# **Briefing Paper**

# Disciplines in Combination: Interdisciplinary, Multidisciplinary, and Other Collaborative Programs of Study

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# COUNCIL OF ARTS ACCREDITING ASSOCIATIONS

National Association of Schools of Art and Design National Association of Schools of Dance National Association of Schools of Music National Association of Schools of Theatre

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# **PREFACE**

The Council of Arts Accrediting Associations is a joint, *ad hoc* effort of the National Association of Schools of Art and Design, the National Association of Schools of Dance, the National Association of Schools of Music, and the National Association of Schools of Theatre. The Council works with matters of general concern to the arts community in higher education, with particular focus on the issues and policies affecting instructional quality and accreditation.

The term "unit" as used in this document indicates an entire art/design, dance, music, or theatre educational program of an institution. Thus, in specific cases, "unit" refers to free-standing institutions; in other cases, it refers to departments or schools that are part of larger institutions.

Please note: The purpose of this paper is to organize ideas and encourage thought, not to establish accreditation standards or inflexible positions. The ideas and suggestions presented herein represent the best information and analysis available at the time of completion. Recommendations should be used as the basis for planning only after careful consideration has been given to current and prospective local conditions.

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# Disciplines in Combination: Interdisciplinary, Multidisciplinary, and Other Collaborative Programs of Study

## **BASICS**

The proliferation of interdisciplinary programs in the past three decades may seem to reflect a new, even revolutionary, approach to education, but the underlying motivation is as old as the ancient ideal of the unity of knowledge. The emergence of discrete academic "disciplines" at the end of the nineteenth century quickly stimulated corresponding attention to integrating principles. Throughout this century attempts have been made to counter the fragmentation that can result from overemphasis on specialization. Although the increasing complexity of both science and society has made specialization necessary, and although the arts and humanities have often followed the specialized work patterns of science, today complexity and specialization are not enough. Even complexity and specialization channeled by generic technique are not enough. Today's problems demand creative and flexible applications of knowledge and skills to both broad and specific challenges in professional, civic, and personal realms. Various mixtures and balances of specialized and holistic perspectives are needed to address specific concerns at different places and times.

Thus, there are many motivations and applications for integrated study and research. Developments in science, demanding societal problems, concerns in the workplace, and the multiple needs of individuals in a complex environment have all given rise to collaborative academic programs which have become disciplines in their own right: biophysics, urban planning, and business management, for example. The same can be said of acoustics, the arts therapies, arts management, industrial design, and many others, including K–12 teacher education in art, dance, music, and theatre. In higher education, the relationship between professional preparation and liberal education creates additional challenges, perennially raising questions of values, content, and method. Discussions about strengthening and extending various means of combining disciplines are becoming more common and more intense. These explorations and the policies resulting from them will influence the future of higher education. Most important, they will profoundly influence what students know and are able to do.

The separate disciplines have been highly successful in providing content, language, and methodologies that enable understanding and advancement of knowledge. In-depth work in any one discipline naturally touches the work of other disciplines. However, there is a difference between natural affinities and integrations that support a single perspective, and more structured collaborations that create multiple perspectives. Some degree of competence in two or more disciplines is a prerequisite for substantive collaborative study, which requires not only breadth and depth of knowledge and skills, but also sufficient fluency to compare, correlate, and integrate various subject matters and intellectual approaches. The methodologies of different disciplines, the unique viewpoints they afford, and the particular knowledge gained from each remain the province of the diverse fields until they are used jointly to bring more comprehensive insight to a question, problem, or subject. Synthesis, usually deemed an essential element of interdisciplinary programs, implies mastery of two or more subjects sufficient to do meaningful work with complex synergies. Combined discipline programs that build on firm disciplinary foundations, or which provide comparable foundations in their own right, are unlikely to be viewed as intellectually shallow or pedagogically suspect, charges which have long been levied at many interdisciplinary courses and curricula.

The proliferation of interdisciplinary studies on campuses across the country, their popularity with students, and the possibilities for both substantial intellectual work and pedagogical pitfalls, require careful consideration of the concepts and values basic to these programs. It is the purpose of this document to explore the issues, to provide analysis, and to promote careful thinking in local contexts. The document does not propose specific programs or solutions. These will vary according to the needs and objectives of each educational institution. Neither the disciplinary nor the collaborative approach is inherently good or bad; their respective values depend on local contexts, on their appropriateness for specific purposes, and the effectiveness with which they are pursued. The discussion that follows seeks to outline issues and raise questions that will enable decision-makers to evaluate proposals and approaches in their own institutions.

### ISSUES AND IMPLICATIONS FOR DECISION MAKERS

#### **Definitions**

Disciplines can be combined in many ways. Thus, the range of inquiries that cross traditional boundaries has given rise to a fairly complicated terminology. Because goals and activities can be vastly different, agreement on terminology has assumed great importance. The following definitions are based on those found in *Interdisciplinarity: Problems of Teaching and Research in Universities*, published by the Organization for Economic Cooperation and Development (OECD) in 1972, and continue to be the most widely accepted by those considering various levels of integration in academic programs:

**Discipline** — A specific body of teachable knowledge with its own background of education, training, procedures, methods, and content areas.

**Multidisciplinary** — Juxtaposition of various disciplines, sometimes with no apparent connection between them (for example, music + mathematics + history). The distribution of course work in the humanities, social sciences, and sciences found in most undergraduate curricula could be described as multidisciplinary.

**Pluridisciplinary** — Juxtaposition of disciplines assumed to be more or less related (for example, mathematics + physics, or French + Latin + Greek = "classical humanities" in France). A collection of courses satisfying distribution requirements in the humanities would most likely be pluridisciplinary.

*Crossdisciplinary* — Imposition of the approaches and axioms of one discipline on another. A literature course that analyzed a novel by utilizing the musical structure of exposition, development, and recapitulation would be crossdisciplinary.

Interdisciplinary — An adjective describing the *interaction* among two or more different disciplines. This interaction may range from simple communication of ideas to the mutual integration of organizing concepts, methodology, procedures, epistemology, terminology, data, and organization of research and education in a fairly large field. An examination of how the ideals of the Enlightenment had influence on and were synthesized in 18<sup>th</sup>-century literature and dance would be interdisciplinary. An interdisciplinary group consists of persons trained in different concepts, methods, data, and terms organized into a common effort on a common problem with continuous communication among the participants.

**Transdisciplinary** — Establishing a common system of axioms for a set of disciplines. For example, anthropology considered as "the science of human beings and their accomplishments."

Throughout this document, the term "collaborative" is used to refer to disciplines in combination without specifying the level of integration. It is important to remember that each form of collaborative study is valuable when applied in appropriate contexts. Given the constant, but often casual use of the above terms, it seems prudent to remember:

- The presence and level of integration are the determining factors in accurate and effective use of
  these terms. Some require integration, some do not. It is important that the term used to indicate
  collaborative programs accurately and fairly reflect the skills and the content appropriate to the
  endeavor.
- The term "interdisciplinary" is propounded everywhere as a solution to a broad range of educational concerns. The positive image "interdisciplinary" or associated terms may project at present should not lead to indiscriminate or inaccurate use. Intellectual integrity will transcend promotional expediency when "interdisciplinary" has been discarded for another buzzword, and serious collaborative issues remain.
- Collaborative modes of inquiry may or may not best serve a specific situation. Goals and objectives should determine choices about disciplinary or collaborative approaches in course work, projects, and curricula as a whole.

### **Goals and Objectives**

There are many purposes and contexts for studies that combine disciplines. Collaborative programs may serve as an introduction to general knowledge or to a specific subject. They may constitute the majority of a student's work, or they may serve as a "capstone experience" for those in both traditional and nontraditional programs. They may give nonmajors an introduction to a range of knowledge and perspectives, or they may give majors and professional students insight and understanding beyond the usual scope of their study. Individual courses may be developed on a campus-wide scale, often as freshman or senior colloquia, or they may be part of departmental programs. In some universities, programs based on disciplinary combinations can be found in semi-autonomous colleges. More common are programs that offer a specific focus within an established discipline, or special majors constructed from the offerings of disparate departments. Whatever the context, development of content, pursuit of the program, and final assessment will depend on a clear understanding of what students should know and what they should be able to do as a result of their effort.

To some extent, each collaborative program emphasizes either content or process. In the first, emphasis is on the relationship among specific bodies of knowledge and skills, in the second, on procedures for making one or more types of combinations. Determining the point or points at which each emphasis is most appropriate will depend upon the goals of specific exercises, projects, courses, programs and even entire curricula. As these goals and their concomitant objectives are being determined, the following concepts should be considered:

- The integration and synthesis which characterize true interdisciplinary study necessitate competence in more than one discipline. It is therefore important to consider the means for developing or assuring the requisite preparation for specific interdisciplinary encounters.
- Under-preparation of students combined with over-emphasis on process leads to the sacrifice of content for exposure to method. The educational result is experience with projects at the expense of in-depth knowledge, skills, and competence. One can be given food but not taught to fish or even that fish is food.

Arts units, like schools of engineering, but unlike schools of law or medicine, often face the challenge of providing intense professional preparation and liberal education in the same context. Collaborative studies

may, therefore, be particularly appealing from the standpoint of time, facilities, faculty, and financial resources. There is another important positive: the cognitive skills of critical thought, creativity, analysis, and synthesis are central to both general and professional education. Given these commonalties, decisions should reflect thoughtful attention to the content-process relationship.

# The Interdisciplinary Character of the Arts Disciplines

The arts are complex subjects. It might be argued that each art form is in itself interdisciplinary, involving the constant interdependence of creation, performance, analysis, and history. As each of these aspects has become more specialized and as subspecialization has developed, it has become possible for a student to master knowledge and skills critical to each area without learning to make conscious connections among them. The condition raises important questions about course and curriculum development.

- It is possible for the overall curriculum of an arts unit, whether or not it includes specific collaborative programs, to encourage and enable connections among creation, performance, analysis, and history.
- It is important that students have the example of faculty making these connections in their own artistic and scholarly lives, as well as in their teaching.
- These connections are not often made automatically, and it is important to consider how they
  might best be encouraged. The relationship between parts and wholes is a critical matter for
  education, and indeed, a basic question in all artistic projects. It seems, then, that presenting this
  relationship in multiple dimensions and contexts is particularly appropriate for future arts
  professionals.

# The Arts Together; The Arts and Education

Correlations among the various arts disciplines provide almost unlimited possibilities for different types of collaborative study and experience. These may be theoretical or historical, or applied, as in opera production; they may be comparative or integrative or somewhere in between. Important connections can also be made with the humanities, social sciences, mathematics, and sciences. These broader associations may be more difficult to develop and implement, but they may have important consequences not only in terms of knowledge and skills, but in the understanding and building of culture. For example, all would benefit from exploring how the *idea* of technical means influences culture, this being different from but related to learning to use specific technologies and techniques.

A collaborative approach popular in current discussions about K-12 education and teacher preparation involves using the arts to teach other subjects. Using the rhythmic organization of music to teach fractions is one such example. While the arts can be useful in this respect, it is critical to recognize that such art-asmeans applications are not equivalent to substantive arts instruction, and that exposure to the first cannot substitute for the second. Again the issue is honesty about purposes, priorities, and goals for student achievement in specific circumstances. We must be careful to ensure that otherwise excellent collaborative uses of the disciplines do not produce false images or promote superficiality.

# **Faculty Issues**

The research, program, development, teaching, evaluation, and professional communication required to offer effective collaborative studies pose special challenges to faculty members. These tasks are outside the orientation and experience of many faculty. Problems arise when they must contend with unfamiliar subject matter, different intellectual approaches and techniques, new pedagogical methods, disciplinary biases, and lack of support from colleagues and administrators. Academia and most professions still reward specialized knowledge. This value and reward system produces a challenging context for

individuals who seek or are asked, perhaps for the first time, to venture into areas beyond their specialty. To do so requires large measures of creativity and curiosity, willingness to be a learner as well as a teacher, and patience.

- It has been suggested that the faculty most likely to succeed in interdisciplinary enterprises are those who are broadly educated, "possessing a high degree of ego strength, a tolerance for ambiguity, above-average initiative and assertiveness, and a fairly well-developed understanding of what is involved in interdisciplinary work before undertaking it."
- Venturing beyond a traditional discipline involves either the acquisition of new knowledge and skills or collaboration with a colleague who already possesses them. Accustomed to the role of expert, faculty may feel vulnerable when they venture beyond the realm of their own expertise. Accustomed to a high degree of independence, they may also resist collaboration. On the positive side, the exploration of new directions and the necessary exchange between colleagues can be an important aspect of faculty development for both junior and senior faculty and can actively stimulate professional growth.
- Differences in individual teaching styles are a potential source of either conflict or positive diversity when team teaching is involved.
- Careful planning and preparation are critical. William H. Newell has noted this imperative: "Inadequate preparation time for designing and teaching interdisciplinary courses will result in weak, ineffectually taught courses. In a few years, the faculty as a whole will grow disaffected with what they will have come to see quite rightly as intellectually irresponsible core courses and the program will be voted out of existence."<sup>3</sup>
- Guiding and mentoring students in collaborative programs may require more faculty commitment than more traditional programs. This is especially true when specific programs are designed for individual students.
- It has been frequently noted that faculty who pursue interdisciplinary work may do so at the risk of their academic careers. The reward structure for promotion and tenure is firmly based on the disciplinary model, as is the framework for most publication and other forms of scholarly communication and recognition. The extra demands required in preparing interdisciplinary programs may impinge on the standard load of teaching, creative work and research, and service.

# **Administrative Issues**

If the bringing together of ideas and materials is a formidable challenge for the faculty, bringing together faculty and resources is often an equal challenge for administrators.

- Faculty, time, space, facilities, and finances are limited and their allocation is controlled in large part by precedent.
- Team teaching is usually expensive, especially when, as many proponents suggest, two or more teachers are present at all sessions.
- Release time for preparation is costly. Seminars and other faculty development mechanisms make demands on limited budgets.
- Administrators involved with collaborative programs often contend with resentment of what are
  perceived to be encroachments on the priorities, staff, time, and resources of the disciplines
  themselves. This is most likely to be found among those who are affected by, but not actively part
  of, collaborative efforts.

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- Well-developed collaborative programs can substantially strengthen the curriculum of arts units, especially when they contribute to the liberal education component of professional degrees, or when separate components of a specific arts discipline are taught together. Time and resources may ultimately be conserved through this approach.
- There may be temptation to replace disciplinary offerings with collaborative programs. This may be highly inappropriate. Resources may be strained when new collaborative programs complement, but cannot supplant, necessary disciplinary offerings.

### Faculty and Administrative Issues

There are many areas where planning and presentation of collaborative programs impact both faculty and administration.

- The current vogue for collaborative programs may lead to suggestions that such programs be developed where they are not truly appropriate. Both faculty and administrators must honestly consider this potential difficulty.
- The inclusion of collaborative programs may challenge traditional roles and structures. Retraining and rethinking may be in order for all concerned.
- The first requirement for collaborative programs is communication. Faculty and administrators can facilitate the development of these programs by fostering communication among their colleagues within and beyond their departments.
- Collaborative programs are most successful in environments where creative leaps are valued for the health and growth of the unit and the institution.

# **Student Issues**

The OECD writers noted that the often "cloistered life of the student" coincides with that point in a young person's life when he or she is most concerned with the broad issues of humanity and society, and suggest that higher education be "wide open to the outside world and to effective simultaneous introduction to the world of science and to life." <sup>4</sup> The arts have the potential to do this to a large degree; they also carry the risks associated with any profession so centered in the work of solitary practitioners. When the connections made in the curriculum extend to informal exchange between faculty and students beyond the framework of studio and classroom, the benefits are greatly expanded.

- It is essential to consider the point or points in a student's career at which collaborative programs are most appropriate and most effective. While such programs can contribute to breadth of knowledge at the beginning of a student's program, it is unlikely that depth of understanding or significant integration can be achieved until considerable knowledge and skills have been mastered.
- Introductory courses in disciplines or subdisciplines, whether they stress content or method, have different goals than those that seek to give new perspective to an area that is already familiar, or that encourage combining knowledge or skills from several disciplines or subdisciplines.
- Breadth of knowledge and depth of understanding are both basic goals of higher education. While each may contribute to the other, they are not synonymous, and therefore it is important to be clear about goals for breadth or depth in any given project, program, or course.
- It is important that members of the academy be aware of the world into which students are headed. Following the progress of graduates once they leave school is one means of gathering

both information and insights on the success of any curricular program, disciplinary or interdisciplinary. Collaborative programs may be harder to track. Collaborative programs at the graduate level, especially in teacher preparation programs, can be important in developing greater comfort with collaborative work as a professional.

• Successful programs require guidance, counseling, and mentoring. This is especially true when collaborative programs constitute the majority of a student's work. However, it is equally important not to "overguide" those students whose creative initiative may take them in unexpected directions.

#### **Evaluation**

Effective evaluation of programs and student progress depends on clear understanding of the goals and objectives involved. A list of questions useful in evaluating programs is given in the report commissioned by the American Association of Colleges Project on Liberal Education, Study in Depth, and the Arts and Sciences Major:

- How does the major, program, or course bring the techniques and perspectives of several disciplines to bear upon a problem or question? Is the problem or question carefully defined?
- Are students helped to understand self-consciously how the various elements in integrative synthesis are obtained and how they interrelate?
- How and when does a comparative analysis of pertinent disciplinary methods and tools take place?
- Are there occasions for indicating to students where various types of information can be obtained, including online databanks?
- Are the goals of both specific intellectual and disciplinary depth and broad interdisciplinary synthesis explicitly defined and pursued?
- Has the faculty considered the danger that fully-integrative synthesis may be hindered by the lack of a particular disciplinary contribution that should be added to the interdisciplinary program's offerings?<sup>5</sup>

### **Questions for Arts Units**

- How much and what kinds of disciplinary connections are to be made within specific courses, projects, programs or curricula—multidisciplinary, pluridisciplinary, crossdisciplinary, interdisciplinary, and/or transdisciplinary? To what extent are courses, projects, programs, or curricula using these approaches either singly, or in combination?
- Is there an appropriate balance between disciplinary and collaborative programs?
- Are the collaborative efforts coherent both in and of themselves and with reference to the entire curriculum? Do students and faculty understand purposes, goals, and specific learning objectives?
- Are the mechanisms for evaluation appropriate to the course, project, program, or curriculum, and to the one or more collaborative approaches taken?
- Is there a common, clearly defined concept of what students should know and be able to do after completing a program that combines work in two or more disciplines? How do collaborative

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- programs aid in the development of knowledge and skills both in the component disciplines and in intellectual approaches and techniques for making connections?
- What tangible resources (faculty, materials, time) are available for the development and implementation of collaborative programs? What about intangible resources: vision, morale, resolve, collective self-awareness, patience, willingness to take risks, etc?
- Is there adequate faculty and administrative support for collaborative programs? Will the artistic and intellectual climate be supportive of the specific programs contemplated?
- Are collaborative programs consonant with the mission of the institution? Are the qualities needed in the development and implementation of collaborative programs valued in the hiring, promotion, and tenure considerations for faculty?
- What information is needed for good decision making in the local situation?

#### **Cautions for Arts Units**

- There is a tendency, when a label or trend has acquired positive connotations, to apply it indiscriminately, to use it promotionally rather than intellectually. It is essential that different goals and objectives be clearly understood and accurately described. Overuse of "interdisciplinary" and other terms or their use to indicate any connection between disciplines, no matter how superficial, destroys the meaningfulness of the terms and impoverishes debate and substantive development.
- Trends such as "Writing Across the Curriculum" or "Thinking Across the Curriculum" may appear to promote and be served by collaborative programs. In structuring such programs, it is important to be clear about goals (writing or thinking) and the means by which they are best served. It is important to be clear about the extent to which these goals may or may not parallel those of collaborative programs.
- Funding is often available for "innovative" programs that may or may not contribute to the goals and objectives of the arts unit. Be wary of funders who may care about images of innovation more than anything else.
- Experience with a process does not necessarily develop the ability to use or apply the process oneself. The experience-competence relationship needs careful attention in each specific circumstance.
- Interdisciplinary programs attempted without adequate disciplinary competence can compromise students and faculty. Zero plus zero equals zero. Beware of masking superficiality with images of intellectual complexity.
- It is crucial that there be understanding of the specific relationship of content and process in each collaborative program.
- Just as a multidisciplinary program is not the same as an interdisciplinary program, turn teaching is not the same as team teaching. Synthesis in preparation and presentation is essential where more than one faculty member teaches in a program with objectives for integration and synthesis. Watch and be ready to influence K-12 discussions. For example, it is important that use of the arts to teach other subjects is not made a rationale for eliminating discipline-specific instruction in the arts themselves.

- At all levels, but especially in K-12 education, beware of proposals that do nothing but substitute participation in projects for substantive learning. Participation in a high school musical does not necessarily produce competence in the component disciplines of theatre, music, dance, and visual arts.
- Talking about art should not replace dong art, nor should the arts be devalued when connections are made with other disciplines. Work across and among disciplines is usually easier in work *about* than work *in* the disciplines themselves. Even when dance is put to music, music and dance do not become each other.
- Communication—among faculty, students, and administrators—may be the element most critical to the success of collaborative ventures. Objectives, needs, and concerns must be shared at all stages of planning and implementation if the numerous pitfalls of collaborative study are to be avoided. The sharing of information among institutions is also an important resource for those beginning new programs or evaluating existing ones.

# **Leadership Opportunities**

- Develop programs that build bridges between and among the arts professions represented within the institution. This means working unceasingly to bring creators, performers, historians, educators, theoreticians, etc., together at all levels of advanced professional integration and involvement. Many of the worthwhile objectives of such activities are: cooperative approaches to needs of the field; creating better understanding and sense of responsibility for the whole; maintaining the cohesion necessary to fight for the cause of the arts when necessary.
- Connect the work of the arts unit to professional work in other disciplines. Teach by example the interconnections of the arts professions with other intellectual and professional activities.
- Develop programs for students oriented to career building that emphasize service to and responsibility for the arts professions with all their interconnections.
- Develop programs to make connections with future professionals in other disciplines, particularly
  with a view to encouraging positive values about the arts among a broad spectrum of future
  leaders.
- Develop modes and avenues of communication between individuals, units, and the community. Learn from other disciplines new or different means of communication.
- Find ways to connect artistic activity to the notion of "research."
- Effect changes in the academic environment and reward systems which will promote faculty involvement in collaborative programs.
- Create connections within the community and consortia among institutions that advance the understanding of the arts as major partners in intellectual life as a whole.
- Identify current and future trends that may be best studied or served by collaborative programs.
- Develop criteria for judging the merits of proposals that use collaborative terms. For example, in terms of the arts unit's goals and objectives, what characteristics are required for an "interdisciplinary" program to have credibility and integrity?
- Conduct policy research exploring the promises and pitfalls of collaborative work.

#### **CONTEXTS**

## **Technology**

Technological advances will continue to facilitate work and study that combine the various disciplines in various ways. In fact, technology may make so many possibilities available that choice and priority setting will become increasingly important. What among all that *can* be done *should* be done, and where, and why? For example, technology can help students gain the knowledge and skills that are the building blocks for combining disciplines, but it can also provide means for substituting project activity for the acquisition of knowledge and skills. These considerations bring us back to the need for clarity about goals and objectives and to the importance of matching means to ends rather than the reverse. Remembering that what students like to do at the moment isn't always what teaches them most can also provide positive checks and balances on enthusiasms driven by technodazzle.

On the positive side, advancing technology enables new horizons in the arts, in teaching, and in research and scholarship. The prospects for general education are both astounding and exciting. Individuals and institutions have incredible new opportunities. Here and elsewhere, values govern policy and approaches within policy frameworks.

#### Values

Efforts to combine disciplines are derived from a complex interplay of values and purposes. From expansion of intellectual scope to isolation of a new field, from experimentation to the formulation of new doctrine, from power sharing to power seeking, these and many other approaches are involved and all can have merit in appropriate circumstances. However, given current discussion about combing disciplines, two concepts are worth considering. First, concentrated focus is the property of much outstanding artistic and intellectual work no matter what its disciplinary bases. Second, searching for wisdom often produces more of transcendent usefulness than promoting techniques or participating in fads. Though wisdom-seeking may sound vague and ephemeral, work combining disciplines is often critical to finding the most complete and effective approaches to problems across the spectrum of human endeavor. Wisdom-seeking and collaborations among the disciplines are natural partners.

As always, for institutions of higher education, policy questions revolve fundamentally around the present and future capabilities of students and the role of formal and informal learning in traveling the distance between what is and what will be. Mixtures and balances among single disciplines and disciplines in combination are central to this task.

#### **NOTES**

<sup>1</sup>Centre for Educational Research and Innovation. *Interdisciplinarity: Problems of Teaching and Research in Universities*, pp.106-107, 25-26.

<sup>2</sup>Forrest H. Armstrong,, "Faculty Development Through Interdisciplinarity." *The Journal of General Education* 32.1 (Spring 1980), p. 57.

<sup>3</sup>William H. Newell, "Interdisciplinary Curriculum Development," *Issues in Integrative Studies*, 8 (1990), p. 82.

<sup>4</sup>Interdisciplinarity, p. 231.

<sup>5</sup> Society for Values in Higher Education Task Force Report on Interdisciplinary Studies," *Issues in Integrative Studies*, 8 (1990), pp. 15-16.

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The New Liberal Arts Program of the Alfred P. Sloan Foundation is devoted to "assisting in the introduction of quantitative reasoning and concepts of modern technology within liberal education." More than a dozen extended syllabi have been developed through this program at institutions that include Princeton, Reed, Penn, Brandeis, Swarthmore, SUNY, and Mount Holyoke. These documents include summaries of lectures, descriptions of reading and project assignments, discussion of course objectives and development, bibliographies, and comments based on experience teaching the courses. Information and copies of the syllabi are available through J. Truxal and M. Visich, Department of Technology and Society, State University of New York, Stony Brook, NY 11794-2250.

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Current Issues in Higher Education 2 (1981), "Creating an Integrated Curriculum: the 'Higher' in Higher Education."

Forum for Liberal Education, 8:4 (March 1986), "Crossing the Boundaries."

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National Forum 69:2 (Spring 1989), "Interdisciplinary Studies: Defining and Defending."

Sounding 54:1 (Spring 1971), "Experimental Interdisciplinary Programs."

Teacher's College Record, 73:2 (1971), "Curriculum: Interdisciplinary Insights."

# **Interdisciplinary Organizations**

(Web addresses as of May 2009)

Association for General and Liberal Studies / <a href="www.bsu.edu/web/agls">www.bsu.edu/web/agls</a>
Association for Integrative Studies / <a href="www.muohio.edu/ais">www.muohio.edu/ais</a>
Humanities Education and Research Association / <a href="www.heer-a.org">www.heer-a.org</a>
National Collegiate Honors Council / <a href="www.nchchonors.org">www.nchchonors.org</a>
Society for Literature, Science, and the Arts / <a href="www.litsci.org">www.litsci.org</a>
Society for Values in Higher Education / <a href="www.svhe.org">www.svhe.org</a>

Information on these associations is given in Julie Thompson Klein's article in *Issues in Integrative Studies* no. 8 (1990).

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