

Chapter 4

Interdisciplinary Projects

ABSTRACT

This chapter addresses meaning of interdisciplinarity that draws a discussion on how to facilitate interdisciplinarity in problem-solving process in project groups. A case on development of a student satellite project at Aalborg University will be introduced that shows how interdisciplinarity is integrated into PBL in Denmark. This leads to a strategy of diverse levels of PBL models in Chinese universities. This further facilitates Chinese educators to rethink some implications for how to design interdisciplinary projects, how to develop effective self-managed groups, and how to develop interdisciplinary supervision.

INTRODUCTION

In 1930s, the Social Science Research Council in United States of America started to manage different issues of collaboration between more than two professional societies. This gave birth to the concept of interdisciplinary research (Klein, 1996). In later studies, Geertz (1980) did contributions to bring the concept of interdisciplinarity into the scientific discourse, which stated there were needs of developing ‘genre mixing’ in two domains of humanities and social sciences. Recently, interdisciplinarity has been suggested much as one of popular educational models (Klein, 2004; Zhou, 2012). According to Lattuca (2002), a definition that provides insights from a socio-cultural perspective to academic work is the following:

DOI: 10.4018/978-1-7998-3527-1.ch004

Interdisciplinary Projects

Interdisciplinarity - 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 interdisciplinary group consists of persons trained in different fields of knowledge (disciplines) with different concepts, methods, and data and terms organized into a common effort on a common problem with continuous intercommunication among the participants from the different disciplines.

From this definition, we may know that interdisciplinarity integrates disciplinary contributions and thus obscures the separate contributions of individual disciplines. The process of achieving integration reportedly requires identifying, evaluating, and rectifying differences between disciplinary insights to achieve a new understanding. Such cognitive achievement is not possible without integration of synthesis of disciplinary methods, knowledge, or insights into something new (Marquez et al., 2011). This involves the informal communication of ideas, such as might occur in a conversation between colleagues from different disciplines; it also involves formal collaboration, such as research or teaching teams comprised of one or more faculty from different disciplines (Hansson, 1999).

Accordingly, interdisciplinarity leads to the expectation that interdisciplinary learning will develop the learner's cognitive skills, including high-order thinking (Zhou, 2012). As Mansilla (2010) addressed, interdisciplinary learning is a process by which individuals and group integrate insights and modes of thinking from two or more disciplines or established fields, to advance their fundamental or practical understanding of a subject that stands beyond the scope of a single discipline. So challenging interdisciplinary learning often demands collaboration. Research on group learning has addressed dimensions that range from leadership to group composition, from dilemmas of power to the nature of tasks, from the construction of trust to challenges of communication. However, studies on interdisciplinary pedagogy suggest that interdisciplinary teaching and learning requires a host of powerful pedagogies to inspire and enable teachers and students to grapple effectively with the complexity of problems we face in current society. This work is challenging for students, but in many ways, it is even more challenging for faculty who will be crossing borders and charting new terrain in higher education, leaving

27 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/interdisciplinary-projects/265636

Related Content

Authentic Online Branching Simulations: Promoting Discourse around Problems of Practice

Eric Bernstein, Sarah A. McMenamin and Michael C. Johaneck (2018). *Student Engagement and Participation: Concepts, Methodologies, Tools, and Applications* (pp. 1197-1216).

www.irma-international.org/chapter/authentic-online-branching-simulations/183560

E-Tutor Perceptions towards the Star Rural Area E-Learning Project

Chiung-Wei Huang and Eric Zhi Feng Liu (2015). *International Journal of Online Pedagogy and Course Design* (pp. 20-29).

www.irma-international.org/article/e-tutor-perceptions-towards-the-star-rural-area-e-learning-project/120662

Developing an Assessment Program to Measure Critical Thinking: A Case Study at a Small, Online College

Caulyne N. Barron (2020). *Learning and Performance Assessment: Concepts, Methodologies, Tools, and Applications* (pp. 268-290).

www.irma-international.org/chapter/developing-an-assessment-program-to-measure-critical-thinking/237532

Exploring the Reading Experiences of High School Students on E-Book Reader

Yu-Chung Cheng, Wen-Hung Liao, Tsai-Yen Li, Chien-Pao Chueh and Hsiao-Ching Cho (2013). *International Journal of Online Pedagogy and Course Design* (pp. 17-32).

www.irma-international.org/article/exploring-reading-experiences-high-school/75539

Expanding Learning Opportunities for Graduate Students with HyFlex Course Design

Mariam Mouse Matta Abdelmalak and Julia Lynn Parra (2016). *International Journal of Online Pedagogy and Course Design* (pp. 19-37).

www.irma-international.org/article/expanding-learning-opportunities-for-graduate-students-with-hyflex-course-design/162681