



Integrative Learning and Interdisciplinary Studies

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Heightened interest in integrative learning and interdisciplinary studies has led many to wonder about the relationship between these concepts. “Integrative learning” is the broader of the two. It is an umbrella term for structures, strategies, and activities that bridge numerous divides, such as high school and college, general education and the major, introductory and advanced levels, experiences inside and outside the classroom, theory and practice, and disciplines and fields. “Interdisciplinary” studies is a subset of integrative learning that fosters connections among disciplines and interdisciplinary fields. This essay examines historical and pedagogical links between integrative learning and interdisciplinary studies.

Historical Perspective

Neither integration nor interdisciplinarity is new. A Working Group on Integrative Learning formed through the Association of American Colleges and Universities’ Greater Expectations initiative traced underlying ideas of connection and synthesis to ancient philosophy (2003). The earliest notable uses of the term “integration” in modern history appeared in books on principles of psychology by Herbert Spencer (1855) and William James (1896) and in Alexis Bertrand’s theory of integrated instruction (1898). In the 1800s, integration was also linked with the role schools play in promoting social unity, and the Herbartian movement’s doctrine of correlation, which supplemented the doctrine of concentration by recognizing “natural relations” among subjects (Ciccorico 1970, 60).

The meaning of integration expanded in the twentieth century. At the postsecondary level, integrating disciplines and developing the “whole” person were primary values in the general education movement that arose in the opening decades, though interdisciplinary models differed on whether the proper locus was the content of texts in a prescribed curriculum or the process of knowing and understanding contemporary problems. In K–12, integration was associated in the 1920s with the Progressivists’ social democratic vision of education centered on students’ personal and social concerns, and the term “integrated curriculum” was linked with the project approach. It also appeared in conjunction with the core curriculum movement in the 1930s, with problem-centered cores in the 1940s and 1950s, and at several points with a broad-fields approach, skills across subjects, and child-centered, activity-based, and experience-based curricula. (Ciccorico 1970, 62; Beane 1997, 2–3, 28–29; Klein 2002, 5–6).

A key distinction emerged as well. By the mid-1920s, organismic and Gestalt psychologists had introduced the notion of an integrated personality and described processes by which individuals seek unity (Beane 1997, 2). Subsequently, at a 1935 meeting, sponsored by the National Education Association, and a 1937 book called *Integration: Its Meaning and Application* (Hopkins 1937), participants concluded that complete unity was impossible. They proposed thinking in terms of “unifying,” not “unified,” approaches. At a 1948 workshop sponsored by the

Foundation for Integrative Education, participants distinguished *content integration*, in bridging physical sciences with arts and letters, from *process integration*, in the interplay of an individual and an environment. They also distinguished *integration* as synthesizing accepted postulates from *integrative* building of new conceptual modes capable of producing a holistic experience. Technical distinctions were not observed uniformly, but an important shift in thinking had occurred: from single structures or teaching methods and linking disciplinary categories to integrative learning processes (Ciccorico 1970, 60–61; Taylor 1969, 130).

In the latter half of the century, the two concepts were sometimes conflated and sometimes opposed. Writers on social science research and higher education contrasted “interdisciplinary” generalizing and connecting current knowledge formations with constructing new “integrative” concepts that raise epistemological questions, such as the paradigms of “area” and “gender.” In K–12, “curriculum integration” reappeared in the closing decades as a generic term for varied approaches that draw on more than one subject or discipline, including “thematic studies,” “multidisciplinary” and “multisubject” designs, integrated units, skills across the curriculum, a social-problems approach to science education, and combined constructs of “social studies” and “whole language.” Several groups also advocated integration, including early childhood educators and proponents of outcomes-based education who argued that sophisticated levels of

learning cannot be attained by studying subjects separately. The movement toward a “brain-based” approach in education furthered the case, buoyed by research indicating the brain is a parallel processor that makes meaning by patterning (Klein 1990, 24–25; Beane 1997, 15–18).

Three added catalysts exist today across the entire educational spectrum. The first is the “knowledge explosion.” A profound increase in the number of specialties and fields has exacerbated the problem of fragmentation, accelerating calls for connection-making. The second is heightened problem focus. As Debra Humphreys notes in this issue, complex problems in our work lives and in society require us to draw upon multiple areas of knowledge. The third is educational reform, linking the two concepts with a family of complementary pedagogies.

of disciplinary perspectives and synthesis are often missing. Additive models also unfold on the ground of disciplinary logic, preserving existing compartmentalizations, content, and procedures. In contrast, interdisciplinary models restructure the curriculum with explicitly integrative seminars and experiences that are typically theme-, problem-, or question-based. Team teaching is also genuinely collaborative.

There is no unique or single pedagogy for integrative interdisciplinary learning. Recalling the role faculty in experimental colleges played in developing both interdisciplinary curricula and integrative pedagogies, William Newell highlights intersections in collaborative and experiential learning, learning communities, living/learning communities, and multicultural learning. All of these approaches draw from multiple perspectives on a complex phenomenon for insights that can be integrated into a richer,

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Integrative Interdisciplinary Pedagogies

The intersection of integration and interdisciplinarity hinges on a crucial distinction. Multidisciplinary approaches align subjects or disciplines in parallel schedules or units. However, students do not necessarily have integrative experiences. Even when team teaching occurs, the teachers present their perspectives separately. Students gain breadth of knowledge, but explicit analysis

more comprehensive understanding. In integrative learning, perspectives emanate from disciplines, cultures, subcultures, or life experiences. In interdisciplinary studies, Newell stipulates, the perspectives come solely from disciplines, though today they may also come from interdisciplinary fields and paradigms. One of the distinctive features about experiential colleges, he adds, was combining strategies. A course in a living/learning community

might draw on several disciplines (interdisciplinary study), cultures (multicultural learning) and field experiences (service learning), while using collaborative and traditional learning formats (2001, 196–98).

The volume *Innovations in Interdisciplinary Teaching* underscores the “multiplicative power” of integrative strategies identified by Newell. The book highlights correspondences between interdisciplinarity and collaborative learning, feminist pedagogy, learning communities, multicultural pedagogy, team teaching, writing-intensive teaching, inquiry- and discovery-based teaching, and performance-based teaching (Haynes 2002). The following strategies also appear across all types of institutions today:

- team teaching and team planning
- clustered and linked courses, learning communities
- interdisciplinary core seminars at introductory and capstone levels
- thematic or problem focus in courses
- proactive attention to integration and synthesis, with process models theories and methods from interdisciplinary fields
- collaborative learning in projects and problem-based case studies
- integrative learning portfolios

Integrative interdisciplinarity reconceptualizes the roles of teacher and student alike. The traditional teaching functions of telling, delivering, directing, and being a sage on the stage are replaced by the models of mentor, mediator, facilitator, coach, and guide. James Davis’s image of “inventing

the subject” (1995) captures the movement teachers make beyond existing subjects and disciplines as they connect knowledge, information, methods, concepts, and theories in order to achieve a more comprehensive understanding. The process is constructivist at heart. Students are engaged in “making meaning.” Application of knowledge takes precedence over acquisition and mastery of facts alone, activating a dynamic process of question posing, problem posing and solving, decision making, higher-order critical thinking, and reflexivity.

A set of core capacities emerges from the intersection of the two concepts:

- the ability to ask meaningful questions about complex issues and problems
- the ability to locate multiple sources of knowledge, information, and perspectives
- the ability to compare and contrast them to reveal patterns and connections
- the ability to create an integrative framework and a more holistic understanding

Contextuality, conflict, and change are the defining parameters of this kind of learning. Contextuality is a different metaphor of knowledge and education than unity, which assumed consistent, logical relations within a linear framework with the expectation of achieving certainty and universality. Contextuality accepts the contingent character of knowledge and action. Students need to tolerate ambiguity and paradox if they are to take grounded stands in the face of multiple and sometimes conflicting per-

spectives. The relational skills they gain also foster the ability to adapt knowledge in unexpected and changing contexts. The answers they seek and the problems they will need to solve as workers, parents, and citizens are not “in the book.” They will require integrative interdisciplinary thinking. ■

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Interdisciplinary Academic Programs and Courses Support from HHMI enabled our Division of Natural and Applied Sciences to shift from research programs and curricula that were primarily discipline-focused to ...^Â Provenance: Hope College. Fostering Interdisciplinary or Integrative Learning. Interdisciplinary Academic Programs and Courses. Support from HHMI enabled our Division of Natural and Applied Sciences to shift from research programs and curricula that were primarily discipline-focused to include interdisciplinary programs that have led to interdisciplinary majors and minors. The first major effort was the creation of the biochemistry program in the early 1990s. Integrative learning is a learning theory describing a movement toward integrated lessons helping students make connections across curricula. This higher education concept is distinct from the elementary and high school "integrated curriculum" movement. Integrative Learning comes in many varieties: connecting skills and knowledge from multiple sources and experiences; applying skills and practices in various settings; utilizing diverse and even contradictory points of view; and, understanding issues. But interdisciplinary studies and integrative learning can achieve their full potential only if they are conceived in a way that values diversity of perspective, demands integration of insights, and embraces holistic as well as reductionist thinking. Only then are students prepared to meet the challenge of coping with complexity.