



# A Critique of Human Capital Theory from an HRD Perspective

■ Gary N. McLean  
■ Min-Hsun Christine Kuo

**Abstract.** *While much has been written about human capital theory (HCT), including critiques of the theory, and while many countries, especially those in Asia, are highlighting their human capital policies, a critique of HCT has seldom been addressed from an HRD perspective. This article addresses the strengths and weaknesses of HCT, with weaknesses outnumbering strengths. As a result, the emphasis on HCT that is found in much of the HRD literature, especially as a foundation for HRD, may be poorly placed. Implications of this critique for HRD are offered.*

**Keywords:** Human Capital Theory, HRD, Critique

During the last half of the twentieth century, one of the more insightful explanations for economic progress in industrialized nations was the recognition of human resources as the wealth of nations (Harbison, 1973). The growth of the U.S. economy stems in part from the contributions of the nation's human resources. Of the six sources that Denison (1985) identified as making positive contributions to U.S. economic growth from 1929 to 1982, labor inputs accounted for 47%. Carnevale (1983) found that 75% of the improvement in productivity in the U.S. since 1929 could be attributed to human resource development (HRD) activities, such as on-the-job training, education, formal training, and health. One aspect in both the public and private sectors contributing to economic success has been the role of investing in human capital through the training of the workforce, resulting in growth in employment, job productivity, competitiveness, economic development, and increasing social returns (Acemoglu, 1996). How does a nation create a workforce that is able to compete in markets that are increasingly complex and dynamic?

There is widespread belief that investments in education and training lead to an increase in business productivity (Black & Lynch, 1996), and this, in turn, leads to a rise in the salary received. This has led several theorists (Sweetland, 1996; Strober, 1990) to propose what has become known as the human capital theory. The purpose of this article is to examine the construction of human capital theory, presenting both its strengths and weaknesses from an HRD perspective, followed by a discussion of the implications of this critique for HRD policy and practice.

## Statement of the Problem

One of the challenges facing developmental economists, especially in the post-World War II era, has been trying to identify the factors that have contributed to differences in productivity and economic development among countries. In addition to natural resources, HRD and similar words have been identified as contributors, and perhaps even the key, to economic progress.

The concept of human capital was introduced to study labor allocation and income determination. This concept has been instrumental in advocating for the need to recognize the importance of HRD in its macro-economic sense, as the key response to structural change in the economy (Briggs, 1987). This concept of human capital led to the development of human capital theory (HCT), a concept that has often been embraced by HRD theorists, but which has also been subjected to considerable criticism.

Assumptions and applications of human capital as an economic foundation for HRD in the contemporary workplace have been repeatedly challenged, and previous researchers have asserted



that HRD's understanding of HCT was intuitive and superficial (Dobbs, Sun, & Roberts, 2008). In this article, we summarize the origins of HCT with its basic premises, explore its strengths and weaknesses, and discuss the implications of this critique of HCT for HRD. We also suggest additional efforts needed, both in practice and in research.

## Research Question

The purpose of this article is to suggest, through descriptive inquiry, synthesis of literature, and analysis, a critique of HCT and to draw implications of HCT for HRD. This study: a) summarizes the constructs of HCT; b) describes the evidence related to HCT; and c) identifies the implications of this critique for HRD. Therefore, the research questions for this study are: What is the current evidence regarding the efficacy of HCT? What are the implications of this critique of HCT for HRD?

### Definitions

Below, we provide definitions of human capital and HRD.

#### *Human Capital*

While human capital has often been defined and measured with reference to acquired cognitive skills and explicit knowledge, a broader notion of human capital, including attributes, more adequately reflects how various non-cognitive skills and other attributes contribute to well being and can be influenced and changed by the external environment, including learning. Thus, human capital is defined here as "the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being" (Organisation for Economic Co-Operation and Development (OECD), 2001, p. 18).

#### *Human Resource Development (HRD)*

The current HRD framework has been mainly nurtured in the U.S., but a U. S. perspective alone cannot represent the entire field of HRD (McLean & McLean, 2001). So, it is necessary to make HRD a more globally accepted and applied field by drawing on perspectives from different cultures. Based on input from several countries, McLean and McLean (2001) offered the following definition:

Human resource development is any process or activity that, either initially or over the long term, has the potential to develop...work-based knowledge, expertise, productivity, and satisfaction, whether for personal or group/team gain, or for the benefit of an organization, community, nation or, ultimately, the whole of humanity. (p. 322)

## Research Methods

By following Torraco's (2005) suggestions, we conducted a critical analysis in writing this integrative literature review. Because there has been extensive data collected in the area of HCT by other researchers previously, but in fields other than HRD, this article focuses on a review and analysis of literature from across a broad range of literature identified through a search of Google Scholar and the electronic library systems of our universities in the U.S. and Taiwan. To develop the arguments extended in this article, the historical background, assumptions of the main concepts, and the limitations of HCT were assessed.

### Background of HCT

This section presents our literature review on HCT, with examples provided, in part, from personal observations and experiences.

#### *The Roots of HCT*

The origins of HCT were in the writings of prominent early economists, such as Adam Smith, John Stuart Mill, and Alfred Marshall. Smith's (1776/1952) two principal components serve as the foundation of all human capital frameworks:



1. Labor inputs are not merely quantitative. They qualitatively include “the acquired and useful abilities of all the inhabitants or members of the society” (p. 119), as well as “the state of the skill, dexterity, and judgement with which labour is applied” (p. 1).

2. Ability acquired through “education, study, or apprenticeship, always costs a real expense, which is a capital fixed and realized, as it were, in ... person” (p. 119).

Adam Smith, regarded as the father of economics, was best known for his famous writing, *Inquiry into the Nature and Causes of the Wealth of the Nations*, which appeared in 1776. Although Smith never explicitly mentioned human capital in his writing, he appears to have been one of the first to point out the importance of human skills as factors of production. The opening paragraphs of Smith’s (1776/1952) book proclaimed that human effort lies at the root of all wealth:

The annual labour of every nation is the fund which originally supplies it with all the necessities and conveniences of life which it annually consumes, and which consist always either in the immediate produce of that labour, or in what is purchased with that produce from other nations.... The number of useful and productive labourers, it will hereafter appear, is everywhere in proportion to the quantity of capital stock which is employed in setting them to work, and to the particular way in which it is so employed. (p. 1)

In the era of the Industrial Revolution, when there was a shift from agriculture to machines with a shortage in labor supply, Adam Smith offered a possible solution: division of labor. It was not the number of workers that determined the high level of productivity but the division of labor. The sources of human capital, according to Smith, are twofold: experience associated closely with the specialization of activities in an economy based on division of labor and education realized mainly in schools and college or through arrangements such as apprenticeship (Spendgler, 1977). Nevertheless, Smith never claimed that humans were capital; rather, he saw human skills as the capital that could be developed through education.

Mill (1926), in criticizing HCT, indicated that, before including anything in the definition of wealth, a market exchange to determine value is necessary. Mill valued human abilities as economic utilities and acknowledged that all activities that lead to human improvement must be included.

On the contrary, Marshall (1948) adopted a broad concept of human capital: “We may define personal wealth so as to include all those energies, faculties, and habits which directly contribute to making people industrially efficient” (p. 58). Compared with Smith, both Mill and Marshall pursued a stricter definition of capital.

The early conceptualization and advancement of HCT resulted primarily from the efforts of economists. From these efforts, human capital analyses evolved from research in several specialized areas of economics, such as labor economics, public sector economics, welfare economics, growth theory, and development economics (Blaug, 1970).

### ***The Evolution of HCT***

Whereas HCT is generally considered to have been officially established in 1960 (Blaug, 1976), significant research supporting the concept of HCT was conducted throughout the previous decade (Blaug, 1966). The phrase, “human capital,” and its foundation appear to have been developed by Becker in his 1964 book, *Human Capital*. Becker’s book was based on his earlier study attempting to determine if national expenditure on higher education was adequate and if U.S. American college student quality could be improved. In the conclusion of his study, Becker was compelled to report that the direct returns on college education alone did not seem to justify increased college expenditures (1960). Further, Becker asserted that investments in college education provided indirect returns in addition to direct returns. Although Becker was unable directly to support his hypothesis—that there was evidence of underinvestment in college education--the design of his study provided an important methodology for analyzing human capital investments.

Resources that are embodied in people are capable of generating income. The analogy with physical capital emphasizes that these resources can be increased through investment. Becker



(1964) exemplified the theoretical and empirical analysis of human capital with special reference to education. He specified that education increases skills, and these, in turn, increase productivity; higher productivity is then rewarded through higher earnings. HCT also proposes a specific rationale for the positive correlation between age and earnings; people who are older earn more because they have more on-the-job experience or training. As with education, on-the-job experience or training is said to make workers more productive, and, because they are more productive, they are paid more. Therefore, HCT seeks to bridge the gap between income determination and income distribution by asserting that variations in the human capital investments of individuals explain variations in individual income. Thus, general expenditures on education and training can enhance opportunities for higher incomes for labor force participants.

From the early 1960s, increasing attention has been paid to the quality of labor, particularly the level of education and training in the workplace. This gave rise to the concept of human capital embodying skills and other attributes of individuals (OECD, 2001). OECD defined human capital as “the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being” (p. 18). Notably, human capital resides in individuals; learning and the acquisition of skills and knowledge take place from birth to death for each individual.

During the 1960s, in the work by Schultz (1963), the idea of HCT was further developed in *The Economic Value of Education*. Initially, HCT asserted that the market compensated the individual for the cost of education. In the 1970s, Mincer (1974) extended this thought in his book, *Schooling, Experience, and Earnings*.

### ***Importance of HCT***

The connection between HCT and Nobel Prize awards is perhaps more impressive than the formal publication record (Sweetland, 1996). Since 1971, five Nobel prizes have been awarded to scholars in, or affiliated with, HCT (Becker, 1993). The Nobel distinction belongs to Schultz and Becker, the two most prominent scholars of HCT, for pointing out the importance of human capital to economic growth. The other recipients were Milton Friedman, Simon Kuznet, and M. Solow (Sweetland, 1996).

Becker’s work in 1962, a book that won him the Nobel Prize, called *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, has been considered by some to be foundational to HRD (Swanson & Holton, III, 2001). Breit and Hirsch (2004) quoted Becker’s response to the controversy over the term, human capital:

Actually, I debated a long time before I used the title Human Capital because I had been aware that people said that if you call it “capital” you are treating human beings as if they had no soul. Some people would make fun of it and call it “human cattle,” suggesting that one is not treating humans as individuals. I knew that, and could have weaseled a little and called it “human resources,” a phrase that was becoming common at the time. I decided to take the bull by the horns and title the book Human Capital, although it had this long subtitle to protect myself a little. (p. 261)

According to Becker (cited in Breit & Hirsch, 2009), the success of human capital is based on the following:

In essence, human capital analysis puts individuals at the center of attention in the economy ... It is people who move economy, people who determine whether an economy is rich or poor; human capital as a major aspect of productivity and well-being of people. And it is investment in human capital, by acquiring skills from one’s parents, through going to school, or through training and knowledge in the workplace, that helps determine a person’s and an economy’s stock of human capital wealth. (p. 262)

Human capital is developed in the context of learning within the family and early childcare settings. In addition, formal education and workplace training also develop human capital. Human capital is also developed in the context of informal learning on the job and in daily living and civic participation (OECD, 2001). This approach to human capital helps us to understand that human capital is not like physical capital. In knowledge-based economies, such as we face today, human



capital calls attention to how important human resources have become: “human capital theory has become the prevailing wisdom within academic and business circles for explaining the economic success of individuals, firms and nations” (Ho & Alcorso, 2004, p. 238). In their study of challenges for successful migrants and employment, Ho and Alcorso emphasized the importance of human capital. While physical capital (mechanisms) tends to depreciate through use, human capital tends to depreciate through lack of use. Human capital is accumulated, developed, and improved through use and experience.

## Assumptions of HCT and a Critique of Assumptions from an HRD Perspective

We are not the first to raise questions about HCT; researchers from various fields have identified problems with Becker’s HCT (Dobbs, Sun, & Roberts, 2008; Kessler & Lulfesmann, 2006; Leuven, 2007; Leuven, Oosterbeek, Sloof, & Klaveren, 2003; Loewenstein & Spletzer, 1999). Our identification of problems is from an HRD perspective.

### *Expenses Associated with Education and Training Should Be Treated as an Investment rather than a Cost*

According to HCT, the expenses associated with education and training should be treated as an investment rather than a cost. Many people believe that getting a good education can get them a good job. HCT proposes that educational level is positively correlated with income. What is more, it specifies that education increases skills that, in turn, increase productivity, and higher productivity is then rewarded through higher earnings (Becker, 1964; Mincer, 1974).

Research supports the premise that participation in education and training is related to positive and significant wage effects—though not perfectly. It is believed that schooling enhances worker productivity (Bowles & Gintis, 1975); HCT provides some support for rising wages with employee experience and differential wages across occupations.

Yet, there is far from a perfect correlation between education/training and wages. Researchers long ago, back to the 1970s, have raised the question of whether there is a positive net return for human resource investment from education (Bowles & Gintis, 1975). For example, schooling increases worker productivity through increasing individuals’ cognitive capacities. But, because learning abilities differ, the theory is substantially incorrect.

Further, the nature of the education and training may influence whether workers are more productive and whether the costs associated are an investment or a cost. For example, students graduating with a four-year college degree in a discipline for which there is no market are likely to have incurred a cost rather than an investment. Such graduates, who become wait staff or retail clerks, are not likely to have increased productivity when compared with those without the four-year degree. Likewise, when training is offered that is not relevant to the workplace experience, as is often done when fads are pursued, it is, indeed, a cost and not an investment.

### *People are rational and will make rational decisions. Thus, people make decisions about education solely on the basis of utility (return on investment), free of society and culture.*

Another principle of HCT that is questionable is the assumption that people make rational decisions. People do not always make rational decisions when considered solely from an economic perspective. Labor skills are embodied in human beings. Problems arise because there is a possible divergence of interest between decision makers (parents of the students) and recipients of the investment (students).

Further, not all decisions about education are driven by expectations of financial returns. If they were, we would not likely have teachers or social workers or clergy or any of the other occupations for which there is a marked difference in financial return on the years of investment needed in higher and graduate education. People have many motives for pursuing education that go far beyond





economic return. For instance, some seek education for the sole sake of being educated (e.g., liberal arts graduates); some seek education for prestige or tradition (e.g., Korean Ph.D.'s); some seek education out of personal interest (e.g., art or music majors); some seek an education for better self-understanding (e.g., psychology or counseling majors); some use education to find a spouse, to self-quality, or for leisure. Some seek education solely to prepare themselves to make a contribution to society, either domestically or internationally (e.g., acquiring a second language to do volunteer work in a developing country in which knowledge of that language is required).

In addition, to challenge HCT, Strober (1990) asked two questions: a) Do education and experience raise earnings by raising productivity, or are education and experience correlated with earnings as a result of other behavioral relationships? and b) to what extent does human capital theory explain earnings differentials by race and by gender? HCT does not even address this second question. In conclusion, Strober asserted that HCT did not take demand-side forces into account, while both supply and demand sides operate together in labor markets. Because of this, there is not a perfect correlation between education/training and wages.

When predicting the effects of changes in monetary benefits and costs of students' enrollment on education, the human capital model has explanatory power. Yet, due to differences in other factors, the effects vary across individuals (Paulsen, 2001). The productivity and income of individuals are determined by many other factors, such as individually differentiated natural talents, individually differentiated degree of personal motivation and efforts at work, age and physical condition of an investor in human capital affecting the possibility of acquiring and using skills and education, and so forth. And, how about the role of networks and friendships for employment and advancement, as described in social capital theory? Obviously, HCT ignores the role of social capital theory in the correlation between education/training and utility. Consequently, because of these complexities in determining the correlation between education/training and wages, return on investment in human capital is much more complicated than calculating the return on investment in physical investments.

*Labor markets are freely competitive.*

HCT was grounded in a neoclassical framework that assumed that inside capitalist enterprises supply and demand took place in perfectly competitive markets (Baptiste, 2001). Harrison (1972) found that many workers, especially in times of difficult economic situations, often already have human capital endowments that exceed the limited range of jobs that are available to them. HCT fails to recognize the significance of complex factors that influence labor market operations. Ginzberg (1984) criticized HCT as naive in believing that the human capital approach is a positive theory that is free of normative judgments than any other theoretical approach.

HCT provides some support for rising wages with employee experience and differential wages across occupations. Yet, HCT does not take into account societal factors influencing the labor market, e.g., ethnicity, gender, language, and perception of education in the country of origin. In addition, just to name a few, the following keep us from having a freely competitive labor force: immigration policies, state and federal licensure requirements, apprenticeship requirements, labor union control over labor markets, illegal occupations, requirements of professional organizations, government control over internal mobility and job choice, impact of monopolies and oligopolies, and so on. Barros and Alves (2003) analyzed the determinants of sports managers' earnings. They blended human capital theory and social capital theory and found that both human and social capital are important determinants of earnings. Sports managers need to pay attention to schooling but must not discount attention to social factors. These results contradicted the initial assertion of HCT that the market compensates for the cost of education (Mincer, 1974); rather, social capital theory has asserted that the market also compensates for social ties and networks (Coleman, 1990).



*General and specific training are the responsibility of different entities.*

Human capital in the form of skills may be more or less productive depending on where it is employed. In Becker's discussion of general and specific training, there is a distinction between general skills and specific skills. Reading, writing, and communication skills can be considered as general skills, as they are skills that have a productive value in many different firms. Specific skills, in contrast, are valuable only when the worker is employed in a particular firm and include, for example, operating specific machinery.

General training, according to this assumption, accrues to the benefit of the individual and society, but to the company only so long as the worker chooses to stay in the organization; so employees are expected to pay all costs. Specific training accrues to the benefit only of the organization, not the individual or society, except as it provides employment; as such, the organization absorbs all of these costs.

One of the limitations of HCT is Becker's assumptions about general and specific training investment. However, research does not support Becker's assumptions regarding general and specific training. Leuven et al. (2003) showed empirical evidence that employers gained benefit from investing in both general and specific training of employees; Loewenstein and Spletzer (1999) found that employers needed to invest in both general and specific training of employees. Kessler and Lulfesmann (2006) also found that employers typically invested in both general and specific training.

In addition to general and specific training, a third possibility, not encompassed by Becker's discussion of general and specific training, is the case of transferable skills (Stevens, 1994). Even when skills are developed specifically for a company's needs, those same skills are often transferable to other organizations, especially within the same industry.

Not only do companies benefit in productivity from both general and specific training, the labor market also demands that employers provide both general and specific training. The extent of training and development offered by a company is often a factor in attracting the best talents. With this offering, a company may be able to get and keep the best employees. Nowadays, in the knowledge-based economy, general education is also widely subsidized with government funding and compulsory schools.

*Economic growth emanates from education*

According to HCT, economic growth emanates from education. On the surface, HCT seems logical. However, many factors besides education contribute to economic growth. When diagnosing labor market outcomes and when applying this analysis to subgroups of the labor force, we find flaws in HCT. An adequate theory of human resources must comprise a theory of production and of social reproduction (Bowles & Gintis, 1975). By social reproduction, Bowles and Gintis pointed out that schooling, occupational training, child rearing, and health care perform dual functions, both economic and societal, and they play an essential role in both functions, even if the contribution is not direct. And, they are also essential to the perpetuation of the entire economic and social order. The theory of human capital fails to offer a theory of reproduction (Bowles & Gintis, 1975). A similar critique was provided by Blaug (1987), who said that what must be illustrated is "not that education contributes to growth, but that more education would contribute more to growth at the margin than more health, more housing, more roads, etc." (p. 231).

## **Implications for Practice and Policy**

The aforementioned problems have highlighted the assumptions of HCT, with some strengths but many problems. HCT is substantially misleading, both as a framework for empirical research and as a guide to policy. HCT did lay a foundation of emphasis on the importance of investment in human beings through education and training. Briggs (1987) concluded: "While economists in general and policymakers in particular have focused upon physical capital as the explanation for



long-term economic growth, it has actually been human resource development that has been the major contributor” (p. 1213). Business and industry, educational institutions, NGOs, government agencies, labor unions, employees, and any other societal stakeholders must recognize the importance of the theory and its critique as important for the ongoing development of their human resources. “Developed, educated, motivated people are an unlimited resource...[while] undeveloped, uneducated, unmotivated people are a monumental drag on an economy in the internationalized information era” of contemporary times (Marshall, 1986, p. 1).

First, many observers have examined the interface between economic progress and social dysfunction—as seen, for example, in the implications for workers of rapidly changing technology, skills obsolescence, job insecurity, and longer hours of work (OECD, 2001).

HCT is basically a supply-side theory and, as might be expected, demand-side forces are also operative in labor markets and need to be taken into account (Strober, 1990). Moreover, there are feedback effects in a complex environment, and supply and demand factors are not as independent of each other as we would like to pretend. Thus, the human capital approach to economic growth exhibits the weaknesses of HCT in a particularly straightforward manner, primarily focused on the many factors that contribute to growth. Because economic growth is driven by many factors besides education, a balanced and integrated approach at the government level is essential. The task of human capital and HRD researchers is thus to determine the precise contribution of investment in human resources. Further, human capital and HRD researchers, economists, and government agencies must investigate how variations in the level of investment in human resources (through education and/or training) affect the level of output and growth rates of the country.

As Bowles and Gintis (1975) asserted, schooling may influence the rate of growth positively or negatively in ways that go considerably beyond HCT. And, because the theories on general and specific training are not supported by research, governments must continue to provide subsidies for education for the benefit of society. This is particularly important in areas that are important to society but are not rewarded well economically, such as with teachers, nurses, and general practitioner physicians, for example.

While HCT provides some central insights into the supply side of the labor market, the major challenges to this theory suggest that the demand side of the market, i.e., the actions of firms or of governments, also play a key role in determining earnings and employment (Strober, 1990). Further, these problems of HCT suggest that government policies can be instrumental in effecting a more efficient and equitable use of human resources. For example, by expanding national development construction projects, more laborers are required. Hence, given imperfect labor markets, government intervention to maintain a reasonable highest to lowest wage gap differential may be needed.

In addition, discrimination must be reduced to a minimum, or, even better, eliminated. Governments must be a model for setting aside discriminatory perspectives and create policies to minimize or eliminate overt discrimination based on gender, age, ethnicity, country of origin, sexual orientation, preferred institutions of higher education, birth months, weight, and other irrelevant factors that do not affect productivity but are often used to discriminate among applicants or employees.

Because there are many factors influencing the economic growth of a nation, and because the past does not necessarily predict the future, efforts at predicting employment needs into the future are doomed to failure. Consider the past response to the shortage of IT workers, many countries made preparation of high quality IT workers a prime focus for higher education. As a result, after a number of years, a surplus of IT workers was available on the market. When establishing policies related to National HRD, governments must set aside any assumptions about rational (i.e., strictly economic) decision-making by its residents.

This critique of HCT suggests that it is critical for governments, academics, and others to view HRD as having societal importance that extends beyond the corporation. Further, any NHRD approach needs to include a full and equal partnership among business and industry, educational





institutions, NGOs, government agencies, labor unions, employees, shareholders, community leaders, and any other societal stakeholders. For instance, programs, such as those used by France, whereby companies pay 1.5% of their payroll into a country pool accessible by employees for further training or education, make sense (Thurow, 1999). In addition, in order to meet diverse needs to meet the challenges of the knowledge economy, it is not easy to meet all human resource demands solely from the supply of the nation, especially with changing demographics in most countries. Thus, we suggest that governments in maturing societies need to begin NOW to modify immigration laws to allow for the labor market to attract needed employees from other countries. And, because of the societal weight embedded within HRD's role, it is further suggested that issues such as child labor, sex workers, corruption, family abuse, and so on, must receive societal priority, and agencies dealing with these issues will find benefit from applying HRD principles for needs assessments, interventions, and evaluation of programs and policies.

Given the importance of education and training for economic growth, governments must provide increasing incentives to encourage students to stay in school, making advanced education a more likely decision, especially in occupations where the economic rewards are not commensurate with the economic investments required for the education or training. The funding for education and training must remain a high priority, but focusing on appropriate investment areas will accommodate the lack of rational decision-making in the labor force.

## Conclusion

In conclusion, human capital theory originated with economists. "What economists learn from a reappraisal of human capital theory depends upon their separate world views. Although economists consider their discipline a science, there is a good deal of 'belief' involved in the profession" (Strober, 1990, p. 237). Because of the difficulty of carrying out empirical tests that definitely prove or disprove the theory, critiques of the theory have continued to be in contention for a long time. This article has focused on human capital and HRD, not as ends in themselves, but as resources that can be used to support economic and social development. The path will not be easy. There are many unanswered questions related to HCT, and the solutions are as-yet unidentified. But, as HRD professionals, this journey must become our home—for the sake of both current and future generations.

## References

- Acemoglu, D. (1996). A micro-foundation for social increasing returns in human capital accumulation. *The Quarterly Journal of Economics*, 111(3), 779-804. doi: 10.2307/2946672
- Baptiste, I. (2001). Educating lone wolves: Pedagogical implications of human capital theory. *Adult Education Quarterly*, 51(3), 184-201. doi: 10.1177/074171360105100302
- Barros, C. P., & Alves, F. M. P. (2003). Human capital theory and social capital theory on sports management. *International Advances in Economic Research*, 9(3), 218-226. doi: 10.1007/BF02295445
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. New York: National Bureau of Economic Research.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education (3<sup>rd</sup> ed.)*. Chicago: University of Chicago Press.
- Becker, G. S. (1960). Underinvestment in college education? *The American Economic Review*, 50, 346-354.
- Black, S. E., & Lynch, L. M. (1996). Human-capital investments and productivity, *The American Economic Review*, 86(2), 263-267.



- Blaug, M. (1987). Declining subsidies in tertiary education: An economic analysis. In M. Blaug (Ed.), *The economics of education and the education of an economist*. New York: New York University Press.
- Blaug, M. (1966). *Economics of education: A selected annotated bibliography*. New York: Pergamon Press.
- Blaug, M. (1976). The empirical status of human capital theory: A slightly jaundiced survey. *Journal of Economic Literature*, 14, 827-855.
- Blaug, M. (1970). *An introduction to the economics of education*. Baltimore: Penguin Books.
- Bowles, S., & Gintis, H. (1975). The problem with human capital theory—A Marxian critique. *The American Economic Review*, 65(2), 74-82.
- Breit, W., & Hirsch, B. T. (2004). *Lives of the laureates: Eighteen Nobel economists*. Cambridge, MA: MIT Press.
- Briggs, Jr., V. M. (1987). Human resource development and the formulation of national economic policy. *Journal of Economic Issues*, 21(3), 1207-1240.
- Carnevale, A. (1983). *Human capital: A high yield corporate asset*. Washington: American Society for Training Directors.
- Coleman, J. S. (1990). *Foundation of social theory*. Cambridge, MA: Harvard Business School Press.
- Denison, E. F. (1985). *Trends in American economic growth, 1929-1982*. Washington, DC: The Brookings Institution.
- Dobbs, R. L., Sun, J. Y., & Roberts, P. B. (2008). Human capital and screening theories: Implications for human resource development. *Advances in Developing Human Resources*, 10, 788-801. doi: 10.1177/1523422308325761
- Ginzberg, E. (1984). Expanding the knowledge base for informed public policy. In R. Thayne Robson (ed.), *Employment and Training R&D*. Kalamazoo, Michigan: The Upjohn Institute for Employment Research.
- Harbison, F. H. (1973). *Human resources as the wealth of nations*. New York: Oxford University Press.
- Ho, C., & Alcorso, C. (2004). Migrants and employment: Challenging the success story. *Journal of Sociology*, 40(3), 237-259. doi: 10.1177/1440783304045721
- Kessler, A., & Lulfesmann, C. (2006). The theory of human capital revisited: On the interaction of general and specific investment. *Economic Journal*, 116(514), 903-923. doi: 10.1111/j.1468-0297.2006.01116.x
- Leuven, E. (2007). Returns to training. In J. Hartog & H. M. Van Der Brink (Eds.), *Human capital: Advances in theory and evidence*. Cambridge: Cambridge University Press.
- Leuven, E., Oosterbeek, H., Sloof, R., & Klaveren, C. V. (2003). Worker reciprocity and employer investment in training. *Economica*, 72, 137-149. doi: 10.1111/j.0013-0427.2005.00405.x
- Loewenstein, M. A., & Spletzer, J. R. (1999). General and specific training: Evidence and implications. *Journal of Human Resources*, 34(4), 710-733. doi: 10.2307/146414
- Marshall, A. (1948). *Principles of economics* (8<sup>th</sup> ed.). New York: Macmillan.
- Marshall, R. (1986, April 6). The role of apprenticeship in an internationalized information world. Paper presented at the Conference on *Learning by Doing* sponsored by The International Union of Operating Engineers, the U.S. Department of Labor, and Cornell University, Albany, NY.
- McLean, G. N., & McLean, L. D. (2001). If we can't define HRD in one country, how can we define it in an international context? *Human Resource Development International*, 4(3), 313-326. doi: 10.1080/13678860110059339
- Mill, J. S. (1926). *Principles of political economy, with some of their applications to social philosophy* (W. J. Ashley, Ed.). New York: Longmans, Green and Company.
- Mincer, J. (1974). *Schooling, experience, and earnings*. New York: National Bureau of Economic Research, distributed by Columbia University Press.



- Organisation for Economic Co-Operation and Development. (2001). *The well-being of nations: The role of human and social capital*. Paris, France: OECD Publications.
- Paulsen, M. B. (2001). The economics in human capital and investment in higher education. In M. B. Paulsen & J. C. Smart (Eds.), *The finance of higher education: theory, research, policy & practice* (pp. 55-94). USA: Algora Publishing.
- Schultz, T. W. (1963). *The economic value of education*. New York: Columbia University Press.
- Smith, A. (1952). An inquiry into the nature and causes of the wealth of nations. In R. M. Hutchins & M. J. Adler (Eds.), *Great books of the western world: Vol. 39. Adam Smith*, Chicago: Encyclopaedia Britannica. (Original work published 1776).
- Smith, A. (1776). *The wealth of nations*. London: Macmillan & Co.
- Spendgler, J. J. (1977). The invisible hand and other matters: Adam Smith on human capital. *The American Economic Review*, 67(1), 32-36.
- Stevens, M. (1994). A theoretical model of on-the-job training with imperfect competition. *Oxford Economic Articles*, 46, 537-62.
- Strober, M. H. (1990). Human capital theory: Implications for HR managers. *Industrial Relations*, 29(2), 214-239.
- Svanson, R., & Hollon, E. F. III. (2001). *Foundations of human resource development*. San Francisco: Berrett-Koehler Publisher, Inc.
- Sweetland, S. R. (1996). Human capital theory: Foundations of a field of inquiry. *Review of Educational Research*, 66(3), 341-359. doi: 10.3102/00346543066003341
- Thurow, L. C. (1999). *Building wealth: The new rules for individuals, companies and nations in a knowledge-based economy*. NY: HarperCollins Publishers Inc..
- Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review*, 4(3), 356-367. doi: 10.1177/1534484305278894