Chapter 18
Retaining Disciplinary Talents as Informal Learning Outcomes in the Digital Age:
An Exploratory Framework to Engage Undergraduate Students with Career Decision-Making Processes

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ABSTRACT

Considering the national need for developing a variety of professional talents through higher education, this chapter proposes an exploratory conceptual framework, to allow educators and parents to harness informal learning opportunities afforded by virtually endless resources on the Internet, in order to engage undergraduate students with necessary career decision-making processes early on in their college experience. The thesis of this chapter asserts that we must consider students' career decision-making processes as a relevant higher education learning outcome. The proposed Digital Informal Learning Resources for Career Decision-Making (DILR-CDM) framework is grounded in the Social Cognitive Career Theory and the Self-Determination Theory to identify attributes of informal learning resources manifested by digital game-based environments and social media environments. These attributes, in turn, afford informal learning opportunities to scaffold and facilitate career decision-making processes among undergraduate students.

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INTRODUCTION

Review of Recent Statistics on Un-declared Undergraduates and their Graduation Rates

The number of college students has been increasing; yet, substantial percent of enrolled students do not complete their college education in a timely manner. According to the *Digest of Education Statistics*' 2012 report published by the Institute of Education Sciences (IES), 21 million students are enrolled in post-secondary school and a further increase of 13 percent is expected by Fall 2021 (Snyder & Dillow, 2013). In a four-year university, the total enrollment of undergraduate students in 2011 was over 10 million. In 2010-2011, more than 1.7 million bachelor's degrees were conferred; however, only approximately 59 percent of first-time, full time students attending a four-year institution in 2005 had completed a bachelor's degree or its equivalent at that institution within six years (Snyder & Dillow, 2013). The rate of completion within four years after starting college is even lower, representing approximately 39 percent of the total enrollment.

One of the potential issues causing students' delay in or lack of completion of college education is that students do not know what a relevant major is for them and what career they would like to pursue when they begin their college education. No matter whether students declare their majors or not as freshmen, they also change their majors. Researchers' claims are inconclusive regarding the effect of students' changing their majors on their GPA or retention (persistence to graduation); however, changes in majors do result in delays in their graduation (Cuseo, 2005). In fact, according to a 2012 institutional report (Colorado State University, 2012), it was observed that, compared to older cohorts, an increasing proportion of recent students tend to change their majors more than once before graduation. For example, only 40% of declared students graduate in their original majors. And, approximately 50% of undeclared students seeking (a specific major) and undeclared students only change their majors once. For students, each change in major increases the average time to graduation by over a half semester. In addition, when comparing the average time to graduation by the number of major changes (zero to three times), it takes longer for undeclared students to graduate compared to declared students. Although statistics may differ across institutions, a substantial percent of students enter college without knowing their interests and pursuit of an academic and career direction. Moreover, even declared students do not make decisions on a major based on neither an in-depth reflection about themselves nor research in the field on career they want to pursue (Freedman, 2013, June 28). Accordingly, these changes delay students' time to graduation at the college where they started, cause students to change institutions, and even result in incompletion of a college education, which is a problem at individual, institutional, and societal levels, considering the enormous amount of time and cost invested in the undergraduate education of a single student during those years. Moreover, increasing number of college graduates has difficulties in finding their first employment. For instance, from 2009 to 2011, less than 50% of college graduates found their first job within one year after their graduation. This is a significantly decreased employment rate of college graduates compared to 2006-2008 data (73%) (Blau & Snell, 2013). Such delay in gaining employment among college graduates has further implications on the sustainability of workforce development.

Concerns Related to Workforce Development beyond Science, Technology, Engineering, and Mathematics (STEM)

A central mission of higher education is to develop talents for meeting the needs for the workforce development. Whether it is a four-year or two-

The Mechanism of Flipped Classroom Based on Cognitive Schemas
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