Chapter 9

Integrated Projects and the Development of Interdisciplinary Problem–Solving Strategies

Paul C. King
New York City College of Technology, City University of New York, USA

EXECUTIVE SUMMARY

Interdisciplinary problem solving and research skills require early preparation in two categories: critical thinking and communication. This chapter reviews the two-year process of interdisciplinary curriculum development, shaped by collaboration between the New York City Department of Education, the New York City College of Technology of the City University of New York, and City Polytechnic High School of Engineering, Architecture, and Technology. The resulting course, "Inter-Academy Integrated Projects" (IP), emphasizes multidisciplinary problem solving that includes creativity, observation, research, visual and discursive communication, and reflection. The collaborative lessons make use of project-based methodology and emphasize social responsibility. Core skills are combined across the two trimesters of IP. This endeavor will be contrasted and compared to the work of the Partnership for the 21st Century Skills by examining the use of high-impact learning practices, feedback from students and teachers, and the issues surrounding the implementation of any new curriculum.

ORGANIZATION BACKGROUND

City Polytechnic High School (City Poly) of Engineering, Architecture, and Technology is one of four State-approved Career and Technical Education (CTE) demonstration sites in New York City and has been named as one of 10 schools in New York City Chancellor Joel Klein's 21st Century Schools Initiative. The unique format of this CTE school is a 3 + 2 program in which students complete a full 4 years of high school learning in a three-year period followed by two additional years of college-level work at New York City College of Technology (City Tech). Successful candidates would then earn an Associate's degree.

With no scholastic admissions requirements, City Poly serves a predominantly minority and disadvantaged cross section of New York City High School students providing opportunities for college study and career pathways in engineering, architecture and technology related fields. City Poly opened its doors to its first 130 students in September 2009 and in the Fall of 2011 completed its second full year, run three summer programs and will be welcoming its third group of incoming freshman.

The City Tech-City Poly collaboration consists of members of the City Tech administration including the provost, City Poly faculty and principal, architectural technology and civil engineering technology faculty; CUNY's Early College Initiative; and the National Academy Foundation, which operates over 500 career academies in high schools nationwide. Funding for the project is through the Department of Education (DOE), CUNY and the Tortora Sillcox Family Foundation (see Figure 1).

Figure 1. Organizational diagram
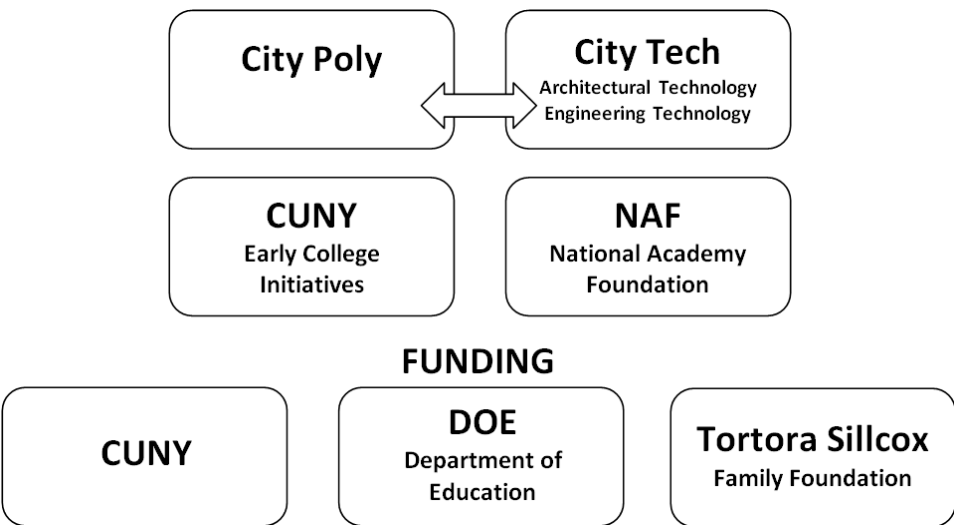
29 more pages are available in the full version of this
document, which may be purchased using the "Add to Cart"
button on the publisher's webpage: www.igi-global.com/chapter/integrated-projects-development-interdisciplinary-problem/70340

Related Content

Text Mining by Pseudo-Natural Language Understanding
Ruqian Lu (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 1942-1946).*
www.irma-international.org/chapter/text-mining-pseudo-natural-language/11085

Quantization of Continuous Data for Pattern Based Rule Extraction
Andrew Hamilton-Wrightand Daniel W. Stashuk (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 1646-1652).*
www.irma-international.org/chapter/quantization-continuous-data-pattern-based/11039

Dynamical Feature Extraction from Brain Activity Time Series
Chang-Chia Liu, W. Art Chaovalitwongse, Panos M. Pardalosand Basim M. Uthman (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 729-735).*
www.irma-international.org/chapter/dynamical-feature-extraction-brain-activity/10901

Bitmap Join Indexes vs. Data Partitioning
Ladjel Bellatreche (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 171-177).*
www.irma-international.org/chapter/bitmap-join-indexes-data-partitioning/10816

Stages of Knowledge Discovery in E-Commerce Sites
Christophe Giraud-Carrier (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 1830-1834).*
www.irma-international.org/chapter/stages-knowledge-discovery-commerce-sites/11067