

## **Interdisciplinary Teaching and Learning in Higher Education**

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During the past 25 years in higher education, significant changes have occurred in teaching and learning. These changes were propelled not by a single engine, but by many different developments acting as levers – shaping attitudes, creating opportunities, and promoting shifts in policies, practices and programs. Together they provided the critical mass of momentum to enable higher education to make unprecedented strides in the development of teaching and learning generally and interdisciplinary teaching and learning specifically.

This chapter will begin with the numerous contextual factors that served as the preconditions for the current proliferation of interest in interdisciplinary teaching and learning in higher education. The chapter will then focus on the emergence and development of interdisciplinary curricula\* and content (a-disciplinary, developmental, multidisciplinary, interdisciplinary, transdisciplinary, and integrative; interdisciplinary disciplines, interdisciplines; interdisciplinary programs, majors, minors, clusters, liberal studies, integrative studies, independent studies, individualized majors, theme courses; multicultural and intercultural competencies, shift from focus on content to competencies, from atomized disciplinary ways of knowing to curricular coherence, connections, and integration, etc.); pedagogies (constructivist theories of teaching and learning; brain research on learning; experiential, field-based, problem-based and discovery-based learning; internships; study abroad; academic-service learning; freshman seminars, keystone and capstone courses; groupwork, collaborative and cooperative learning, e.g., jigsawing; inclusive pedagogies; world wide web and the internet; instructional technology and online learning; team-teaching, etc.); access to resources and texts; methods of assessment that enable integration generally and interdisciplinary integration specifically, i.e., writing across the curriculum and reflective writing, student portfolios and e-portfolios, behavioral performance measures and authentic assessment, etc.); and administrative structures (e.g., living-learning communities, learning communities, joint appointments, etc.) and faculty development (interdisciplinary curriculum development efforts, scholarship of teaching and learning, interdisciplinary scholarship of teaching and learning) efforts designed to support and promote interdisciplinary teaching and learning.

The chapter will identify changing patterns in best practices in faculty evaluation of teaching that support interdisciplinary teaching

(multidimensional approaches to the evaluation of teaching, teacher self-reflection, teaching portfolios, scholarship of teaching and learning). Discussion will include key features of interdisciplinary teaching and learning in undergraduate and graduate education. The chapter will conclude with support for interdisciplinary teaching and learning among higher education think-tanks, associations, organizations, and funding agencies, e.g., National Science Foundation.

Note: Broadly defined *curriculum* includes goals for student learning (skills, knowledge, and attitudes/dispositions); content (the subject matter in which the learning experiences are embedded); sequence (the order in which the concepts are presented); learners; instructional methods and activities; instructional resources (materials and settings); evaluation (methods used to assess student learning as a result of these experiences); and adjustments to teaching and learning processes based on experience and evaluation.