Cabbages — and Kings: Research Directions in Integrated/ Interdisciplinary Curriculum

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In this essay I examine past research into integrated or interdisciplinary studies and explore future directions for researchers. Four questions form the focus of the essay: Why integrate curriculum? What constitutes integrated studies? Who benefits from curricular integration? and What pedagogical changes accompany integrated studies? Citing the values questions raised by curricular integration, I predict an unstable future for interdisciplinary studies. The essay calls for a research agenda that moves beyond traditional process/product investigations to include the meanings of teachers, students, and others participating in integrated studies.

Dans cet article, j'examine ce qui a été dit antérieurement sur l'intégration et l'interdisciplinarité. J'explore également de nouvelles pistes de recherche pour les chercheurs. Quatre questions font l'objet de cet article: Qu'est-ce qu'un curriculum intégré? De quoi se composent les études intégrées? Qui profite d'une intégration du curriculum? Quels sont les changements pédagogiques qui accompagnent les études intégrées? Lorsque l'on réalise que l'intégration du curriculum soulève des questions majeures, on peut prédire un futur incertain pour les études interdisiplinaires. Cet article suggère un agenda de recherche qui va plus loin que la dynamique traditionnelle processus/produit dans la manière de recueillir des informations. Il faut dorénavant y inclure les opinions des professeurs, des étudiants, et de ceux qui prennent part aux études intégrées.

Whether we view the curriculum as a Humpty Dumpty tragedy hopelessly fragmented by some fall from perfection, as a holographic unity ultimately whole and connected despite all the efforts to rip it apart, or as something in between, the issue of connections between subject areas increasingly demands the attention of curriculum thinkers. Interest in interdisciplinary or integrated studies is growing. Miller (1988) sees a form of integration

as a key weapon against such powerful adversaries as acid rain, nuclear proliferation, and the deterioration of the ozone. Jacobs (1989) reports that the issue of integrated curricula was the number one concern among the Association for Supervision and Curriculum Development's polling panel in 1988. Calling the integrative curriculum an educational "weather" issue, Gehrke (1991) maintains that everyone talks about it, but no one does anything. Miller, Cassie, and Drake (1990) argue that integrating studies will help achieve the Ontario Ministry of Education's ideal image of a learner. British Columbia's recent proposals for curriculum change (British Columbia Ministry of Education, 1990b) make integration of curricula a key element of school reform. The widespread interest in integrating curricula gives rise to a number of significant issues, perhaps best expressed as questions:

- Why should curricula be integrated?
- What does it mean to call a program integrated or interdisciplinary?
- Who profits by the integrating of study programs?
- How does the pedagogy of an interdisciplinary program differ from that of the traditional approach?

Each of these questions represents a cluster of issues to which theory and research have been addressed and which future research will continue to explore. In this essay I examine both some of the past research into the above questions and some directions for future research efforts.

Why integrate?

The purpose of integrating studies makes a useful starting point. Why bother to change a system that seems to be working? In essence, this question functions at the deepest level of educational theorizing: the values and beliefs that underlie the entire system. To ask a *why* question about the structure we give to educational programs forces us to examine our visions of what it means to be an educated person. It calls into

question the aims of the processes, programs, organizations, expectations, and structures of the entire enterprise.

Two contrasting positions have surfaced in answering the question about the purpose of integrating school experiences. In the first category, there are those who argue that the purpose of integrating is to enhance or improve the educational system as it is. An example of this perspective can be seen in the work done in the United Kingdom at about the time of the raising of the school leaving age (known as ROSLA). Faced with a population of students to whom (theoretically, at least) the relevance of further education was dubious, interdisciplinary approaches to schooling were set forth as a way of keeping students interested in school (Adams, 1976). The Humanities Curriculum Project and, to a lesser extent, Keele Integrated Studies (Adams, 1976) represent large-scale responses to the perceived need for more "relevance" through integrating programs. Researchers who examined integrated studies from this perspective were concerned with the effect that the programs had in terms of the expressed purpose: keeping potentially estranged pupils interested in the system. As one might expect, the lower-track students quickly recognized that their separate program was less intellectually demanding and less promising for career opportunities than the academic students' program, and thus, they responded negatively. Reid (1984) expresses the problems associated with this approach to interdisciplinary studies:

> Hence the kind of innovation which 'sacrifices the categorical meaning of topics' will meet with low student commitment and will survive with difficulty or not at all. This was the fate of many 'ROSLA' programmes which emphasized 'relevance' and 'life skills' instead of academic, 'properly schooled' content. Students identify such curricula as connected with low status futures and find them meaningless in terms of their understanding of educationally significant categories. (pp. 73-74)

In the United States, the same notion of increasing the relevance of schooling was applied to the development of humanities courses for upper-track academically inclined students in the late 1960s (Applebee, 1974). Most humanities courses suffered the same fate as their British

counterparts: They were considered to be inferior to the standard fare of school offerings and they withered away. Applebee's (1974) summary of criticisms demonstrates the problems perceived in these courses: "The dangers in the humanities course were exactly those of the integrated curricula of the thirties and forties: superficial coverage, 'intellectual indigestion,' neglect of important skills, and a broadening of the course beyond the competence of the teacher" (p. 210).

In contrast to those who see the purpose of integration as an enhancement of the status quo, other theorists and researchers have argued that the purpose of integration is to replace the current system altogether. Kilpatrick's "project method," which he elaborated in 1918, posited a view of education that started from the particular interests of the students, thus basing integration of learning on students rather than on subject matter (Kliebard, 1988). Arguing that since the typical "unit" of a worthy life was a "purposeful act," the typical unit of school procedures should also be a "purposeful act" (Applebee, 1974, p. 108). Four kinds of acts were considered to have legitimate places in the curriculum: embodying an idea (e.g., writing a letter), enjoying something (e.g., listening to a story), solving a problem (e.g., deciding why New York outgrew Philadelphia), and attaining a skill (e.g., improving one's handwriting). While criticized for being too focused on the individual child, Kilpatrick's theory of a child-centered integration had tremendous impact as teachers incorporated the project method into their courses.

The Eight-Year Study of the 1930s (Vars, 1991) carried out a long-term experiment with the value of an integrated approach, where students in innovative schools were compared with those in traditional programs. Arising from concerns expressed at the 1930 convention of the Progressive Education Association, the study involved 30 schools in which such innovations as "fused" or "correlated" courses were attempted (Applebee, 1974). As Tanner (1989) reports, the results indicated that students involved in the experimental curricular designs "demonstrated better attitudes toward learning, greater intellectual curiosity, and higher achievement in college than their peers who had completed the more traditional college preparatory program" (p. 8). For a variety of reasons,

however, the results of this study had little impact on the structure of education.

The question of the purpose of integration, then, has been largely considered in light of either improving student learning and engagement in the present system or replacing the system altogether.

What directions will research take in the next few years concerning the question of purpose? Two considerations deserve attention. First, the purpose of integration, like the purpose of education itself, is a values question that has faced and will continue to face serious debate and deliberation. The answer to this question will not be found in some empirical discovery; indeed, empirical evidence can be used to answer this question in radically different ways. Nevertheless, given a general concern with students' apathy about schooling, I would expect future researchers to continue to probe the relationship between interdisciplinary approaches to education and student engagement with learning. Second, where interdisciplinary approaches completely supplant the traditional organization of school subjects (as recommended for the middle grades in Beane, 1990), researchers should examine what the educated person emerging from such a program is like. A great variety of research tools will be used in this examination, from standardized tests to ethnographic portrayals. I would expect such research to be inconclusive and the debate on the purpose of integration to continue.

What does integrated mean?

An important and related question focuses on what it means to integrate studies. Specifically, what vision of knowledge is represented in an integrated or interdisciplinary approach to education? In fact, more than a few scholars would demur at any equating of the two terms. The research on this question has been, as one would expect, largely conceptual.

Pring (1973) analyzed the concepts of *integration* and *interdisciplinary*, concluding that the former involves epistemological questions which the latter does not raise: "The very notion of 'integration' incorporates the

idea of unity between forms of knowledge and their respective disciplines. 'Interdisciplinary' on the other hand simply refers to the use of more than one discipline in pursuing a particular inquiry" (pp. 135-136). Despite what seems to me to be a useful distinction, the terms have become conflated in current use (see, for example, British Columbia Ministry of Education, 1990a, and Ackerman, 1989), or they have become blurred in a congeries of meanings from various perspectives: For the curricular theorist, *integrated* is distinguished from *integrative* (Harter & Gehrke, 1989), and *interdisciplinary* is considered a term that preserves discipline boundaries while *integrated* eliminates them (Shoemaker, 1989); for the math theorist, *integrated* becomes a blending of first-year math courses (Edgerton, 1990); for the science educator, *integrated* is a methodology (Butzow & Butzow, 1988) but *interdisciplinary* is like the "real world" (McGinnis, 1988) or a problem-focused organization (Wraga & Hlebowitsh, 1991); in social studies, *integration* signifies a beneficial blending with other subjects (Kaltsounis, 1990). I could cite dozens of other views as well, many conflicting with those already cited. Thus, the epistemological question remains: What version of knowledge is presented in the interdisciplinary approach? For the sake ot simplicity, I will look at two general perspectives on the knowledge question.

Jacobs (1989), Ackerman (1989), and Court (1991) represent the view that knowledge in interdisciplinary studies is a repackaging and, perhaps, enhancement of discipline-based knowledge. In Jacobs's (1989) definition, *interdisciplinary* means consciously applying methodology and language from more than one discipline to a theme, topic, or problem (p. 8). Ackerman's criteria for evaluating integrated curricula (which, for him, is the same as interdisciplinary curricula) are based solidly on the notion of validity within, for, and beyond the existing disciplines. Essentially, he argues that the authority for deciding what knowledge counts resides with the traditional disciplines; a new way of teaching this knowledge is acceptable as long as it is at least as effective as the traditional approach. Court (1991) argues that the basis for interdisciplinary work is "first-rate discipline-based teaching" (p. 7). My criticism of these writers is that they take the disciplines as given, beyond questioning. I maintain that the disciplines need to be examined as constructs serving particular purposes and

particular stakeholders. By opening up the question of what kind of knowledge counts, we can get beyond accepting traditional structures and begin to explore the "universe of alternatives" (Sarason, 1971).

The reasoning of Jacobs (1989), Ackerman (1989), and Court (1991) follows that of Phenix (1964) and Hirst and Peters (1974), who represent the research tradition that addresses the knowledge question from a philosophical perspective, using conceptual analysis to build a case for the importance of the disciplines. Hirst and Peters (1974) argue that all human concepts belong to a number of distinct categories, "marked out in each case by certain fundamental, ultimate, or categorical concepts of a most general kind which other concepts in the category presuppose" (p. 181). Phenix (1964) even identifies this important content of the disciplines as "materials that have been produced in disciplined communities of inquiry by men [sic] of knowledge who possess authority in their fields" (p. 11). While neither Phenix nor Hirst and Peters discount the value of interdisciplinary experiences, they agree that the basis for knowing resides in the disciplines.

Beane (1990) represents a perspective different from the philosophical justification of the disciplines. Beane argues that the disciplines or subjects are not conceptually necessary starting points for coming to know or for organizing knowledge. The school subjects, Beane contends, arose largely due to the influence of 19th century faculty psychology and the dominance of social-efficiency and academic "experts." A neutral "knowledge" does not guide curriculum: "We must understand by this that the formation of the school subjects, the curriculum structure they support, and the relationships they under gird was (and is) the result of a highly political struggle by very powerful groups" (p. 32). Beane advocates a problem-centered general education, drawing curriculum from the intersection of adolescent interests and pressing social problems (for example, a unit that incorporates the adolescent concern with developing an identity and the social concern with cultural diversity).

By challenging the authority of the disciplines, Beane (1990) falls into alignment with those sociologists concerned with knowledge who not only

question current organizations of knowledge (i.e., as the only possible or correct organizations), but who also search for the deleterious effects of such organizations. Goodson (1988) works from a historical perspective to understand disciplines as social and political institutions rather than as manifestations of "realms of meaning" (Phenix, 1964). Goodson's research represents the attempt to answer the knowledge question through the use of curricular and life histories, challenging the notion of the disciplines as a basis for knowledge. Keddie (1971), Anyon (1981), and McNeil (1986) focus their research on classrooms and on how knowledge is organized according to social class or the importance of institutional control of students. In such a scheme, the authority of a discipline or subject area arises not so much from the nature of knowledge but from the unequal distribution of power in schools. As Keddie puts it, "It appears at this point ... that the ability to 'grasp a concept' in the context of the course and probably in its wider sense, refers to a pupil's willingness or ability to take over or accept the teacher's categories" (p. 146) rather than to move to higher levels of abstraction or generalization. This may require students to regard "as irrelevant or inappropriate what they might see as problems in a context of everyday meaning" (p. 151). A relevance structure emerges, in which a teacher's knowledge of the subject shifts according to expectations about students, largely based on social class.

What direction, then, will future research take regarding the question of knowledge as it relates to interdisciplinary studies? I see several possibilities here. First, the two competing traditions outlined above will continue. That is, historical and sociological studies of the organization of knowledge in the tradition of Keddie and Goodson will add to our understanding of the development of school subjects. In particular, examinations of boundary-crossing or boundary-blurring courses (like the humanities courses listed above) will be of interest. I suspect that research into established disciplines is likely to show their self-conserving tendencies (Goodson, 1987). The second tradition, that of conceptual analysis, will continue as philosophers of education help clarify the meanings of such concepts as *disciplines*. This conceptual research will move into the realm of discourse analysis and capture the attention of researchers working within the post-modern perspective. Questions likely to arise in this

respect will focus on issues of how school subject practitioners write their own texts; that is, how is it, for example, that English teachers set the terms for definitions of what counts as knowledge in English? (See, for example, Medway's [1990] exploration of the establishment of a new role for English courses in the 1960s.)

A second development in future research should focus on the phenomenology of knowledge as those most directly involved experience it. What meaning, for example, do the disciplines have to practicing teachers? What meaning do these teachers make of interdisciplinary programs and how do they view these programs in light of their training and experience? Likewise, what meanings do students make of their experiences in integrative as opposed to traditional programs? Do their conceptions of knowledge change as a result of their experiences? Such a research agenda faces the danger of relativism. In exploring participants' meanings, we must avoid merely chronicling idiosyncratic meanings; relationships must be established among the meanings uncovered through this research.

Certainly there will be questions about achievement and attitude issues, but the question about what it means to call curricula "integrated" should focus on knowledge: the history of its organization and its contemporary sociological expressions, continued conceptual analysis of the disciplines set against post-structuralist investigations, and the meaning perspectives of those directly involved in education.

Who profits from integrating curricula?

This third question focuses on the actual advantages and disadvantages associated with the integration of curricula. Obviously there is a conceptual relationship to the question of purpose, since the question of purpose implies that someone will profit by integration. However, I isolate this aspect of the question not only because it represents an important issue in the research conducted thus far, but also because it allows me to focus on the participants in the educational venture. Those most directly involved, teachers and students, deserve consideration in examining interdisciplinary studies.

Who benefits from integrated studies? Researchers have argued that students benefit and that students lose. Both perspectives appear to have ample support. For example, the Eight-Year Study cited earlier showed that students in integrated programs did better on the same measures than their counterparts in traditional programs. On the other hand, the humanities experiments with lower track students in the United Kingdom and upper track students in the United States demonstrated that students appeared to lose ground (academically or attitudinally) in comparison with their peers in traditional programs. One possible explanation for this disparity lies in the difference between interdisciplinary studies as *the* approach of an educational institution and interdisciplinary studies for only a segment of the school population (Kain, 1992). This raises a question deserving further research: Do important differences in analysis emerge (either historically or in contemporary practices) depending upon whether the interdisciplinary program stands by itself or exists alongside other options?

Arhar, Johnston, and Markle (1989) reviewed studies of the effects of interdisciplinary teaming on students. While interdisciplinary approaches do not necessarily involve teams of teachers, the current training of teachers (i.e., as subject specialists [Goodlad, 1984]) indicates this pattern to be the most likely one. Arhar et al. report a number of interesting findings. Studies of the effects of interdisciplinary teaming on student achievement have been contradictory. Some studies show that math achievement is enhanced while English achievement is unaffected; most studies show no significant differences. There is some evidence that "low ability" students do better in teamed situations than in traditional organizations and "high achieving" students are not harmed by the practice (p. 25). Regarding social and affective outcomes, Arhar et al. cite several studies showing that interracial relationships are improved in interdisciplinary arrangements; they contend that, in general, "students expressed more enthusiasm about school and their teachers than did the students at the more traditional school" (p. 26). At the same time, they report some studies indicating that students have a greater sense of powerlessness when taught by teacher teams.

I suggest that part of the reason for the contradictions and uncertainties of these findings lies in the question-posing of the researchers. Attempts to get good generalizable data on such issues as math achievement require extensive controls that, of necessity, reduce the complexity of such vast institutional differences as integrated versus departmentalized approaches to curriculum. Obviously the question cannot be realistically investigated by the standard random-sampling experimental approach. Hence, traditional process-product research, though certain to be a part of future explorations of interdisciplinary studies, is of limited value. While it would be comforting for advocates of interdisciplinary programs to be able to point to higher math scores or for opponents of interdisciplinary programs to be able to highlight lower reading scores, neither situation would tell us very much. Perhaps the research could more profitably focus on the entire experiences of participants in one or the other organizational schemes, recognizing the complex interweaving of influences and effects, and attempting to avoid the fragmentation implicit in the sorts of studies cited by Arhar et al. (1989).

Students, however, are not the only potential winners or losers in interdisciplinary arrangements. Another significant consideration in this complex situation concerns teachers: How are they affected by interdisciplinary curricula? Research into this question has been relatively limited. In the historical instances cited above, very little exploration of teachers' perspectives occurred. In one exception, MacDonald (1978) reported that teachers who were generally dissatisfied with the results of the Humanities Curriculum Project nevertheless felt they had grown through their experiences in interdisciplinary work, particularly in their contacts with colleagues outside of their areas of expertise.

Erb (1987) reports that teachers become better communicators through their work with one another in interdisciplinary teaching and that their level of satisfaction with the conditions of teaching "nearly universally" rises (p. 6). The collaboration made possible (necessary?) through interdisciplinary teaching opens the possibility for all sorts of personal and institutional growth, although it can also represent risks and failings for

teachers (Little, 1990). Meichtry (1990) reports that working on an interdisciplinary team enhances norms of collaboration among teachers.

What avenues for future research are opened by exploring the potential beneficiaries of interdisciplinary instruction? First, the question of effects on students will doubtlessly remain of paramount concern. As I indicated above, I have misgivings about the value of traditional input/output research on student achievement in this context. I do, however, expect to see continued work in that direction. In particular, I would expect interdisciplinary programs to face serious challenges from "back-to-the-basics" and mastery learning advocates. By eschewing the traditional structuring of knowledge, the interdisciplinary approach invites an attack from those who base their conception of the educated person entirely on mastery of the traditional disciplines. The battle lines, then, will be drawn around the achievement issue and researchers from both sides will marshal statistics to defend their positions. From what we've seen to this point (Arhar et al., 1989) I doubt that either side will lack ammunition. At the same time, other researchers will shift the focus from achievement levels to broader issues, such as how patterns of control and initiation shift in interdisciplinary programs. If students are to be considered important contributors to the educational process, if they are to be active participants in selecting and organizing knowledge, current practices of teacher initiation and patterns of teacher control are certain to change. Researchers will investigate not only how students respond to this change, but what growth the new roles entail.

As for the teachers, the research program will face the challenge of understanding how (and whether) teachers cope with a radical identity shift. Teachers now function with a strong sense of autonomy and subject-matter identity (Goodlad, 1984). The significance of this sense of identity influences how teachers respond to calls for curricular integration. Haigh (1975), generalizing from teachers' experiences in integrated projects, says that teachers "will support integration up to the point where they perceive these standards [i.e., those important to them as specialists] as being in danger and will then begin to make their doubts known" (p. 52). Teachers are socialized into a profession that calls on them to make it alone (Lortie,

1975). Individually and collectively, a move to interdisciplinary approaches to instruction requires altering this basic sense of identity and efficacy. Perhaps a useful research approach in this regard would be phenomenological (Van Manen, 1990), an attempt to understand teachers' "ways of being" in the world and how they are affected as the structure of their institutions changes. I would expect researchers to observe and interview a great many teachers who are undergoing, have undergone, or have rejected this identity shift.

Researchers will also find it necessary to work backwards through the system to examine how teachers are socialized into subject-matter identities. It is a truism that university students in teacher training programs view their education courses as a step below their subject specialization courses. Part of the reason for this, I suspect, lies in the implicit status structure of the academic community and the explicit comments of other university professors regarding education. Becher (1989) is one investigator who has examined the differing identities of varying "academic tribes," noting, for example, the differences between disciplines regarding attitudes toward collaborative work, publication pressures, idea "half-lives," and other issues. He argues that the general pattern regarding status is that the "harder" (i.e., more scientific) an academic area is and the "purer" (i.e., not applied) it is the more status it accrues. While his work does not consider teacher training, it raises issues for future consideration, especially in light of teachers adjusting their specialist identities. This calls for a research program that looks not only at the immediate working world of teachers, but also at their training, pretraining, and socialization experiences (Ball & McDiarmid, 1990).

What form does pedagogy take in integrated curricula?

The final issue I raised concerning integrated/interdisciplinary curricula was a practical question: How is it done? How does the pedagogy in integrated studies differ from traditional approaches? I should note that while the pedagogy does generally differ, it does not *necessarily* do so from a logical perspective. One of the four questions raised by the *Intermediate Program* proposal (British Columbia Ministry of Education, 1990a)

regarding whether or not interdisciplinary work is "purposeful integration" asks if the work provides for the active involvement of the learners (p. 91). Certainly active involvement is a desirable goal, and one that frequently accompanies interdisciplinary approaches to instruction (Adams, 1976). However, active involvement is not necessitated by the approach. For example, four teachers committed to recitation and lecture methods could jointly devise an interdisciplinary unit involving English, social studies, math, and science without altering their basic teaching techniques. Such a situation is possible, however unlikely it may be.

Much of the concern surrounding the Humanities Curriculum Project focused on the pedagogical implications of the project. For teachers, one of the most difficult but rewarding aspects of their experience was a decentering of their own classroom role. That is, teachers were forced to move out of center stage in the classroom, using discussion techniques instead of traditional lectures, acting as "neutral chairs" instead of authorities. Although the Humanities Curriculum Project itself failed, teachers did report professional growth through their experiences in this decentering of their classroom roles (MacDonald, 1978).

Beane (1990) argues for radical changes in pedagogy. For example, he would see interdisciplinary studies as putting a halt to all homogeneous grouping. He further maintains that evaluating students changes to a dialogic form of evaluation, with students involved in their own evaluation through anecdotes, logs, and portfolios. Regarding the timetable, Beane sees interdisciplinary work taking up virtually the whole school day, with students and teachers together creating thematic units.

If even a small part of Beane's (1990) program is to achieve implementation, future research will have to address some of the questions of pedagogy that are raised. In a sense, this fourth issue I have raised is closest to being a technical question. Researchers in the next five to ten years will explore such questions as the following: How do teachers plan together to create interdisciplinary learning experiences? How can teachers and students effectively share planning and evaluating tasks? How can active involvement be encouraged among students socialized into a passive

conception of schooling? What conceptual changes accompany changing evaluative practices? What role will discipline and management norms play in the changing organization?

Other questions

Clearly such a research agenda will help us understand the practical difficulties of interdisciplinary approaches to education. Other questions, however, will still need to be addressed. For example, most proposals for an interdisciplinary curriculum, even Beane's (1990) radical ideas, include a role for subject specialization at some point in the overall educational system. One question that arises from this focuses on the interplay between interdisciplinary and disciplinary studies within the system as a whole. Will interdisciplinary studies be seen as a useful diversion, a necessary prerequisite, or a custodial device? How do interdisciplinary studies fit? In systems suffused with status structures, the answer to this question will have a large effect on the fate of interdisciplinary studies.

Another question that has not surfaced in my exploration of these issues concerns the relationship of the community to interdisciplinary curricula. How will such approaches to education interact with the society at large? On the one hand, the flexibility of interdisciplinary approaches to education invites community participation — both for students active in the community and for community members involved in the schools. On the other hand, community members have strong feelings about what schools should or should not be like. Most community members' experiences will have been starkly different from the interdisciplinary approach. From an administrative perspective, this will demand patient, sensitive negotiations with the community. From a research perspective, this opens intriguing possibilities. How, for example, will students communicate their learning experiences to their parents? When parental scorn for "innovative" education is present, how will students cope with conflicting pressures? It seems that the issue of an integrated interdisciplinary curriculum has too often been addressed as though schools were not connected to communities rife with educational expectations and social patterns. This important gap in the research must be addressed.

Conclusion

In Lewis Carroll's well-known children's poem, when the Walrus and the Carpenter wanted to lure the oysters off for a meal, the clever walrus used the inviting interdisciplinary promise of talking "Of shoes — and sealing-wax/Of cabbages — and kings." There is something inviting, exciting about the possible connections in the interdisciplinary approach to curriculum. What we must be cautious about is leaping into it, like so many oysters, without a careful research agenda.

The integrated or interdisciplinary approach to curriculum has gathered support for a variety of reasons. Some supporters argue that this approach creates a sense of a global community and helps students make connections (Carnegie Council on Adolescent Development, 1989). Other supporters cite the risks of fragmentation (Miller, 1988), knowledge overload (Jacobs, 1989), or diminishing thinking abilities (Harter & Gehrke, 1989). Concerns about the relevance of the curriculum (Jacobs, 1989; Pring, 1976), the distorted view of reality inherent in fragmented structures (Beane, 1990; McGinnis, 1988; Miller, Cassie, & Drake, 1990), and standards of excellence (Beane, 1990; Tanner, 1989) all contribute to the call for a serious look at curriculum integration.

In this essay I have explored four issues pertinent to integrated studies: the purpose of integration, the nature of integration, the potential winners and losers in integration, and the changes integration promises for pedagogy. In each area, I have examined what research has been done concerning these questions, and I have outlined future research possibilities. Throughout, I have maintained that important values questions underlie the issue of integration and that technically-minded research programs are insufficient for examining these questions. In this, I am clearly predicting an unstable future for interdisciplinary studies: No matter what research might tell us about effects on students or how teachers can successfully plan together or the best way to "sell" a community on the value of integrated studies, fundamental questions will always remain. What do we see as the qualities of an educated person? What knowledge is most worth

having? The research agenda for interdisciplinary studies will contribute to this important ongoing debate.

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