouped according to the areas (Survey Question 1a) of interdisciplinarity that were addressed and reported by the colleges and uni-

versities. Second, a list of the identified and described interdisciplinary programs was unnecessary since the data was organized in the five tables (Responses to Survey Question No. 1a, 1b, 2a, 2b, and 3). Third, the obstacles (Survey Question 2a) and recommendations to overcome the obstacles (Survey Question 2b) were presented and described separately. Fourth, the perceptions of the future role of interdisciplinarity (Survey Question 3) were organized, presented and discussed according to the groups of colleges and universities.

### Results and Findings

The results of the data collected by the research were compared with the same information obtained by Abt (1970) in the previous study, and the differences and the similarities formed the findings of the research.

### Summary

The chapter presents and describes the methodology that contained the design for this research and to develop instrumentation, conduct a direct-mail survey, and collect and analyze self-reported responses of volunteer-respondents to statements concerning the condition of interdisciplinarity, interdisciplinary programs, obstacles, overcoming obstacles, and perceptions of the future role.

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## CHAPTER IV

### RESULTS

#### Introduction

Chapter IV presents and describes the results of the survey and the research that investigated current conditions of interdisciplinarity, interdisciplinary education and interdisciplinary programs at colleges and universities in the United States.

#### Conducting the Survey

Research packages were mailed to the colleges and universities (Appendix C) on Abt's master list.<sup>1</sup> It required more than four months to receive completed instrumentation back from the universities. Forty-eight responses were received; twenty-three contained completed survey questions. These twenty-three provided the raw data of self-reported responses. The remaining twenty-five responses were mainly copies of college catalogs and general letters which did not respond directly to the survey and were therefore excluded from this research.

### Tabulating the Raw Data

Tabulating and recording the raw data were accomplished in accordance with procedures described in Chapter III. The self-reported, written responses to the open-ended statements in the instrumentation (Appendix B) were abridged and reorganized into tables (Appendixes D through H) for analysis. The original instrumentation returned to the researcher by respondents were filed for verification.

A master chart was made reflecting the distributions of the self-reported written observations, ideas, notions and perceptions of the respondents concerning characteristics and attributes of interdisciplinarity expressed by the five statements in the instrumentation.

### Organization of the Chapter

This chapter presents the results of the survey that were described in a manner that directly reflect the organization of the questions in the instrumentation, as follows: Areas Addressed at Institutions Through Interdisciplinary Programs (Appendix D); Identification and Descriptions of Existing Interdisciplinary Programs (Appendix E); Areas of Major Obstacles Observed at Institutions (Appendix F); Needs of the Institution to Overcome Observed Obstacles to Interdisciplinary Programs (Appendix G); Future Role of Interdisciplinary Education at Institutions (Appendix H); and, Summary Results.



## Areas Addressed at Institutions Through Interdisciplinary Programs

### Observations

Appendix D contains the raw, primary source data obtained from the respondents to Question 1a in the instrumentation: "What areas are being addressed at your institution through interdisciplinary programs?"

The self-reported, written observations of the respondents indicated that seven interrelated areas were addressed, as follows:

1. General education;
2. Sciences;
3. Ethnic and studies of civilizations;
4. Women's, humanities, social sciences, government and political;
5. "True" Interdisciplinary programs;
6. Core courses; and,
7. Approximately even distributions of the following areas: Civilizations only, religion, degree majors, and Special Certificate courses.

### Distributions

The results show that nine institutions (Kalamazoo, Bard, Eckerd, California Polytechnic, Bakersfield, San Bernardino, Fullerton, Hayward, Long Beach, and Los Angeles) reported interdisciplinary programs for general

education courses. Wesleyan reported interdisciplinary programs for both ethnic studies (African, African-American, East Asian, Latin American, Medieval, Russian, etc.) and the sciences; however, Florida Atlantic, Southwest Missouri, Queens, Earlham, and Los Angeles only reported interdisciplinary programs for ethnic studies. On the other hand, the results showed that some of the institutions (Wesleyan, Austin, Amherst, State University of New York, Toledo, Bakersfield, and Fullerton) had interdisciplinary programs for the sciences. Furthermore, Austin reported an interdisciplinary program for the study of civilizations.

Additionally, there were interdisciplinary programs in place for women's studies, humanities, social sciences, politics, and government at Southwest Missouri, Queens, Bard, San Bernardino, Hayward, and Los Angeles.

Four other institutions (Southern Methodist, Eckerd, Amherst, and City College of New York) reported interdisciplinary programs for core courses (Southern Methodist & Eckerd), degree majors (Amherst) and a special certificate (City College of New York). One institution, Queens College, reported interdisciplinary programs for the study of religion.

### Summary

The distributions of the observations to Question No. 1a in the instrumentation indicate that interdisciplinary

education programs address a wide variety of areas, such as: general education, sciences, core courses, and courses for degree majors and students seeking special certificates. Other interdisciplinary programs address the areas of religion, ethnic groups and civilizations, women's studies, humanities, social sciences, government and national and international politics.

Identification and Descriptions of  
Existing Interdisciplinary  
Programs

Observations

Appendix E contains the raw, primary source data obtained from the respondents to Question 1b in the instrumentation: "Identify and briefly describe the interdisciplinary programs that exist at your institution."

The self-reported, written observations of the respondents indicate that a wide variety of interdisciplinary programs exist at different institutions. It should be noted that some respondents (Sonoma State, Beloit, Southern Methodist) simply responded to Question 1b by sending a catalog. However, catalog information was not included in the results, because a major purpose and criterion of the investigation was to obtain the written, self-reported observations of the respondents. Also, it should be noted that Amherst College made "no response" to the question. Hence, the lack of self-reported responses to Question 1b

somewhat diminished both the quantitative and qualitative aspects of the results.

### Distributions

A careful review of the data in Appendix E provides an overview of the many different types of interdisciplinary programs currently in place at the colleges and universities, and a summary of the distributions of the observations to Question 1b showed that the institutions had interdisciplinary programs in many fields of endeavor that usually reflect the academic focus of the college or university, respectively, in terms of liberal arts, science, humanities, and others.

### Areas of Major Obstacles Observed at Institutions

### Observations and Distributions

Appendix F contains the raw, primary source data obtained from the respondents to Question 2a in the instrumentation: "What areas are the major obstacles to interdisciplinary education that you have observed at your institution?"

The results to Question 2a indicate that the major areas reported regarding the obstacles to interdisciplinary education at their respective institutions were the domination of departments over interdisciplinary program development and implementation (Amherst, Toledo, California Poly-

technic, and Bakersfield). On the other hand, it should be noted that three institutions (Wesleyan, Florida Atlantic, Beloit) reported "none."

The respondents also reported a wide variety of obstacles, such as: cost (Kalamazoo, Long Beach, Los Angeles); staffing interdisciplinary programs and dealing with the "threat" of interdisciplinarity to departmental and faculty status (Kalamazoo, Austin, Bard); hesitancy of faculty to try new programs (Southwest Missouri, Toledo, Los Angeles); allocation of resources (Southwest Missouri, State University of New York, Toledo).

Other obstacles reported were lack of interest (Wesleyan, San Bernardino), adequate funding (Queens, City College of New York), structure of the university (Southern Methodist, San Bernardino), problems with settling the issues of promotion and tenure (Amherst, San Bernardino), demands on the faculty (Earlham, Eckerd), lack of coordination (Earlham, San Bernardino), and student apathy (San Bernardino, Hayward).

In addition, some obstacles were reported by only one institution, respectively, as follows: faculty bias (San Bernardino), obtaining credit for teaching the course (Bakersfield), salaries (Amherst), issues surrounding the affect on career path (State University of New York), lack of continuity and giving students an adequate academic background (Bard), superficiality of programs (Sonoma State), influence on core curriculum and competition for

programs between departments (California Polytechnic), and the lack of growth in student enrollment (Hayward).

### Summary

The results to Question 2a show that three institutions reported "no obstacles" to interdisciplinary programs. Conversely, different respondents reported that domination of traditional departments was the most important obstacle to interdisciplinarity, interdisciplinary education, and development and implementation of interdisciplinary programs.

Other areas of obstacles were cost, staffing, "threat" of interdisciplinary programs to faculty, departmental status, hesitancy to try new programs, and the equitable distribution of resources. In addition, respondents reported a wide variety of obstacles, such as: inadequate funding, structural rigidity of the institution, unresolved issues of promotions and tenure, increased demands on the faculty, lack of coordination, and student apathy.

The respondents at 10 institutions reported one obstacle each, such as: faculty bias, difficulty of obtaining credit for teaching interdisciplinary courses, salaries, jeopardizing career path, lack of continuity between interdisciplinary programs, providing students the necessary academic background for interdisciplinary courses, superficiality of some courses, affect on the core curriculum,

competition between departments, and lack of growth in student enrollment.

The results indicate a lack of consensus between the respondents concerning the obstacles to interdisciplinary education. Essentially, the results show that the obstacles existed in the broad areas of administration, funding, and interface of curriculum. Additionally, other obstacles exist in subjective areas that directly or indirectly impact the faculty (salaries, tenure, etc.), and departmental status.

Needs of Institutions to Overcome  
Observed Obstacles to Inter-  
disciplinary Programs

Observations and Distributions

Appendix G contains the raw, primary source data obtained from the respondents to Question 2b in the instrumentation: "What is needed to overcome these obstacles?"

There were three institutions that did not provide a response to Question 2b, as follows: Florida A & M, Southern Methodist, and City College of New York.

The observations to Question 2b indicate that Wesleyan College singularly reported "nothing" was needed to overcome the obstacles. However, the remaining 22 respondents identified 20 entities that were somewhat distinct from each other, to a large or small degree, or academically or administratively related.

For example, Amherst reported four needs: (1) providing more incentives, (2) increasing the amount of credit given to faculty, (3) improving assessment of programs, and (4) furnishing measures that engendered greater interest.

San Bernardino offered three things needed to overcome obstacles: (1) increased funding, (2) improvement in the allocation of resources, and (3) finding ways for joint appointments of faculty from different departments for the programs.

The respondents at nine institutions generated two needs each, respectively, to overcome obstacles, and they were Austin, Southwest Missouri, Queens, Beloit, State University of New York, Earlham, Bard, Eckerd, Toledo, and Fullerton.

Austin, like Amherst, reported needs to provide more incentives and increased credit for faculty teaching interdisciplinary courses. Southwest Missouri suggested increased funding and greater leadership. Whereas Queens agreed with Southwest Missouri concerning the idea for funding, the respondent added development of measures to increase student awareness. Beloit, Kalamazoo and Eckerd reported a need to increase the size of the faculty; in addition, like Southwest Missouri and Queens, Beloit agreed that funding was necessary to overcome obstacles. State University of New York, along with Bard and San Bernardino, agreed that there was a need to improve the allocation of resources; however, State University singularly suggested



that institutions provided measures to insure the career path of faculty involved in interdisciplinary programs. Earlham proposed creating a separate department for interdisciplinary education and programs, and better allocation of the faculty; the view to create a separate department was also supported by Fullerton. Both Toledo and Los Angeles, respectively, reported a need to develop deeper commitment on the part of administration towards interdisciplinary education and programs; also, Toledo added the need for departments to gain more control over the admission of students.

Bard suggested that interdisciplinary programs needed more structure; Bakersfield offered as a need the greater involvement in decision making for programs; Hayward submitted the need to make interdisciplinary programs a compulsory feature of the institution; also, Fullerton and San Bernardino agreed that there was a need for more cooperation between Schools and Departments.

#### Summary

The self-reported, written observations of the respondents to Question 2b in the instrumentation were collected by the survey, and they indicate different things needed to overcome obstacles confronting further development of interdisciplinary education and programs at their respective institutions.

## Future Role of Interdisciplinary Education at Institutions

### Observations and Distributions

Appendix H contains the results of the survey to Question 3 in the instrumentation: "What do you see as the future role of interdisciplinary education at your institution?"

According to most respondents, the future role of interdisciplinary programs at America's institutions of higher education was "expanding," "spreading," and "increasing." Kalamazoo indicated that the future role was "definite;" conversely, without any explanations, four respondents (Southern Methodist University, Bakersfield, Hayward, and Los Angeles) reported the future role was "decreasing" at their respective institutions.

### Overcoming Obstacles

Other results indicate that the respondents perceived 20 entities or different needs to be addressed in order to overcome obstacles, and they were loosely collected in order of importance:

1. Incentives, Program Assessment, Developing More Interest and Providing Faculty With More Credit.
2. Increased Funding, Better Allocation of Resources, and Joint Appointments of Faculty From Different Departments.

3. Increased Size of Faculty, Measures To Insure Faculty Career Path, Establish Department of Interdisciplinary Education, Deeper Commitment To Interdisciplinarity, and Greater Control Over Student Admissions.

4. Structure, Increased Role In Decision Making, Compulsory Interdisciplinary Programs, Improved Interdepartmental Cooperation and Communication.

#### Unexpected Results

The surveys reveal a different, unexplained and undefined concept "True Interdisciplinary" was employed by the respondents representing Southwest Missouri, Beloit, City College of New York, Earlham, Eckerd, and Long Beach. This terminology was used with no explanation or definition by respondent. As this expression did not appear in the literature, an attempt was made to contact each of the involved respondents by telephone. Five of the six participants were successfully contacted. Their responses were as follows:

City University of New York:

True interdisciplinary is not undisciplined, as in no foundation. We have an officer appointed to interdisciplinary studies who facilitates interdisciplinary efforts, either ad hoc which they usually are, or more long range. This is usually offered when two or more professors want to get together, or students may propose a program.<sup>2</sup>

California State University, Long Beach:

True interdisciplinary is not bringing to the students presentation after presentation and

match. You do need people at the interface who can point out what activities do take place at the interface and how they take place. We broadly use people who are operating at the interface and are capable of functioning there.<sup>3</sup>

Beloit College:

To accomplish true interdisciplinary programs requires a little more unified approach. Analysis from all the disciplines is involved. Collaboration and cooperation is required from all disciplines, rather than a mix of presentations et seruoatum.<sup>4</sup>

Eckerd College:

One of the ways this is accomplished is through presence of on-campus Academy of Senior Professionals. They focus on intergenerational learning utilizing retired distinguished professionals who become involved in fields of their own interest within the university focus. They play an active role in discussions with faculty members and advice to students on career paths and study paths. They have an interdisciplinary overview from outside the university and from working with the students.<sup>5</sup>

Southwest Missouri:

We utilize a variety of traditional disciplines to accomplish a new interdisciplinary program. We pull from various information centers to create a new study. This term also involves courses that are not departmentally based, something that doesn't belong in a traditional disciplinary organization and has a variety of features and information of traditional disciplines.<sup>6</sup>

"True interdisciplinarity" then appears to be an emerging concept whose parameters are, as yet, unclear but whose characteristics could form the basis of future research.

## Summary

Nearly two decades (1970-1990) elapsed between the Abt (1970) study and the current investigation (1988-1989), and it was reasonable to surmise that the colleges and the universities experienced many changes in interdisciplinary education and programs, hired and retired faculty members and administrators, and otherwise experienced some or many changes encouraged by the development of newer technologies like computers that improved administrative efficiency.

There were differences between the investigative approaches used by Abt in 1970 and this research. For example, Abt's study was original and chiefly concerned with the development of the "Ideal" and "Descriptive" models, respectively. Abt's survey collected information from different colleges and universities with interdisciplinary programs, and they were selected from a 1960s list provided by the OECD, Organization for Economic Cooperation and Development. Abt (1970) admitted conducting the research to investigate many different dimensions of interdisciplinarity, interdisciplinary education, and interdisciplinary programs.<sup>7</sup>

The present study surveyed selected institutions to determine the current areas addressed by interdisciplinary programs (Question 1a), identification of existing interdisciplinary programs (Question 1b), obstacles (Question 2a), remedies for obstacles (Question 2b), and future role of interdisciplinary programs (Question 3).

Areas addressed by interdisciplinary programs include more fields than reported by Abt in 1970. In addition, interdisciplinary programs have increased in scope, focus and the amount of disciplines beyond general education, humanities, social and physical sciences, and research programs at both the undergraduate and graduate levels. Interdisciplinary programs now include core courses as well as courses for degree majors and student seeking special certificates. The programs also address the areas of religion, ethnic groups and civilizations, women's studies, and government and national and international politics.

Some of the same obstacles to interdisciplinary education and programs still exist 20 years after the Abt study, and the obstacles to interdisciplinary education and programs are chiefly domination of traditional departments, staffing, "threat" of interdisciplinary programs to faculty, departmental status, hesitancy to try new programs, distribution of resources, inadequate funding, structural rigidity of the institution, unresolved issues of promotions and tenure, increased demands on the faculty, lack of coordination, student apathy, faculty bias, difficulty of obtaining credit for teaching interdisciplinary courses, salaries, jeopardizing career path, lack of continuity between interdisciplinary programs, providing students the necessary academic background for interdisciplinary courses, superficiality of some courses, affect on the core

curriculum, competition between departments, and lack of growth in student enrollment.

The results reveal that there are major interdisciplinary education issues confronting institutions consisting of the lack of incentives, program assessment, funds, proper allocation of resources, commitment to interdisciplinarity, structure, cooperation and communication, and measures to insure faculty career paths. Other needs are developing more interest and providing faculty with more credit, making joint appointments of faculty from different departments, increasing size of faculty, establishing a department of interdisciplinary education within the institution, permitting greater control over student admissions, heightening the decision making role, and establishing compulsory interdisciplinary programs.

The results show that many institutions perceive interdisciplinarity, interdisciplinary education and interdisciplinary programs as permanent, expanding, spreading to other areas, and "definitely" increasing during the coming years. On the other hand, a small percentage with interdisciplinary programs in place reported dissatisfaction with interdisciplinary education due to unresolved problems.

One unexpected result of the survey was learning that some respondent-institutions (Southwest Missouri, Beloit, City College of New York, Earlham, Eckerd, and Long Beach) qualitatively discriminated between programs as "True

Interdisciplinary" versus others. This term was explained in follow-up telephone interviews as noted earlier in this chapter.



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2. Geoffry Marshall. Telephone interview to determine the intent of the participants survey response.
3. John Beljan. Telephone interview to determine the intent of the participants survey response.
4. David Engerman. Telephone interview to determine the intent of the participants survey response.
5. Assistant to the President. Telephone interview to determine the intent of the participants survey response.
6. Curt Lawrence. Telephone interview to determine the intent of the participants survey response.
7. Supra., Chapter 1.

## CHAPTER V

### FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

Twenty years ago, Abt (1970) perceived the "crisis" in university education as a reaction to "sharp but uncertain changes in the critical components" of higher education in terms of "students, faculty, administration, curriculum, campuses (and) finances" that "threatened established values."<sup>1</sup> Abt postulated that interdisciplinarity already occurred in classrooms, libraries, research laboratories, professorial studies, and at the "dormitory desks of students" that required the "interaction of two or more disciplines."<sup>2</sup> Today, twenty years later, it was found that the exact same problems still existed as unresolved obstacles to interdisciplinarity, interdisciplinary education and interdisciplinary programs at some institutions. On the other hand, as differentiated from observations in the Abt study, the concept of interdisciplinarity in higher education was no longer the issue.

Special instrumentation (Appendix B) was developed for the study in order to investigate the current status of interdisciplinarity, interdisciplinary education, and

interdisciplinary programs at American colleges and universities. The data were collected through questionnaires mailed to the same colleges and universities identified in the Abt study (Appendix C). The respondents consisted of similar officials at the institutions, and they were requested to return the survey questionnaires via a self-addressed, stamped envelope. The data were recorded, tabulated, and listed in appendixes.

The findings of the research are presented and described in this chapter and followed by the study conclusion and recommendations for further research.

### Findings

The research was restricted to the same colleges and universities with interdisciplinary programs identified in the Abt study. Therefore, the completion of the survey questionnaires was accomplished by officials in similar positions of authority at different colleges and universities identified to Abt in 1960 by the OECD, Organization for Economic Cooperation and Development in 1960.

The study investigated the following: (1) areas addressed through interdisciplinary programs, (2) descriptions of existing interdisciplinary programs, (3) major obstacles, (4) recommended needs to overcome obstacles, and (5) perceptions of the future role of interdisciplinary education at the relevant institution.

Areas Addressed by Interdisciplinary  
Programs

Appendix D contains the observations of respondents in the sample to Question 1a: "What areas are being addressed at your institution through interdisciplinary programs?"

It was found that there were more interdisciplinary programs reported than found in the Abt survey. In addition, it was found that some respondents (Southwest Missouri, Beloit, City College of New York, Earlham, Eckerd and Long Beach) had achieved a high degree of discrimination between what appeared to them as "True Interdisciplinary" programs, and, perhaps, other programs that were superficially classified as interdisciplinary in nature. The finding was clearly differentiated from any obtained by Abt (1970) who set out to investigate interdisciplinary education as an "opportunity for reform."<sup>3</sup> Apparently, after two decades, the present findings indicate that reform has occurred in the respondents view.

It was a finding of the research that interdisciplinary programs had increased in scope, focus and in the amount of disciplines included beyond general education, humanities, social and physical sciences, and research programs at both the undergraduate and graduate levels. It was found that interdisciplinary programs included core courses, and courses for degree majors and students seeking special certificates. The programs also addressed the areas of religion, ethnic groups and civilizations, women's

studies; also government, national and international politics.

### Identification of Interdisciplinary Programs

Appendix E lists the interdisciplinary programs reported by respondents at the colleges and universities in response to survey statement 1b: "Identify and briefly describe the interdisciplinary programs that exist at your institution."

Amherst did not respond to the statement. The remaining respondents identified a wide variety of interdisciplinary programs that generally reflected the academic focus of courses of study, undergraduate and graduate degree programs, and the institution.

### Major Obstacles to Interdisciplinary Education

Appendix F contains the observations of the respondents to survey question 2a: "What are the major obstacles to interdisciplinary education that you have observed at your institution?"

It was a finding of the research that obstacles to interdisciplinarity, interdisciplinary education and interdisciplinary programs continue to be reported. For example, Abt found that the forces against interdisciplinarity, interdisciplinary education and interdisciplinary programs

were the absence of interest on the part of faculty and students, lack of relevance, unstructured programs, decline into formalism, duplication of effort, little interdepartmental cooperation and communication, inability of institutions to shift with sociopolitical changes in the environment, entrenched administrative bureaucracy, course requirements, faculty hierarchies, threats to departmental status, "and in general all those things that tend to separate rather than to bring together people interested in solving the same or similar problems."<sup>5</sup>

On the other hand, it was a finding of the present research that the obstacles to interdisciplinary education were natural competition within, between and across departments; lack of coordination; domination of traditional departments; staffing, "threat" of interdisciplinary programs to faculty, maintaining departmental integrity and status, hesitancy to try new programs, superficiality of some courses and their affect on the core curriculum; lack of continuity between interdisciplinary programs; structural rigidity of the institution; inadequate funding and poor allocation of resources; unresolved issues of promotions, bias, tenure, increased demands on the faculty, difficulty of obtaining credit for teaching interdisciplinary courses, jeopardizing career path, salaries; and, student apathy, providing students the necessary academic background for interdisciplinary courses, and lack of growth in student enrollment.

Therefore, it was a finding that the same obstacles to interdisciplinary education and programs still existed after 20 years. However, the findings of the present research were more precise than in the Abt study. It was a finding of the research that the obstacles to interdisciplinary education and programs were chiefly domination of traditional departments, staffing, "threat" of interdisciplinary programs to faculty, departmental status, hesitancy to try new programs, distribution of resources, inadequate funding, structural rigidity of the institution, unresolved issues of promotions and tenure, increased demands on the faculty, lack of coordination, student apathy, faculty bias, difficulty of obtaining credit for teaching interdisciplinary courses, salaries, jeopardizing career path, lack of continuity between interdisciplinary programs, providing students the necessary academic background for interdisciplinary courses, superficiality of some courses, affect on the core curriculum, competition between departments, and lack of growth in student enrollment.

#### Reported Needs to Overcome Obstacles

Appendix G contains the observations of the respondents to survey question 2b: "What is needed to overcome these obstacles?"

It was a finding of the research that Abt's perceptions of "needs" to overcome obstacles to interdisciplinary education and programs were supported by the observations

of the respondents in the present research. Current suggestions included making interdisciplinary courses compulsory, and establishment of a separate department for interdisciplinary education. In addition, it was a finding that there were needs to develop more incentives and measures to assess and evaluate interdisciplinary programs. Moreover, it was found that administrators and departments needed to improve the existing means to obtain funds, reinforce the commitment to interdisciplinarity, and establish better lines of communication and cooperation between departments. Furthermore, it was found that size of faculties should be increased and the teachers made to feel more secure in their career path, provide for more credit to for teaching interdisciplinary courses, and include them in decision making processes--especially concerning student admissions.

#### Future Role of Interdisciplinary Education

It was a finding of the research that the respondents perceived the future role of interdisciplinarity, interdisciplinary education and interdisciplinary programs as permanent, expanding, spreading to other areas, and "definitely" increasing during the coming years. Thus, it was reported that interdisciplinarity, interdisciplinary education, and interdisciplinary programs are permanent forces in the curriculum, and most institutions predict positive growth in the future. On the other hand, it was



found that a small percentage of the institutions with interdisciplinary programs in place reported dissatisfaction with interdisciplinary education due to unresolved problems.

#### Unexpected Finding

It was an unexpected finding of the research that the term "True Interdisciplinary" was employed (Southwest Missouri, Beloit, City College of New York, Earlham, Eckerd, and Long Beach) in order to convey their commitment to interdisciplinary education and interdisciplinary programming. The finding was unusual and unexpected, because the terminology did not appear in the available literature. The finding inferred an admonition describing a state of satisfaction with the technique, and the desire to express the development of the power to discriminate between "traditional" and what is actually an "interdisciplinary" program.

#### Concluding Observations

1. The areas of interdisciplinary education addressed by colleges and universities are core and certificate courses, history, engineering, nursing, criminal justice, humanities, philosophy, general education, science, anthropology, and civilizations. The interdisciplinary programs include studies in the following areas: women, ethics, international, religion, core courses, and courses for

degree majors and students seeking special certificates. Other interdisciplinary programs addressed the areas of religion, ethnic groups and civilizations, women's studies, humanities, social sciences, government and national and international policies.

2. The existing interdisciplinary programs are in the arts, individual and community, literary questions in the Western world, studies (African, American, Afro-American, East Asian, Latin American, Medieval, Russian and Soviet, Social, Letters, Science in Society, Anthropology, Biology, Psychology, Mathematics, Economics, College Honors Programs, Antiquities, Gerontology, Business, Urban and Regional Planning, Languages and Cultures, Nutrition, Geology, English, Political Science, Human Development, Teaching, Marine Science, Speech Pathology, and others (Appendix E).

3. The obstacles to interdisciplinary education confronting institutions are the lack of incentives, program assessment, funds, allocation of resources, commitment to interdisciplinarity, structure, cooperation and communication, and measures to insure faculty career paths. In addition, the other obstacles were natural (human) competition (Abt, 1970) in all the major areas of university structure, administration, and domination of departments across interdisciplinary lines (Dressel et al. 1970; Van Doren, 1943) in the decision making process regarding the

allocation of resources; also, the entrenched structure of the university's formal organization, and the lack of growth in student enrollment that included student apathy or preferences for straight-line courses leading to degrees in fields that guaranteed future employment and success in the "real" world of work after graduation.

4. The needs to overcome obstacles are developing more interest and providing faculty with more credit, making joint appointments of faculty from different departments, increasing size of faculties, establishing a department of interdisciplinary education within the institution, permitting greater control over student admissions, and heightening the decision making role of teachers.

5. Interdisciplinarity, interdisciplinary education and interdisciplinary programs should play a positive role in future curriculum at institutions, and they are expected to expand, spread and increase in the next few years. Few institutions (Southern Methodist University, Bakersfield, Hayward, and Los Angeles) shared doubts about continuing interdisciplinary programs in the future. There was concern for current student interest in narrow career paths which limited the administrative options, but respondents favor interdisciplinary efforts. Therefore, some of the respondents perceived that interdisciplinary programs were important, expanding, and should be a permanent part of most curricula while developing remedial measures to

address and overcome sets of obstacles arising out of dominance and "natural competition" (Cleveland, 1985; Simon, 1973) between traditional departments for status, funds, resources, equity for faculty members, student apathy, and rigid administrative structures.

6. It was an unexpected finding of the research that the term "True Interdisciplinary" was employed by six respondent-institutions in order to convey to this researcher on the survey questionnaire both a high quality and their commitment to interdisciplinary education and interdisciplinary programming. The finding was unusual and unexpected, because the descriptive terminology did not appear in the available literature. The finding inferred an admonition describing a state of experienced satisfaction with the technique, and the desire to express the development of the power to discriminate between "traditional" and what is actually interdisciplinary.

#### Recommendations

After careful review of the present study, the researcher recommends that a similar survey should be conducted to collect measurable, precise statistical data from a wider spectrum of American institutions concerning the identical issues: areas addressed by interdisciplinary programs, obstacles, remedial measures to overcome obstacles, and the future role of interdisciplinary education.

The research findings were general and as open-ended as the survey questionnaire. In other words, neither Abt (1970) nor this researcher had a precise notion of what obstacles or remedial measures to overcome the obstacles, in their hierarchical order of importance, were more important than others in resolving the issues confronting the development, implementation and growth of interdisciplinary education at American institutions.

In order to develop more precise scientific information, this researcher strongly recommends additional study organized to test a null hypothesis of no differences between the self-reported observations of respondent-institutions in three different regions of the United States (Eastern, Midwestern, Western) concerning the hierarchical importance of obstacles and measures to overcome obstacles to interdisciplinary education. The survey questionnaire or instrumentation to collect primary source, statistical data for the recommended research should be developed along lines of the Likert Scale with response categories, as follows: Strongly Agree, Agree, Disagree, Strongly Disagree, No Opinion.

The dependent variables in the recommended instrumentation should reflect the unordered findings of the present research, and they should be stated in the following manner:

1. There are no obstacles to interdisciplinary education.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

2. The major obstacle to interdisciplinary education is departmental dominance.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

3. The major obstacle to interdisciplinary education is faculty bias.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

4. The major obstacle to interdisciplinary education is the lack of interest on the part of administration.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

5. The major obstacle to interdisciplinary education is obtaining funds for interdisciplinary programs.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

6. The major obstacle to interdisciplinary education is faculty hesitancy to try interdisciplinary programs.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

7. The major obstacle to interdisciplinary education is getting equitable salaries for faculty members.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

8. The major obstacle to interdisciplinary education is the allocation of resources.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

9. The major obstacle to interdisciplinary education is the demand on the time of faculty.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

10. The major obstacle to interdisciplinary education is the lack of time for faculty members to prepare lesson plans for interdisciplinary programs.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

11. The major obstacle to interdisciplinary education is the lack of coordination of efforts between departments.

Strongly Agree\_\_ Agree\_\_ Disagree\_\_ Strongly Disagree\_\_  
No Opinion\_\_

12. The major obstacle to interdisciplinary education is the "natural competition" between departments.

Strongly Agree\_\_ Agree\_\_ Disagree\_\_ Strongly Disagree\_\_  
No Opinion\_\_

13. The major obstacle to interdisciplinary education is the lack of growth of student enrollment.

Strongly Agree\_\_ Agree\_\_ Disagree\_\_ Strongly Disagree\_\_  
No Opinion\_\_

14. The major obstacle to interdisciplinary education is student apathy.

Strongly Agree\_\_ Agree\_\_ Disagree\_\_ Strongly Disagree\_\_  
No Opinion\_\_

15. The major obstacle to interdisciplinary education is the structure of the university.

Strongly Agree\_\_ Agree\_\_ Disagree\_\_ Strongly Disagree\_\_  
No Opinion\_\_



16. The major obstacle to interdisciplinary education is faculty bias towards interdisciplinary programs.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

17. The major obstacle to interdisciplinary education is the promotion policy for faculty members teaching subjects in interdisciplinary programs.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

18. The major obstacle to interdisciplinary education is the threat to the core curriculum.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

19. The major obstacle to interdisciplinary education is giving students a good background before allowing them to enroll in interdisciplinary programs.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

20. The major obstacle to interdisciplinary education is staffing interdisciplinary programs.

Strongly Agree\_\_\_Agree\_\_\_Disagree\_\_\_Strongly Disagree\_\_\_  
No Opinion\_\_\_

The researcher reasoned that the recommended instrumentation summarily reflected findings of the study, and the forced-choice nature of the five Likert-type categories would elicit decision making observations by the respondents to 20 variables reflecting characteristics and attributes of identified obstacles to interdisciplinary programs. Furthermore, the same type instrumentation could be developed for remedial measures to overcome obstacles.

The statistical results of the future respondent-institutions to the variables could be statistically processed according to the Chi Square Test of Significance at the 0.05 level, where  $df = (c - 1 = 4) (r - 1 = 2) = 8$ , and  $x^2_{table} = 15.51$ .

Strongly	Agree	Disagree	Strongly	No
Agree			Disagree	Opinion

### Regions

Eastern>

Central>

Western>

The statistical results would enable the measurement of the differences, if any, between the perceptions of respondent-institutions towards the 20 obstacles to interdisciplinary programs (and the supplemental instrumentation to overcoming the obstacles) according to the three regions of the United States. Furthermore, the within- and between-group raw outcomes to variables in both the instru-

mentation could be obtained by processing the data in terms of the Analysis of Variance at the 0.05 level. In addition, the results of the measurements of central tendency inherent to the ANOVA, Analysis of Variance (means, standard deviations, modes, variances), would yield the hierarchical order of importance of the obstacles and remedial measures for the obstacles, respectively.

Therefore, the recommended research would provide college and university administrators, heads of departments, faculty members, and other types of professional educators with vital information concerning the highest to the least important obstacles and remedies to overcome the obstacles.

#### Concluding Thoughts

The heart and soul of this research was the discovery that some very structured and traditionally organized universities in the United States are attempting to reform their organizations. These efforts demonstrate the stirrings of a movement scattered throughout this country toward interdisciplinary approaches to higher education. The movement appears to be a grass roots development, at times occurring outside of the university infrastructure.

The interdisciplinary approach seems particularly well suited to the information explosion; it is a very effective means of bridging gaps between large, well-developed bodies of information that are isolated within disciplinary boundaries. Interdisciplinarity should be an efficient mecha-

nism to discover where information is and to learn how to gain access to it. Interdisciplinary education then serves as a unifying force within the university. It depends on cooperation among disciplines which must result in additional collaboration among professors, students, and administrators.

Another feature seen in this research is the tendency of institutions to build effective and lasting reforms within their areas of interest. Different programs and approaches have been accomplished which reflect the focus of different institutions. It should be remembered that different people as well as different institutions will respond to varying benefits offered by interdisciplinarity. Future interdisciplinary reform should allow for this and recognize individual and institutional comfort zones. Enhancing those areas will provide secure transition into new programs. A corollary is the need for interdisciplinary reformers to respect those who seem to flourish in the closed structure of traditional disciplinary boundaries.

Interdisciplinary advocates must also keep in mind the reality of the status quo. The present career reward systems at universities and colleges work against any new interdisciplinary program. Eventually there must be reform in the reward system in order to encourage more professors to be willing to be risk-takers in developing and improving interdisciplinary education. This can be accomplished by

administrative leadership which encourages interdisciplinary teaching and research.

Overall, the trend can be seen of professors looking to improve and enhance an already well-established system of higher education. An indicator of the strength of their feelings is that these reformers continue to advocate interdisciplinary education even in the face of some strong disincentives. This is an encouraging and optimistic sign for the strength and future of American higher education.

There is a very clear need for administrators to actively encourage and strongly support interdisciplinary efforts. With the university serving a more pluralistic society than evident in the multiversity concept, interdisciplinary education is not just another program, but rather an opportunity for free expression of what the university truly is and can become. Interdisciplinarity then becomes the avenue to augment the disciplines and increase the focus of university research, teaching, and service.

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## APPENDIXES

APPENDIX A

SURVEY COVER LETTER

Dear (Name):

We are conducting a follow-up survey of interdisciplinary teaching and research in American universities which parallels the 1970 Clark-Abt Survey for the Organization for Economic Cooperation and Development's Center for Education, Research and Innovation.

The purpose of the survey is to determine the nature of current college and university interdisciplinary teaching and research programs, their objectives, their means of operation, their results, and the future plan for additional interdisciplinary activities that have been generated. Your institution was selected in the 1970 survey due to your pioneering work in interdisciplinarity.

Please complete as much of the survey questionnaire as possible and send them back to me for processing.

The potential significance of this survey includes the sharing of advances in interdisciplinary teaching and research processes among selected United States universities with other institutions. This survey is being carried out at the same time in the universities and colleges included in the original study, and I expect to have the basis of useful comparison as a result of this survey. Within a few months following completion of the survey, we hope to return to you a summary of our findings which should be useful to you in your own planning of interdisciplinary activities. We appreciate your participation in this educational research effort, and look forward to receiving your completed survey instrument.

Stephen Sexson

APPENDIX B

QUESTIONNAIRE ON INTERDISCIPLINARY  
HIGHER EDUCATION

SURVEY QUESTIONNAIRE ON INTERDISCIPLINARY  
HIGHER EDUCATION

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- 1a. What areas are being addressed at your institution through interdisciplinary programs?
  - 1b. Identify and briefly describe the interdisciplinary programs that exist at your institution.
  - 2a. What are the major obstacles to interdisciplinary education that you have observed at your institution?
  - 2b. What is needed to overcome these obstacles?
  3. What do you see as the future role of interdisciplinary education at your institution?
-

APPENDIX C

LIST OF COLLEGES AND UNIVERSITIES



## LIST OF COLLEGES AND UNIVERSITIES

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Item No.	College or University
1	Austin College, Sherman, Texas
2	Bard College, Annandale on the Hudson, New York
3	Bernard M. Baruch College, 17 Lexington Avenue, New York City, New York
4	Beloit College, Wisconsin
5	Bronx College, 120 East 184th Street, Bronx, New York
6	Brooklyn College, Bedford Avenue & Avenue H, Brooklyn, New York
7	California State College: Los Angeles, California
8	California State College: Bakersfield
9	California State College: Dominguez Hills, 1000 E. Victoria Street
10	California State College: Fullerton, 800 N. State College Boulevard
11	California State College: Hayward, 24800 Hillary Street
12	California State College: Long Beach, 6101 East Seventh Street
13	California State College: Los Angeles, 5151 State College Drive
14	California Polytechnic State University, San Luis Obispo
15	California State Polytechnic College, Kellog-Voorhis, 3810 West Temple Avenue, Pomona
16	California State College: San Bernardino, 5500 State College Parkway
17	University of California at San Diego, La Jolla

- 18 University of Massachusetts, Amherst
- 19 Michigan State University, Lansing
- 20 Mount Holyoke College, South Hadley,  
Massachusetts
- 21 Mount Sinai School of Medicine,  
100th Street & 5th Avenue,  
New York City, New York
- 22 New York City Community College,  
300 Jay Street, Brooklyn, New York
- 23 State University of New York, Albany
- 24 New York State University: Buffalo
- 25 City University of New York, Manhattan
- 26 Joseph S. Murphy - Chancellor - City University  
of New York
- 27 State University of New York: Stony Brook
- 28 University of New Hampshire, Durham
- 29 Oakland University, Rochester, Michigan
- 30 Parsons College, Fairfield, Iowa
- 31 Queensborough Community College, Bayside,  
New York
- 32 Queens College  
65-30 Kissena Boulevard, Flushing, New York
- 33 Raymond College, University of the Pacific,  
Stockton, California
- 34 Reed College, Portland, Oregon
- 35 Richmond College,  
130 Stuyvesant Place, Staten Island,  
New York
- 36 Sacramento State College,  
6000 Jay Street, California
- 37 University of California, Santa Cruz
- 38 Chico State College, California

- 39 City College of New York,  
Convent Avenue & 138th Street,  
New York City, New York
- 40 City College of New York,  
University Graduate Division  
33 West 42nd Street, New York City, New York
- 41 Coe College, Cedar Rapids, Iowa
- 42 Columbia University,  
407 W. 117th Street, New York City, New York
- 43 Earlham College, Richmond, Indiana
- 44 Florida Atlantic University, Boca Raton, Florida
- 45 Eckerd College, Saint Petersburg
- 46 Fresno State College,  
Shaw & Cedar Avenue, California
- 47 Goddard College, Plainfield, Vermont
- 48 Hofstra University, Hempstead, New York
- 49 Community College,  
260 East 161st Street, Bronx, New York
- 50 Humboldt State College, Arcata, California
- 51 Hunter College,  
695 Park Avenue, New York City, New York
- 52 John Jay College of Criminal Justice,  
315 Park Avenue, South  
New York City, New York
- 53 Kalamazoo State College, Michigan
- 54 Kingsborough Community College,  
Oriental Boulevard, Brooklyn, New York
- 55 Herbert H. Lehman College,  
Bedford Park Boulevard, West  
Bronx, New York
- 56 Borough of Manhattan Community College,  
134 West 51st Street, New York City, New  
York
- 57 San Diego State College,  
5402 College Avenue, California

- 58 San Fernando Valley State College,  
18111 Nordhoff Street, Northridge,  
California
- 59 San Francisco State College,  
1600 Holloway Avenue, California
- 60 San Jose State College,  
125 South Seventh Street, California
- 61 University of Santa Clara, California
- 62 Smith College, Northampton, Massachusetts
- 63 Sonoma State College,  
1801 East Cotati Avenue  
Rohnert Park, California
- 64 Southern Methodist University, Dallas, Texas
- 65 Southwest Missouri State College,  
Springfield, Missouri
- 66 Stanislaus State College,  
800 Monte Vista Avenue, Turlock, California
- 67 Staten Island Community College,  
Ocean Terrace, New York
- 68 Stephens College, Columbia, Missouri
- 69 University of Toledo, Ohio
- 70 Wesleyan University, Middletown, Connecticut
- 71 Case Western Reserve University, Cleveland, Ohio
- 72 University of Wisconsin, Green Bay
- 73 York College,  
158-11 Jewel Avenue, Flushing, New York
- 74 Wayne State University, Detroit, Michigan
- 75 University of California at Irvine
- 76 University of Pittsburgh,  
Pittsburgh, Pennsylvania

APPENDIX D

RAW RESPONSES TO SURVEY QUESTION 1A:  
AREAS ADDRESSED AT INSTITUTIONS

## RAW RESPONSES TO SURVEY QUESTION 1A:

## AREAS ADDRESSED AT INSTITUTIONS

Item No.	College or Univ.	Written Responses
1	Kalamazoo	General Education
2	Wesleyan	Studies: African, American, Afro-American, East Asian, Latin American, Medieval, Russian & Soviet, Social, Letters. Science in Society, Anthropology, Biology/Psychology, Math/Economics.
3	Austin	Eastern Civilization, Contemporary Issues, Scientific Models
4	Florida Atlantic	Latin American, Humanities, Social Science, Women's, Urban & Regional Planning, Govt. & Political Reporting
5	Sonoma State	(See attached)
6	Southwest Missouri	True Interdisciplinary Programs, International Studies, Individualized Programs
7	Queens College	Studies: Ethnic, Area, Religious, Women's and Labor
8	Beloit College	(See attached): One unit of Interdisciplinary Studies required of all students for graduation
9	Southern Methodist U.	Core Courses (see catalog)
10	Amherst	Degree majors cross traditional disciplines; minor receive certificate in interdisciplinary program. Certain non-degree/non-certificate programs. Engineering Management, Molecular & Cell Biology, Biotechnology, Neuroscience, Surface & Materials Sciences

- 11 City Univ. of New York (a) One or combined disciplines;  
(b) Concentrations and Certificate Programs--Studies: Medieval and Women's
- 12 State Univ. of New York Minor: Biotechnology, Gerontology, Packaging, Business, Agribusiness
- 13 Earlham Nine Interdisciplinary Programs: African, African-American, International, Japanese, Management, Museum, Peace & Global, Education, Women's, Humanities
- 14 Bard College Studies: American, Women's, History & Philosophy of Science, Community/Regional, Environmental
- 15 Eckerd College Core general education program, interdisciplinary major & electives
- 16 Toledo, Univ. (a) Bachelors: Engineering Physics;  
(b) Masters in Engineering Science;  
(c) Engineering Research; and  
(d) Criminal Justice, Administrative Services, Healthcare, Nursing Home Administration, or Individualized
- 17 California Polytechnic State Univ. General Education
- CALIFORNIA STATE--
- 18 Bakersfield Studies: Liberal, Child Development, Petroleum, Land, Criminal Justice, Environmental, General Education
- 19 San Bernardino Humanities, Social, Ethnic, Human, Development, Liberal, American
- 20 Fullerton Studies: Liberal, Sciences & Social Sciences, Humanities & Arts, Philosophy, History, Peace
- 21 Hayward Current topics in our General Studies Program: Humanities, Advertising, Communication, Environmental, Photography, Urban, Ethnic, Women's

- 22 Long Beach General Education requirement for all students: 6 units upper division in specially designed interdisciplinary courses in wide range of subjects. Special degree and certificate programs.
- 23 Los Angeles Studies: Women's, Ethnic, Gerontology, Environmental, Public Policy, Administration



APPENDIX E

SAMPLE RESPONSES TO SURVEY QUESTION

NO. 1B: DESCRIBE EXISTING PROGRAMS

## SAMPLE RESPONSES TO SURVEY QUESTION

## NO. 1B: DESCRIBE EXISTING PROGRAMS

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Item No.	College or Univ.	Written Responses
1	Kalamazoo	General education is a freshman- & sophomore-year program with faculty from humanities and social sciences; 3 courses expected: Arts, Individual & Community, and Literary Questions in Western World.
2	Wesleyan	Studies: African, American, Afro-American, East Asian, Latin American, Medieval, Russian & Soviet, Social, Letters. Science in Society, Anthropology, Biology/Psychology, Math/Economics.
3	Austin	Three courses (Studies): History of Western Culture (required), Contemporary Policy, Latin American, Advanced Seminars of the College of Honors Program.
4	Florida Atlantic	Some are formal majors and others are collection of courses leading to a certificate of speciality but usually attached to a major. All secondary education is located in the liberal arts colleges and includes courses in Education.
5	Sonoma State	(See attached)
6	Southwest Missouri	Antiquities: Study of ancient worlds (language, literature, history, architecture, thought & religion). Gerontology: Study of care of aged (health, psychology, dietetics, recreation & sociology). International: Degree programs (business & relations). Individualized: Student designed & faculty monitored. Urban & Regional Planning (economics, geography, regional, sociology, political science).

- 7 Queens College Studies: African, Byzantine, Modern Greek, East Asian, Irish, Italian-American, Jewish, Latin-American Area, Puerto Rico, Religious, Women's, Labor.
- 8 Beloit College (See attachment, pp. 140-147 catalog)
- 9 Southern Methodist See attached
- 10 Amherst No response
- 11 City Univ. of New York See attached pages from The Graduate School & Univ. Center Bulletin, and descriptions of two Certificate Programs
- 12 State Univ. of New York (Minor) Biotechnology: genetic engineering, immunochemistry, tissue culture. Gerontology: courses from bio-sciences, physical education, recreation administration, Psychology & Human Development, Social Sciences, Food Sciences & Nutrition, Home Economics. Packaging: Chemistry, Food Science & Nutrition, Industrial Technology, Physics. Masters in Business & Agribusiness Specialization: Agricultural Management courses in place of 20 units elective coursework.
- 13 Earlham College Nine Programs (Studies)--  
African/Afro-American: Institutions, perspectives, history, English, economics, geology, political science & sociology/anthropology.  
Human Development & Social Relations: Integrates anthropology, biology, education, philosophy, psychology & sociology.  
Japanese: Language & culture, history, political science, psychology, religion, anthropology, economics, fine arts.  
Management: Public, private, not-for-profit, economics, political science, mathematics, philosophy, anthropology, and Earlham Institute for Executive Growth.

Museum. Management of museums: history, philosophy, management, biology, geology, art.

Education. Teacher Certificate: Education, sociology, anthropology, philosophy, psychology, biology & history.

Women's. Cultural, racial, economic, sexual, and affectional aspects of womanhood. English, psychology, biology, history, classics, philosophy & anthropology.

Miscellaneous Interdisciplinary.

- |                    |                                    |  |
|--------------------|------------------------------------|--|
| 14                 | Bard College                       | Concentration on individual cross-departmental, divisional interests. 1-year seminar required of freshmen (2 terms): 1st, Athens 5th Century B.C.; 2nd, Revolutionary Ideas, 1776-1859.  |
| 15                 | Eckerd College                     | Studies (American): management, environmental, human resources. (International): business, marine science, philosophy of religion. Western Heritage--Judaeo-Christian Perspectives on Contemporary Issues for seniors.                 |
| 16                 | Toledo Univ.                       | Rehabilitation Program crosses 5 departments. Speech Pathology involves Art, Science & Education. (See Graduate Bulletin.) Students can graduate with courses in as many as 5 colleges and/or 20 departments.                          |
| 17                 | California Polytechnic State Univ. | 32 quarter units that subsume General Education requirements in Humanities & Social Sciences. Each 4-unit course sequenced in 8-course continuum over 2-1/2 years. Team-taught courses emphasizing thematic approach.                  |
| CALIFORNIA STATE-- |                                    |  |
| 18                 | Bakersfield                        | Elementary school teaching majors use Liberal Studies and Child Development programs. Three others are professional oriented using wide variety of disciplines for coursework. 20% of General Education courses are interdisciplinary. |

- 19 San Bernardino National Security combines political science, history, geography, Latin-America, communication, environmental, Human Services, & individual self-designed. New minor in Women's Studies is flourishing with vigorous leadership and committed faculty. New faculty position allocated for 1989 Ethnic Studies. Multicultural thrust to new General Education Program. Revision & major expansion of General Education to 86 quarter units & limit on size of majors.
- 20 Fullerton Liberal studies are interdisciplinary: sciences, social sciences, and humanities and arts. Integrate liberal arts tradition (trivium: logic, rhetoric, grammar) & quadrivium (music, arithmetic, geometry, astronomy). Combines courses in political science, intellectual history, & natural and social sciences, humanities & arts. Core courses or Studies: Historical Dimension of Liberal Studies, Methods of Inquiry, Humanities/Arts, Science, Social Science, Communication Processes.
- 21 Hayward Various interdisciplinary minors: Studies: International, American. General Studies proposed by individual faculty must be interdisciplinary, cross-cultural, contemporary. Humanities is team-taught involving all arts & humanities & history.
- 22 Long Beach Studies: Liberal, International, Linguistics. Certificate Programs (studies): American, Biomedical Art, Music Therapy, Medieval & Renaissance, Mediterranean, Environmental, Asian and Asian-American, Computer, Legal, Russian & East European, Urban & Regional.
- 23 Los Angeles (See Table 1, Item 23)

APPENDIX F

SAMPLE RESPONSES TO SURVEY QUESTION

NO. 2A: OBSERVED MAJOR OBSTACLES

## SAMPLE RESPONSES TO SURVEY QUESTION

## NO. 2A: OBSERVED MAJOR OBSTACLES

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Item No.	College or Univ.	Written Responses
1	Kalamazoo	Cost and major faculty asked to drop major courses & pick up General Education courses. Some major courses replaced through part-time appointments.
2	Wesleyan	Faculty flow and flickering interest in particular programs. On the whole, the enthusiasm for interdisciplinary programs is very great and nearly irrepressible.
3	Austin	Staffing tensions with "threats" to departmental curriculum.
4	Florida Atlantic	None
5	Sonoma State	Disciplinary faculty often accuse interdisciplinary approaches of being superficial.
6	Southwest Missouri	Faculty hesitancy to try different approaches and administrative pressures on reallocation of resources.
7	Queens College	Funding for programs.
8	Beloit College	There is a general receptivity to expanding such offerings, and no major obstacles. There may be, at times, however, greater faculty loyalty to departments making it difficult to staff some interdisciplinary offerings.
9	Southern Methodist	School structure of University.

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- 10 Amherst Individual departments dominate. Organization of interdisciplinary programs cuts across departmental and college lines. Consequences are: organization of curricula and teaching offerings (undergrad/grad) required extensive consultation with a variety of deans and departments. Problems in clearly crediting department and college for teaching, and contributions made by faculty. Promotion and salary increases determined by departments, and they do not necessarily look favorably on interdisciplinary activities, for these may actually remove the faculty member to some extent from the parent department.
- 11 City Univ. of New York There are no major bureaucratic obstacles. Occasionally, a discipline will lack a course rubric that permits ad hoc courses, but this creates only a temporary delay while such a rubric is developed and approved.
- 12 State Univ. of New York (1) Faculty members perceive career paths lie in established academic departments, and they're reluctant to risk moving out of them. (2) Resources are allocated along departmental lines, and it's difficult to make room in the network for nondepartmental programs.
- 13 Earlham College Supportive but with obstacles. Increased demands on faculty; insufficient time for course preparation; traditional departments; secondary priority; coordination; redundancy.
- 14 Bard College (1) Giving students background for interdisciplinary work; (2) continuity of core courses, given staffing needs of each department.
- 15 Eckerd College The need and desire for faculty to commit their time to disciplinary work.
- 16 Toledo Univ. Lock-step nature of traditional academic degree programs--especially professional and associate curric-



ula. Rigidity of traditional academic department. Lack of faculty willing to teach interdisciplinary courses. Governance, resources, tradition. Complications when crossing departmental lines.

17 California  
Polytechnic  
State Univ.

Departmental organization complicates development of integrated, core curriculum in General Education. Gen. Ed. competes for attention with the major and minor programs in discipline.

CALIFORNIA STATE--

18 Bakersfield

Award of work credit to faculty. Bias of most faculty. Primary allegiance of faculty to discipline. Pressure of discipline on faculty.

19 San  
Bernardino

Difficulty with tenure and promotional process for faculty with nontraditional interests. Lack of focus, planning, coordination campus-wide. Low priority. Student apathy (antipathy) and narrow job-related interests.

20 Fullerton

Basic structure (schools 7 departments) and policies and procedures maintain atmosphere of "sovereign nations" that restrict the development and existence of interdisciplinary study. On our campus, one might swim against the current to engage in such activity.

21 Hayward

Little enrollment growth coupled with enrollment declines in Arts, Letters & Sciences, plus growth of professions. Lack of student interest. Students have strong professional orientation.

22 Long Beach

Team teaching, essential in some interdisciplinary programs, is very expensive in a system such as ours that is completely formula driven.

23 Los Angeles

Governance & budgetary structure when programs cross school lines. Faculty understanding of interdisciplinary approach.

APPENDIX G

SAMPLE RESPONSES TO SURVEY QUESTION

NO. 2B: PROGRAMS NEEDED TO

OVERCOME OBSTACLES

## SAMPLE RESPONSES TO SURVEY QUESTION

## NO. 2B: PROGRAMS NEEDED TO

## OVERCOME OBSTACLES

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Item No.	College or Univ.	Written Responses
1	Kalamazoo	Increase size of faculty.
2	Wesleyan	There are not enough obstacles.
3	Austin	Incentives & summer money to prepare value given to such teaching in personnel evaluation.
4	Florida Atlantic	No response
5	Sonoma State	Outcomes assessment mechanisms to demonstrate the validity of the interdisciplinary approach.
6	Southwest Missouri	Better funding on State level, and more aggressive leadership on campus.
7	Queens College	More adequate funding; greater awareness on the part of students.
8	Beloit College	Additional faculty with commitment to interdisciplinary approach, and additional funding for staffing and support.
9	Southern Methodist	No response
10	Amherst	Develop a faculty which has a genuine desire for interdisciplinary activities, so that rewards and recognition are appropriately made. One needs to have a careful course-accounting programs in place so that proper credit is given to a faculty member even though the teaching may not be in his/her home department. Some measure of reward and recogni-

tion offered through interdisciplinary program to compensate for losses which may occur in parent department.

- |    |  |   |
|----|--|---|
| 11 | City Univ.<br>of New York                | No response   |
| 12 | State Univ.<br>of New York               | (1) Identification of sustainable career path outside traditional department. (2) Identification of means by which resources can be allocated outside departmental lines, with long-range assurance that resources will continue. |
| 13 | Earlham<br>College                       | Creation of "Division of Interdisciplinary Studies" parallel to Humanities, Social & Natural Sciences Divisions with formal Chairman, meetings, allocation of various faculty members' positions.                                 |
| 14 | Bard College                             | (1) Possibly more structure in interdepartmental programs; (2) greater commitment of faculty resources--difficult in a small college.   |
| 15 | Eckerd<br>College                        | Additional staffing & development of faculty appreciation for importance.   |
| 16 | Toledo Univ.                             | Commitment from administration and develop awareness to solve problems. Allowing departments to have responsibility for student admissions into programs. There is no support.  |
| 17 | California<br>Polytechnic<br>State Univ. | Continued efforts to encourage faculty to examine general education as having a particular educational mission to investigate human issues, with value of interdisciplinary approaches as necessary to understand complex ideas.  |

CALIFORNIA STATE--

- |    |             |   |
|----|-------------|---|
| 18 | Bakersfield | Collective faculty must decide what interdisciplinary instruction is to occur. Obstacles can be temporarily overcome. |
|----|-------------|---|

- 19 San Bernardino Joint appointments between departments: science/education & Communication/marketing. Special financial support for coordination and operations.
- 20 Fullerton Authorization of interdisciplinary academic unit to function in the same way as a department. Faculty would be adjunctly related to units with the right to act as other academic units (sponsor courses & sets of curricula leading to degrees).
- 21 Hayward Tighten General Education requirements to compel or encourage students to take interdisciplinary & liberal arts courses.
- 22 Long Beach Adequate funding.
- 23 Los Angeles Creative administrative & budgetary structures. Desire to overcome difficulty by involved faculty.

APPENDIX H

SAMPLE RESPONSES TO SURVEY QUESTION

NO. 3: FUTURE ROLE OF INTER-

DISCIPLINARY EDUCATION

## SAMPLE RESPONSES TO SURVEY QUESTION

## NO. 3: FUTURE ROLE OF INTER-

## DISCIPLINARY EDUCATION

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Item No.	College or Univ.	Written Responses
1	Kalamazoo	Over the next 5 years Gen'l. Education will continue to be our primary use of interdisciplinary education.
2	Wesleyan	Spreading.
3	Austin	I believe our core curriculum is firmly in place. This past year we celebrated the 30th anniversary of interdisciplinary study. While the courses have been extensively revised over the years, they remain a distinctive feature of our curriculum.
4	Florida Atlantic	Will continue to carefully develop and nurture specially selected programs as nominated by the faculty.
5	Sonoma State	The Hutchins School is well established, and will continue as a viable option within the institution.
6	Southwest Missouri	Very important. Maintaining with some growth possible in International Studies, and involvement in General Education.
7	Queens College	The interdisciplinary programs provide the innovative approaches and fill gaps in the curriculum.
8	Beloit College	Expanding.
9	Southern Methodist	At least one multi/interdisciplinary experience will continue to be required.

- 10 Amherst We believe that some of the most lively and important developments, in the sciences and social sciences and humanities, occur at interfaces between disciplines. Consequently we expect to see a multiapplication of interdisciplinary programs in the years ahead.
- 11 City Univ. of New York 95% students in Graduate Programs. Certificate mechanism encourages development of other interdisciplinary programs. Currently developing Certificates in studies: Modern German, Renaissance, Italian-American, Cognitive Science. Certificate mechanism provides flexibility and maintains essential elements of doctoral study.
- 12 State Univ. of New York Growing against great resistance. The causes in Table 4, Item No. 12. Pressure of need for interdisciplinary programs in areas as biotechnology and gerontology will slowly push them into the curriculum.
- 13 Earlham College Bright. Healthy & stable. Evaluation of studies as majors or minors. Increasing number of interdisciplinary courses. Maintains own intellectual vitality; integral to mission of college; had developed endowed Chair: Multi-Disciplinary Studies.
- 14 Bard College Will continue to be important. Give students wide opportunities for analysis & interaction of cultural, intellectual, political, and social forces. Role in public education.
- 15 Eckerd College Will continue as central role in academic program; particularly in Education Program and selective majors.
- 16 Toledo Univ. Must receive increased attention. More programs; must become interdisciplinary in nature. Concept offers way to educate students and break current cycle of vocationalism and selection of majors "leading to a



job." College of Engineering has established a balance of interdisciplinary activities that serve well for foreseeable future.

- 17 California Polytechnic State Univ. Future efforts supported by administration. Exploring possibilities of more interdisciplinary courses. IGE Program is nationally recognized. Need discussion on interdisciplinary courses.

CALIFORNIA STATE--

- 18 Bakersfield Further contraction of interdisciplinary instruction and programs.
- 19 San Bernardino Educational policy committee discussing need for formal administrative structures, policies & procedures for non-departmentally organized programs, centers & institutes. Increasing cooperation between Schools of Education, Business, Arts/Sciences to develop programs. Many applied research centers reject being formed.
- 20 Fullerton Increased support for interdisciplinary activity. Integrity of university depends on it! Pending discussion of requiring a senior capstone seminar of all of our students will have us addressing the issues.
- 21 Hayward Very small. Pendulum of student interest has swung widely in the past 2 decades, and will probably again.
- 22 Long Beach Interdisciplinary studies are here to stay--we hope to flourish in spite of budgetary restraints.
- 23 Los Angeles Some, but not significant increase in interdisciplinary offerings.

VITA

Stephen B. Sexson

Candidate for the Degree of  
Doctor of Education

**Thesis:** A STUDY OF INTERDISCIPLINARY PROGRAMS IN SELECTED  
INSTITUTIONS OF HIGHER EDUCATION

**Major Field:** Higher Education

**Biographical:**

**Personal Data:** Born May 29, 1948, in Silver City, New Mexico, the son of Dale and Claudean Sexson. Married to Barbara Davis in May, 1968; two children, David and Linda.

**Education:** Graduated from Burroughs High School, Burbank, California, June, 1966; received a Bachelor of Arts degree from Pepperdine University in December, 1969, with a major in Rhetoric and Public Address; received a Master of Arts degree from Pepperdine University in August, 1975, with a major in Public Communication; completed the requirements for the Doctor of Education degree with a major in Higher Education Administration from Oklahoma State University in December, 1990.

**Professional:** Elementary Teacher, South Bay Community Christian School, Redondo Beach, California, 1969-70; Elementary Teacher, Yucca Valley Elementary School, Yucca Valley, California, 1971-77; Corporate Trainer, Paula Stringer Company, Dallas, Texas, 1978-80; Elementary Teacher, Dartmouth Elementary School, Richardson, Texas, 1980-82; High School Teacher, Allen High School, Allen, Texas, 1982-83; College Instructor, Oklahoma Panhandle State University, Goodwell, Oklahoma, 1983-86, Elementary Teacher in special school for at-risk students, 96th Elementary School, Los Angeles, California, 1987-present.