
On-the-Job-Training

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Abstract

The analysis of how individuals obtain and are paid for their skills is fundamental to labor economics. The basic idea of human capital theory is that workers and firms invest in workers' skills in order to increase their productivity, much as persons invest in financial or physical assets to earn income. Workers develop many skills through formal education not tied to an employer, but an important part of their skills are learned on the job. This paper is a survey of the recent literature on on-the-job training, both theoretical and empirical.

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1

Introduction

The analysis of how individuals obtain and are paid for their skills is fundamental to labor economics. The basic idea of human capital theory is that workers and firms invest in workers' skills in order to increase their productivity, much as persons invest in financial or physical assets to earn income. Workers develop many skills through formal education not tied to an employer, but an important part of their skills are learned on the job. This paper is a survey of the recent literature on on-the-job training, both theoretical and empirical.

While the roots of human capital theory (including the metaphor of skills as capital) go back at least to Adam Smith (1904) modern human capital theory was developed in the late 1950s by such economists as Theodore Schultz (1962), Jacob Mincer (1962), and Gary Becker (1962). For a period of some two to three decades, the theory of on-the-job training was dominated by Becker's (1962) analysis of general and specific human capital. Empirical work followed the lead of Mincer (1962, 1974), who imputed the amount of on-the-job training from wage-experience profiles.

Because data on the actual amount of on-the-job training were not available, Mincer's attempts to measure such training were indirect.

2 *Introduction*

In the last two decades, as datasets with information on training have become more plentiful, researchers using direct measures of training have been able to examine its effects and test human capital theory. Simultaneously, partly in response to empirical findings and partly in response to advances in the analysis of the relationship between workers and firms, theorists enriched and in some cases contradicted the Becker model. We focus on this later literature—empirical work using direct measures of training and theoretical papers inspired by findings from such empirical work.

One of the clear predictions of the Becker model is that workers will bear all the costs and reap all the returns to general training, rather than sharing costs and returns with employers. We discuss several strands of empirical results that cast doubt on this conclusion. We develop a theoretical model similar to others in the literature showing that costs and returns to general human capital may be shared if training increases mobility costs, if there are constraints on lowering wages, or if there is uncertainty about the value of training at competing employers.

Our model also allows us to analyze the choice of the amount of training, where we emphasize the influence of whether the employer can commit to training prior to employment. In addition, the model implies that firms will attempt to match low-turnover workers with training opportunities, an implication we find much empirical support for in the literature.

The development of datasets with direct measures of training has allowed researchers to examine the effects of training on wages and productivity. We examine the many potential biases in estimating training effects. Longitudinal data allow researchers to overcome many of these biases. After correcting for most forms of bias, we conclude that the weight of the evidence is that the average rate of return to formal training for the trained is quite high; one reasonable estimate is in the neighborhood of 50% for workers with the median (positive) amount of training. However, no good estimates exist for the return to training for workers on the margin of being trained, or for the marginal return to training for trained workers. Productivity returns to training are found by virtually all researchers to be higher than wage returns.

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