Cooperative Education:
A Critical Link between Post Secondary Education and Beyond

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COOPERATIVE EDUCATION: A CRITICAL LINK BETWEEN POST SECONDARY EDUCATION AND BEYOND

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ABSTRACT

A new role was proposed for cooperative education programs that will enhance higher education institutions' ability to provide mode 1 and 2 knowledge within a globalized knowledge economy. The two modes of knowledge are respectively defined as knowledge for the sake of knowing and knowledge for the sake of human use in solving real problems. In the knowledge economy the concept of effective learning does not distinguish between theory and practice because they are both seen as learning and can be bridged using cooperative and experiential learning. Cooperative education is an example of experiential learning. However, for cooperative education to fulfill its role in cognitive apprenticeship, it would need to be modified to be more measurable. To that end a study was conducted of a medium-sized urban university's 2001-02 through 2005-06 cooperative education internship and full-time employment data of computing students. Two basic assumptions were made: 1) the more cooperative education experience a student has in the same company, the greater is the student's full-time employability and 2) the more degree-related cooperative education experiences a student has, the greater is the student's degree-related full-time employability. From these assumptions cooperative education and full-time codes were constructed. It was hypothesized that the codes represent two unique constructs and that the correlation between the codes would be greater when the internships and full-time jobs were related to students' majors. The study findings substantiated these hypotheses. It was concluded that the codes used in the study would be useful in the development of quantitative cooperative education internship evaluations.

KEYWORDS

Cooperative education, knowledge economy, globalization, vocational education, core competencies, authentic assessment, work-based skills, curriculum development
INTRODUCTION

Over the past 30 years, globalization facilitated by neoliberal economic policies and advancement in electronic technologies has impacted the world economy and education by the development of the new knowledge economy in which knowledge is viewed as capital (Olssen & Peters, 2005) and information is an asset. Under this schema, knowledge is subdivided into two main functional forms: mode 1 and mode 2 knowledges (Olssen & Peters, 2005; Boud & Solomon, 2001). These two dimensions can be viewed respectively as knowledge for the sake of knowing and knowledge for the sake of human use in solving real problems. In this knowledge economy, education plays a central role; learning is the main tool for advancement and learning by doing is especially important (Olssen & Peters, 2005; Boud & Solomon, 2001; Berryman and Bailey, 1992). This realignment of education and the economy indicates that there are no longer clear "distinctions between the university and the workplace" (Boud & Solomon, 2001, p. 23) and that the university is "a business involved in the commoditization and marketization of education and learning" (Boud & Solomon, 2001, p. 26).

CHALLENGES AND SOLUTIONS FOR THE WORKPLACE AND HIGHER EDUCATION

The core competencies of an organization are the foundation upon which it is built (Prahalad and Hamel, 1990). The core competencies of higher education institutions are situated in the skills and expertise of their faculty and staff together with supportive infrastructures and technologies that are transformed and manifested into each institution’s unique core products of specialized teaching, research, and service. Moreover, the skills and expertise inherent in the institution’s core competencies must be continually cultivated and stimulated, as well as kept in alignment with the underlying economic system.

The core competencies of academe are built around mode 1 knowledge and its production. Therefore it seems that academe needs to adequately produce high quality mode 2 and mode 1 knowledge in order to satisfy the demand of the knowledge economy and that of itself in the dissemination and production of mode 1 knowledge while remaining competitive in the marketplace. In the conceptualization of effective learning (Berryman and Bailey, 1992), there is no distinction "between academic and vocational education ... learning is learning" (Berryman and Bailey, 1992, p. 86). Effective learning is a purposeful metacognitive (Bransford et al, 2000) activity involving inquiry-based active learning techniques. Berryman and Bailey (1992) argued for a model of effective learning called cognitive apprenticeship, the main components of which are "content, method, sequencing, and sociology" (Berryman and Bailey, 1992, p. 89), where sociology involves the inclusion of relevant and practical problem solving of workplace situations into the learning experience. A good example of sociology is a well-conceived cooperative education program.
LINKING THE ACADEMIC TO THE VOCATIONAL

Firms as well as higher education institutions need to develop and nurture the knowledge, skills, and expertise that are germane to their core competencies. This suggests the increasing need for these organizations to collaborate in cost-effectively educating and training their personnel in the relevant capabilities. These collaborations can be leveraged through cooperative education.

The best traditional cooperative education programs complement their corresponding academic programs, facilitate student-firm interaction, and provide student and employer program evaluations, where a successful outcome is full-time employment of positively evaluated interns by participating employers (Tobias, 1996). Program design can be augmented to include a transaction orientation (Van Gyn, 1994) thereby producing a cognitive apprenticeship variant with formalized opportunities for growth in academic and work-based problem-solving skills that are assessed by professors, program coordinators, and employers. Moreover, these programs’ evaluations can be further improved by the development of standardized quantitative methods for assessing the theoretical and experiential components of internships.

ANALYSIS OF A TRADITIONAL COOPERATIVE EDUCATION PROGRAM

The researchers conducted a study of cooperative education and full-time employment data spanning 2001-02 through 2005-06. Sixty-eight students had matched data. Two basic assumptions guided the analysis:

1. The more cooperative education experience a student has in the same company, the greater is the student's full-time employability.

2. The more degree-related cooperative education experiences a student has, the greater is the student's degree-related full-time employability.

The researchers developed cooperative education (coop) and employment (full-time) codes and tested two hypotheses:

1. The coop and full-time codes represent two unique constructs.

2. The correlation between the coop and full-time codes would be greater when the internships and full-time jobs were related to students’ majors.

The unit of analysis was coop per term. The sample was divided into nine sub-samples to better assess the impact of coop characteristics on full-time job outcomes.
Findings and Implications

Most students had one coop lasting less than 3 terms and 57% obtained full-time jobs from their coop employers. The samples had non-normal characteristics therefore the Wilcoxon Rank Sum significance test at the 0.05 level was used to assess the difference between the two codes. In all of the sub-samples the coop and full-time codes were significantly different. The correlation of the full-time and coop codes for the total sample was 0.60, the highest correlation 0.95 was attained for students whose internships were generally related to their majors, and the lowest correlation 0.22 was for the students with more than one coop. These data indicate that the greater the diversity of the number of coops within a sub-sample the more likely the correlation (r) between the coop and full-time codes would be weak; i.e., r<=0.5.

CONCLUSION

The researchers proposed a new role for cooperative education programs that will enhance higher education institutions' ability to provide a more effective mix of mode 1 and 2 knowledge. The study findings provide two potential constructs for use in developing quantitative measurements of experiential internships. The finding that the highest correlation between the codes was in the sample whose coop internships were generally related to their majors reinforces employers' stated need for generalized college-educated students in our globalized knowledge economy.
<table>
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<th>Sample and codes</th>
<th>Total sample full-time codes</th>
<th>Students with one coop full-time-codes</th>
<th>Students with more than one coop full-time-codes</th>
<th>Students whose co-op job was generally related to their majors full-time codes</th>
<th>Students whose full-time job was in the same company as their co-op jobs full-time codes</th>
<th>Students whose full-time job was in a different company from their co-op jobs full-time codes</th>
<th>Students whose full-time job was related to their major full-time codes</th>
<th>Students whose full-time job's relationship to the students' major was unknown full-time codes</th>
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REFERENCES


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*Endnotes*

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