Preparing Workers for the 21st Century: Correlating the Impact of Advanced Training and Human Capital Theory

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Abstract

Since 1993, the American economy has experienced a rapid growth in the pool of workers entering the labor market and a consistent concern for a reduction in the number of people organizations want to retain to maintain its efficiency. For a large number of firms, the dividing line is education level of the prospective employee. This paper attempt to uncover what is the basis for education as the dividing factor and what this means to educators at the post-high school level. Points for consideration are provided that may enable academic educators to convey this significance to students as a means of motivating excellence in the classroom.

About the Author:

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Introduction & Background.

Stewardship. Reengineering. Reinventing Government. Regardless of the business cliche of the day, the objective of a company must be to create value for its shareholders. As American businesses rapidly approach the 21st Century, a central question will remain: How does a business organization continue to effectively and efficiently use its human resources to create value for its stockholders. Because this concept is not as empirically concrete as most corporate assets, corporate officials must consider the "hidden balance sheet" factors of human capital in value creation. Some theorists are advocating that corporate executives should strongly consider how it goes about making its human capital investment decisions. The presumption is just as a company makes a conscious financial decision to acquire buildings, machinery, or debt capital; it also needs to strategically consider the impact of the financial decisions it makes in selecting or not selecting their human capital. Whether it's a production/operations business or a service organization, financial experts and academicians both agree that labor (human capital) is the most expensive, and perhaps, the most costly short, medium, and long-term investments an organization can make. Since most organizations in the United States subscribe to the agency theory; one only needs to consider recent news events to recognize the short and long-term impact of some human capital decisions.

This agency theory also applies to institutions of higher learning. Employers expect that graduates with superior grade point averages are indeed among the most academically prepared, intellectual, and cognitively disciplined prospective workers that an academic institution can develop. Consequently, when workers fail to produce at the expected level or make poor organization decisions, it reflects not only on the individual but also indirectly on the institution of higher learning. No organization that employs people is immune from the adverse impact of poor or improper decisions made by their premium human capital investment, its' senior-level management.

The recent new headlines are vivid testimonials to this fact: Avis Car Rentals and Denny's Restaurant (racial discrimination by franchise managers); and the graphic video tape of a hazing ritual at the U.S. Marine Corps station in Fayetteville, North Carolina (mother and fathers witnessed their sons enduring extreme physical agony as a "rite of passage" supposedly condoned and even participated in by commissioned officers); and as a positive example, the joint venture agreement between Microsoft and the National Broadcasting Company (NBC) in
developing "MSNBC" (this venture was news worthy primarily because of the human capital of Bill Gates). Although only the first and last examples can be easily recognized in financial markets because of their financial impact on business, they are not the only examples.

Two recent examples which significantly demonstrates the financial impact of corporate long-term human capital decisions (investments) are Texaco and Publix Super Markets. Both companies were forced to defend themselves against accusations of sexual harassment or racial discrimination brought against some personnel in the highest position of corporate leadership. In landmark judicial rulings, Publix was found to be negligent concerning senior-level management's willful contribution to employment discrimination in the workplace. The Texaco and Publix incidents not only received nation-wide media coverage in the United States but it was carried internationally by Cable News Network International (CNNI). In both cases, the final impact of these senior executive-level decisions resulted in: 1) Global negative publicity for both organizations; and 2) As a result of the financial award by the court, Publix experienced a significant drop in their company's price of common stock traded on the New York Stock Exchange (NYSE).

A question academic institutions and educators may ask themselves is: To what extent do business organizations rely upon a person's education as a dividing or qualifying parameter in making human capital decisions and to what extent do educators and academic institutions prepare their students to either promote or disaffirm the governing theory on human capital?

Purpose of this paper

The purpose of this paper is to present the findings of a limited qualitative research effort regarding the following questions: 1) What is Human Capital, Human Capital Theory and Human Capital Investment? 2) What are some significant theoretical components of human capital theory? Based on this research, academic educators are challenged to evaluate their institutions and themselves to determine whether they are preparing its students to promote or disaffirm an organization's use of human capital theory.

What is human capital and human capital investment from a business perspective?

Van Horne (1995) suggested that since the objective of every company is to create value for its shareholders, the idea is to acquire assets and invest in products and services where expected return exceeds their cost. Since all organization require at least some human element, people are considered a "value-adding" asset to most organizations. More specifically, it is the intellect and drive of people that is of value to an organization. Several theorists have defined "human capital". Groth (1994) defined the construct as a combination of both mind capital and
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physical capital. Mind capital referred to the extent a person is capable of the generation of ideas, intent, methods, and goals. Physical human capital referred to the physical capability to transform ideas, intent, and goals into application. Shonhiwa and Gilmore (1996) in referring to human capital in the broader context of human resource accounting (HRA) suggested that human capital was the acquired useful skills and knowledge personnel departments seek in performing the functions of planning, recruiting, staffing, and hiring. Krogh and Roos (1996) in discussing the future of managing knowledge and intellectual capital divided human capital knowledge into five distinct categories of knowing: distinction making, caring, languaging, shaping the future, and recognition that competence is an event that exist only when knowledge meets the needs of the task at hand. "The challenge for management is to use the vast knowledge potential of the company to create value...In viewing competencies as an event, managers have to design tasks that let people use more of their knowledge (and skills) in value creation" (Krogh and Roos, 1996:425).

For the purpose of this paper, human capital will be defined as the knowledge, skills, experience, and decision making ability a worker possesses or acquires that can be used to add or create value for an organization (Chung and Wang, 1996; Shonhiwa and Gilmore, 1996; Groth, 1994; Krough and Roos, 1996).

Human capital investment will be defined as general or specific education or training obtained by workers or prospective workers that offer the organization the opportunity to receive increased productivity or improvement in processes or procedures from the person’s increased mental and/or physical skills and abilities. Education and training are considered the main means of developing human capital. The process by which organizations harness human capital is grounded in human capital theory.

Key components of human capital theory.

The concept of Human Capital Theory is not a new concept. In fact most business practitioners apply the one or more key components of the theory everyday; although from a theoretical prospective, they may not be aware of the specifics of human capital theory or know that a particular practice is based on it. Almost every American youth of working age has heard the phrase, "if you want to get a good job, then get an education!" This is one of the core components of human capital theory, which espouses that education and training are the key means by which humans add value to organizations. Human capital theory goes on to specify a particular mechanism through which education level is positively correlated with income. In essence, the theory states: 1) Education increases worker skills. Possession of these increased skills, in turn, leads to increased productivity. 2) Management then rewards higher productivity through the conveyance of higher earnings. It also proposes that there is a specific rationale for the positive correlation between age and earning: People who are older earn more because they
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have more on-the-job experience (training). This experience has value to an organization because it enables them to maximize the use of resources while promoting resource efficiency. On-the-job training can be subdivided into two types of human capital investment: general human capital investments and specific human capital investments. General human capital investments consists of skills and knowledge that a worker or prospective worker acquires that is transferable to other work settings (i.e. transferrable skills). Specific human capital investments consists of skills and knowledge that a worker or prospective worker acquires that is of use only in a particular company (Strober, 1990; Becker, 1964; Mincer, 1974). 

Human capital theory expanded into empirical application.

From this core feature of the theory, several supporting hypotheses, propositions and hypotheses or models have been explored to promote its empirically application in the workplace. According to Strober (1990), there are four prevalent hypotheses or models that are commonly used to further delineate or define the theory which is codified in application: the screen model, the statistical discrimination model, the signaling model, and the efficiency wage model. Each model represent a unitarian concept that may be applied alone or in tandem with the other models.

The screening hypothesis suggests that education is positively correlated with earnings not because additional education yields higher productivity, but because the employer uses additional education as a screen, or filter, or signal to hire better-educated workers into jobs that pay more. This model is not only utilized in commercial businesses but in academia as well. For example, consider the academic use of SAT, LSAT, GMAT, and GRE test scores with regards to admissions.

The propositions of the statistical discrimination hypothesis posits that:

"...if employers believe minorities and women are in the long-run less productive than white men, and if employers operate in a world of uncertainty where it is costly to obtain information about the individual productivity of prospective employees; then employers will assume that individual minorities and women have the presumed lower productivity characteristics of the "average" minority or woman worker.

Employers will then either pay women and minorities less or exclude them entirely from employment in a particular occupation. Skin color and gender are used by employers as bases for statistical discrimination both because (1) Numerous employers hold preconceived beliefs about the lower average productivity of minorities and women, and (2) Because information about skin color and gender can be obtained by employers at zero cost" (Strober, 1990:216-217).
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In academia, this model should not, and in a vast majority of cases, is not actively applied but the challenge to individual educators is to conduct a self-analysis to determine to what extent do you, as an educator, promote or stimulate the cognitive ability of all of the students under your tutelage. In particular, what creative or innovative actions have you attempted to use to address the cognitive processes of individuals who in the past may have been expected to perform below standards or were not recognized because their efforts were considered elementary in comparison to other's application of academic principles. I once heard someone explain how a huge, powerful elephant could be held in one place by the use of a small iron stake driven into the ground. The answer was that when the elephant was small its leg was tied to the stake and no matter how hard it tried, it did not have the strength at that time to pull it out of the ground. After a while, it believed that because of earlier experiences, it did not possess the ability to do so when, now as an adult elephant, it really did. How similar is this in academic education when a group of people who were denied access of quality education or may have been told for five or six generations that they can not compete or excell academically. Although it may have only taken 10 years to convince the elephant that it did not possess the ability; without the intervention of a positive significant emotional event, it may take a century or more to convince it that it has the power to pull up the stake or to change a human's subsconscious. But there is hope. Perhaps the most prominent testimonial to the reverse application of the statistical discrimination model is the consistent positive results of academic researchers who have attempted to validate the Pygmalion effect. It take a special kind of educator to diligently try to inspire those who lack inspiration and sometimes motivation as well.

The signaling hypothesis regarding human capital theory proposes that employers may pay higher wages to more educated employees even if education has no effect on productivity. The assumption is made that ability level is positively correlated to productivity. It is assumed that potential workers with relatively high ability levels can invest more cheaply in education than can employees with lesser ability. For example, it is assumed that higher ability students will experience an easier time completing high school or college than lesser ability level students. Therefore, based on a presumed wage differentials employers establish between workers, it is worthwhile for the higher ability worker to "signal" this information to the prospective employer (Strober, 1990). The premise is that because the higher-ability prospective worker was willing to invest in more education, this "signals" their potential for higher productivity to the prospective employer, although this may not prove to be true empirically.

This model is in essence, the mirrored opposite of the screening model taken from an educated worker perspective. In this case, the student or worker is aware of how employers use education as a screening tool. As a result, he or she actively seeks to use advanced education as a means of further delineating themselves from other prospective candidates. In reality, in most cases, it is not the student but the enlightened, educated parent who is cognizant of this model and mandates the student's acquisition of high education. Obviously, those individuals
with parents who are not exposed to this model or cognitive of this mode of business reasoning are at a significant disadvantage with regards to effectively competing in the labor market. For this reason, it may be prudent for academic leadership to advocate that students in all curriculums be encouraged to take at least one human resource management course in order to gain this minimum exposure about business employment practices.

The efficiency wage hypothesis proposes that management recognizes that the labor market deals with long-term relationships. The premise regarding education is that if shared cost-wise by both the employer and the employee, investment in specific human capital reinforces the mutual interest and expectations of the two parties in maintaining a long-term employment relationship. The efficiency wage model is based on the proposition that when employers are faced with high turnover costs or high costs of monitoring worker productivity, they seek to develop wage payment schemes which provide incentives for employees to remain with an organization and to continue to be highly productive.

For example, employers may pay newly hired or low-tenure employees less than their value-added contribution during their early years due to the risk of employee termination (i.e. prior to or shortly after completing the probationary period) or employee resignation. However, the actuality of employees earning more than their value-added contribution during the later years of employment tends to keep the employee from quitting or risking dismissal due to shirking. This tends to be especially valid since the labor market, as it is in reality in most cases, is prone to pay workers starting a new job, regardless of experience, less than their value-added investment (Strober, 1990).

Actions academic educators can take regarding human capital theory and the learning environment

Obviously human capital theory is being empirically applied in the labor market. The question is what can academic educators do to better prepare students to transition from an academic environment to the "real world" business environment. Although this paper is limited in its qualitative research scope, several areas of consideration can be transposed into the learning environment. Perhaps the most pressing is for educators to realize that human resource management practices are experiencing severe pressures to change. Just as the focus in the business world changes rapidly, students graduating from academic institutions need to be cognizant of how the business world evaluates human capital. As a result, human resource departments are being asked to justify their existence or to quantify their contributions to an organization's "bottom line" - profit. One method that is being advocated in some organizations is that of human resource accounting (HRA).
According to Appelbaum and Hood (1993), Eric Flamholz is one of the leading academicians who has written numerous textbooks and articles on this topic since the 1980s. HRA represents both a paradigm and a set of measures for qualifying the effects of human resource management strategies on the cost and value of people as organizational resources. The belief is that human resource professionals can help corporate executives to better appreciate the long-range consequences and hidden costs associated with certain present and strategic business decisions regarding human capital.

To the extent that educators can get students to seriously investigate their future career prospects and goals, the greater the chance of getting the student to analyze their contributions to prospective organizations. By challenging them to think about the level and quality of worker that will be needed in a specific realm of business, the student and educators will be better able to develop a model or outline of what a prospective worker in that field will look like and to discuss their assets with regards to HRA technique.

For example, since HRA provides for the detailed analysis of human capital cost in a manner that is consistent with Generally Accepted Accounting Principles (GAAP), the student or worker should be able to relate to such factors as: costs typically associated with recruitment, screening, selection, hiring, placement, orientation, and on-the-job training, and replacement costs such as the actual cost of searching for resources, which may be quite scarce, that will successfully satisfy organizational needs and objectives.

This key point for academicians here is for each student to able to make a quantifiable assessment of their prospective value to an organization. Educators can contribute to this assessment by using innovative techniques to let the students experience this assessment. For example, at the beginning of a course when the course objectives are being presented, briefly explain how the human capital theory is applied in business. Then, challenge each student to be able to assess a monetary value an organization would be willing to invest to acquire "their intellectual capital" using the class as a representative model of today's labor market. Then challenge them to apply this technique to other classes so than they can develop a better appreciation of how education is valued in business.

Another method being advocated is that of human portfolio analysis strategy. Shonhiwa and Gilmore (1996) posit that:

"The present-day human resource management approach refutes the fallacy (that personnel departments are dumping grounds for welfare-oriented organizational deadbeats who failed in line management) and asserts the view that employees can rightly be considered as assets. Value can be placed on them and they can be managed in the same way as a portfolio of stocks: to increase their value to the organization (Shonhiwa and Gilmore, 1996:16)."
Their belief is that management can manage the development of skills and knowledge of people and thereby deliberately grow the human capital investment faster than nonhuman capital, and for a greater length of time. They go on to suggest that HRA was an impersonal process of attaching sales contribution figures to an employee for the purpose of maximizing corporate profits. Their portfolio analysis strategy is a developmental tool where performance categorization is primarily to guide the training and development efforts of human capital assets to maximize and extend the service life or usefulness (i.e. employee obsolescence), of those assets.

Just as investments in a financial portfolio are managed, human capital should be managed accordingly. Risk reduction is accomplished through diversification and a balancing of recruitment through the use of mixed talents. Just as with the assembly of efficient market portfolios where the objective is to build on some activities, divest some, and hold others; in the use of human capital, the workforce should be comprised of some workers with a high potential for making substantial contributions, some with versatile skills, some with stability of tenure, and still others with proven high quality performance in relationship to the firm's goals. By considering two factors, job performance ("JP" on a vertical axis) and developmental potential ("DP" on a horizontal axis), they developed a model for categorizing workers in a portfolio: Stars (High JP/DP), Consistent (High JP/Low DP) Achievers, Underachievers/Underperformers (Low JP/High DP), and Problem Employees (Low JP/DP). Theoretically, no organization would want to retain unproductive workers with no or little development potential. (Shonhiwa and Gilmore, 1996).

"In short, human capital deals with balance sheet estimates of the value or worth of human beings at the year-end accounting time. Thus, sound human resource development provides a means of evaluating the human asset of the organization and managing those assets for the mutual benefit of both employer and employee" (Shonhiwa and Gilmore, 1996:16).

From an academician viewpoint, this can be a starting point to encouraging those students who are not "A" students to continue to develop their cognitive reasoning skills. Educators can encourage students to realize that even those student who do not obtain a "4.0" are recognized as having significant value to business organizations. This values is based on their demonstrated ability to show the "potential for growth and development".

Academic institutions may be able promote the dynamics of this growth and development environment in several way: 1) Ensuring class and faculty diversity. 2) The use of a variety of accelerated learning techniques (i.e. Role Plays, Exercise, Realistic Scenarios, Tours of business establishments, Question & answer sessions with business professionals, Investigative research problems where the results are critiques by working professionals, etc.) 3) Educators can structure the formation of class groups during exercise, role plays, and projects by
intentional grouping of diverse student populations to promote the exchange of ideas, opinions, and viewpoints and teamwork. As a result, for example, this can enable to a prospective graduate to cognitively answer an interview questions such as: How has your education enabled you to deal effectively with people of different races, cultures, backgrounds, and value systems while focusing on a superordinate goal?

Summary and Conclusion

In summary, human capital theory is being applied in several ways in various organizations. Some researchers/practitioners have found that some organizations are beginning to use the human resource accounting (HRA) technique and the human portfolio analysis strategy to validate their need for specific human capital. The challenge for academic institutions and educators is to ensure that students are prepared for engaging the "real world" workplace. This will require incorporating the use of technological advances in teaching and the creative ingenuity of a dedicated professional educator.

The learning environment presents the opportunity to faculty and students to broaden their exposure to different value systems, viewpoints, and opinions that can be used to increased their value to prespective employers and become functional members of American society in general. The question is: To what extent are you and your academic institution preparing its students to deal with the application of human capital theory in business organizations?
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