Heterogeneous Skill Growth across College Majors

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December 17, 2018

Abstract

There is a large literature on differential wage returns across college majors, but few studies focus on skill growth by major. Differences in course taking by major will result in students accumulating different types and amounts of skills, and this heterogeneous skill growth will lead to differences in wage returns. This paper estimates skill growth during college by major using the NLSY97 and the O*NET. To capture both the type and quantity of accumulated skills, I assume that each major produces a general cognitive skill and a major-specific skill. I further allow for individual heterogeneity in skill growth. I take a task-based approach and use occupation choice to estimate skill growth in general cognitive skill. To deal with noisy skill measurements and endogeneity, a dynamic factor model is constructed. The results show substantial growth of general cognitive skill in all majors, but with large differences across majors. I find different effects of pre-college skill levels on skill growth by major, but the differences are not large. The contribution of major-specific skill growth to wage growth is small compared to that of general cognitive skill growth.

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