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Adeyemi O. Ogunade  
*University of Rhode Island*

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# HUMAN CAPITAL INVESTMENT IN THE DEVELOPING WORLD: AN ANALYSIS OF PRACTICES

ADEYEMI O. OGUNADE  
University of Rhode Island

Human capital has been identified as a key stimulus of economic development. This paper evaluates the efficacy of human capital development (HCD) practices in the developing world. Drawing predominantly from classical human capital theory, I developed a tentative framework to evaluate national skills development efforts. It determines the efficacy of HCD practices, by matching workforce skills to the level of technological development and national training objectives. A look at national training policies in Singapore, South Africa and India, suggests that developing countries need to adopt a nuanced approach to HCD to be competitive in the global market. This study questions the long term viability of current practices in some developing countries, and draws attention to the need to modify current HCD practice. Emphasizing the strategic role, basic education, collaboration, coordination and targeting, play in the emergence of country-specific HCD practices, which develops workforce from lower skills to higher skills equilibrium (HSE). The paper shows that when these strategic approaches are adopted in developing countries, they can efficiently harness human capital to create competitive advantages and surplus value, which could be used to upgrade technology and diversify economic activity, facilitating economic growth.

The importance of economic development cannot be overemphasized. Despite the tremendous material gains produced by the innovation of man, poverty, disease and deprivation still run rampant in the developing world. With the ripple effect of the global credit crises yet to abate, and the rise in food prices across the globe, about 13.6% of the world experience hunger caused by deteriorating economic conditions (UN, 2010). The fact that a majority of people experiencing hunger come from the developing world, is a poignant reminder of the crucial role economic development plays, in determining social conditions in civil society.

Economic development depicts a wide range of actions, including but not limited to, growth in gross domestic product (GDP), growth in per capita income of citizens, increased employment opportunities, improved quality of life and living standards in regards to basic necessities like food, water, shelter and health care. Economic development is therefore the cumulative change in employment, per capital income, quality of life and GDP of a nation that is self-sustained (Mathur, 1999: 204). In general, economic development is important because production relations to a large extent define social, legal, cultural and political interactions within any society. Production relations refer to a series of relationships that emerge during the process of economic activity. It represents the complex relationships between feudal lord and serfs, capital and labor and the myriad connections and relationships that facilitate the production of economic goods and services (Spagnolo, 1999). In this regard, “the mode of production of material life conditions the

general process of social, political and intellectual life” (Konstantinov, 1982: 201). In producing material goods, people produce and reproduce their own social relations; ensuring social, political and economic spheres of human life coalesce. Although, research by Rankin (2002) shows the influence of social capital on economic activity, economic relations still remains the infrastructure that grounds the superstructure of civil society. Social capital is a “feature of social organizations, such as networks, norms, and social trusts that facilitate coordination and cooperation for mutual benefit” (Krishna & Shrader, 1999: 3). More particularly, the issue of economic development in the developing world is of great importance to the global economy. The future of emerging markets, could lead to either a sustained period of global economic growth or a fragmented system of economic development characterized by high tariffs, trade imbalances, unhealthy competition and higher prices for basic commodities (Errunza, 1983).

The importance of economic development to the global market is emphasized by the massive flow of financial aid to emerging markets. In 2010, the Organization for Economic Co-operation and Development (OECD) reported up to 125 billion dollars in aid and foreign direct investment (FDI) to developing and underdeveloped economies to bolster economic activity and limit the spread of poverty (OECD, 2011). Over the past 30 years, developing countries have turned to the perceived benefits of neoliberal globalization. Neoliberalism is an ideology where “markets are understood to be a better way of organizing economic activity because they are

associated with competition, economic efficiency, and choice. In conjunction with this general shift towards the neo-liberal tenet of more market, deregulation and privatization have become central themes in debates over welfare state restructuring” (Larner, 2000: 5). Since the resurgence of neo-liberal capitalism, globalization has served as a means of facilitating capital accumulation and growth in developed economies. Developed economies, need larger markets for excess products created in the course of capitalist enterprise. Creation of new consumer markets through financial aid and globalization helps sustained growth in the developed world, leaving these economies (developing economies) most vulnerable in times of cyclical crises (Calvo & Mendoza, 2000). Emerging markets also ensure higher rates of return for investors in developed countries, especially during restrictive U.S monetary policy periods (Conover, Jensen & Johnson, 2002). This brings to the fore, the importance of economic development in emerging markets to investors and governments in the developed world. Economic development helps mobilize economic activity for entire regions, leading to an increase in per capita GDP, improved quality of life and a reduction in poverty levels for millions of people across the globe.

Over the past 20 years, the unilateral response by developed nations and their institutions to the glaring inequalities in international economic development, is to put forward globalization as the panacea for all economic irregularities. Here the World Bank and the IMF are the institutions used to perpetuate this suspect ideology. Thus, “while the World Trade Organization was the forum within which international trade agreements were negotiated, U.S trade negotiators and the IMF have often insisted on going further, accelerating the pace of trade liberalization. The IMF insists on this faster pace of liberalization as a condition for assistance and countries facing a crisis feel they have no choice but to accede to the Fund’s demands” (Stiglitz, 2002: 62). Globalization is seen as the conduit, through which economic prosperity can be spread to the developing world. Globalization is the “removal of barriers to free trade and the closer integration of national economies” (Stiglitz, 2002: IX). It has been described as “a process of rapid economic, cultural and institutional integration among countries. This unification is driven by the liberalization of trade, investment and capital flow, technological advances, and pressures for assimilation towards international standards” (Ali, 2005: 1). As an ideology of economic development, globalization is closely associated with the wholesale acceptance of capitalism, and the jettisoning of institutional structures like trade tariffs

and financial regulation, that have over years served as the life blood of developing nations (Stiglitz, 2002: 5). Thus it has become the case that “developing countries must accept it, if they are to grow and fight poverty effectively” (Stiglitz, 2002: 5). Despite increased opportunities offered by globalization, it has become a Trojan horse of sorts to many developing countries, ostensibly promising economic opportunity in terms of job creation and increased income, but delivering greater income inequality and unemployment in developing countries and greater trade imbalances between developing and developed countries (Garett, 2004, Milanovic, 2003, Olayinka, 2009). Thus, globalization ensures developed countries garner a disproportionate share of the benefits of enterprise at the expense of the developing world. (Garett, 2001, Onwuka & Equavoen, 2007).

Developed countries promote open market and the elimination of trade barriers in developing countries, while at once instituting trade barriers through high tariffs and subsidies that entrench market protectionism (Stiglitz, 2002: 7). The exploitation of developing countries through globalization, has tainted the benefits that globalization offers when applied free of politics. Its failure to kick-start economic growth in terms of per capita income and gross domestic product in countries like Nigeria, Russia, Brazil and numerous failed experiments in Latin America and Africa has led to these countries seeking alternative means of stimulating economic growth and development. The preponderance of research in human capital has revealed a strong link, between economic development and human capital investment. A general consensus has emerged on the importance of human capital to economic development (Florida, Mellander & Stolarick, 2008). The central role of human capital in economic development has been documented in large scale studies of national economic performance (Barro, 1991, Mayer, 2000, Benhabib & Spiegel, 1994). To set-up a viable alternative framework for development, it is imperative we define human capital and show a robust empirical relationship between human capital and economic development.

## **HUMAN CAPITAL AND ECONOMIC DEVELOPMENT**

Human capital is the “accumulated stock of skills and talents, and it manifests itself in the educated and skilled workforce in the region” (Mathur, 1999: 205). Human capital is at times measured in terms of persons-years of education and it can be increased through formal or informal education or training (Mathur, 1999). In this sense, human capital is not

limited to formal education. It includes experience; practical learning that takes place on the job, as well as, non-traditional technical training regimens that enhance skill development (Davidsson & Honig, 2003). Human capital can have significant positive effects on economic development at the macroeconomic level in a number of ways.

### **Macroeconomic Effects of Human Capital**

At the macroeconomic level, human capital plays an integral role in economic development in myriad ways. A study conducted by Baldacci, Clements, Gupta and Cui (2004), analyzed data from 120 developing countries collected from 1975 to 2000. The results of this study show a positive relationship between years of education (HC) and economic development in developing countries. They demonstrated that “the impact of education on growth is more pronounced in low-income countries, where an increase in 1 percentage point in the composite enrollment rate is associated with a 0.1 percentage point increase in per capita GDP growth. This effect is 1.5 times that in middle-income countries” (Baldacci et al, 2004: 16). They determined that geographically the effect of human capital is highest in Sub-Saharan Africa and lowest in Eastern Europe and Central Asia (Baldacci et al, 2004). Becker, Murphy and Tamura (1990) demonstrated that the rates of return on investment in human capital, rises rather than declines as the stock of human capital increases. This happens because “education and other sectors that produce human capital use educated and other skilled inputs more intensively than sectors that produce consumption goods and physical capital” (Becker et al, 1990: 13). The intensive use of human capital accounts for increased productivity and technological growth that stimulates economic growth in terms of growth in GDP. Since the rate of return on human capital continues to increase productivity, it follows that an increased stock of human capital, raises investments in developing new technologies by expanding the education-intensive research and development industry, facilitating technological innovations at the heart of economic expansion (Becker et al, 1990). This makes human capital an endogenous driver of economic growth.

### **Human Capital and Total Factor Productivity**

Human capital improves economic growth by having a positive growth effect on total factor productivity of a given economy. Miller and Upadhyay using data from 83 countries were able to show that “human capital has a significant effect on

output when it is included as a factor of production. The inclusion of human capital in the production function lowers the elasticity of output with respect to labor when compared to the production function without human capital” (2000: 402). This shows a positive relationship between human capital investment and total factor productivity, which affects the GDP. In this case, human capital is not accounted for as an input in the production function, but rather increases economic growth through its effect on total factor productivity, exports and ultimately GDP. The interaction between human capital and increased total factor productivity is moderated by the trade orientation of the particular economy in question (Grossman & Helpman, 1991). An open trade orientation stimulates competition, encourages modern technology, increases the demand for high-skilled labor and promotes learning by doing. On the other hand, protectionist’s policies do not allow a country to leverage its stock of human capital (Miller & Upadhyay, 2000). We can infer that human capital development, without the requisite liberalization of the external trade sector, may lead to the under-utilization of capital.

### **Human Capital and Foreign Direct Investment**

Any discourse on economic development, must of necessity take into account capital in terms of financial instruments used to establish industries and basic infrastructure. Financial capital is required for sustained economic growth, and foreign direct investments (FDI) are a means of raising the capital base for economic activity. In this regard, human capital spurs economic growth by attracting FDI used for capital intensive production processes. Noorbakhsh, F, Paloni.A and Youssef.A (2001) investigated the relationship between human capital and the flow of FDI. They hypothesized that human capital investment was a statistically significant determinant of FDI inflows; it is one of the most important determinants of FDI inflow and that over time human capital would assume an even greater impact on FDI. Using data from 36 developing countries in Asia, Africa and Latin America from 1980 to 1994, Noorbakhsh et al. determined the importance of human capital in attracting FDI controlling for other variables like the presence democratic institutions, financial liberalization, low labor costs and availability of natural resources. Results “suggests that as the characteristic of FDI evolve in response to the acceleration in the globalization process in the 1990s, human capital has become an important location-specific advantage of developing countries” (Noorbakhsh et al, 2001: 1598). They also demonstrate

the importance of human capital through time, emphasizing the increasing significance of human capital to FDI decisions in the 21<sup>st</sup> century.

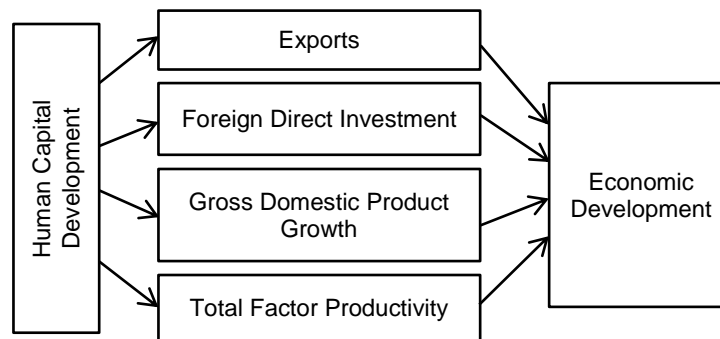
### Human Capital and Export/GDP

Studies have shown a robust relationship between the increase in export/GDP ratio and economic growth in developing countries (Levine, Renelt, & Esfahani, 1991). Recent macroeconomic theoretical models show that “the export sector contributes to economic growth through increasing returns to scale, more rapid adoption of foreign technology or more efficient utilization of scarce resources” (Levine & Raut, 1997:156). In a study conducted by Levin.A and Raut.L (1997) there was robust evidence, of an interaction between average education (human capital) and growth in the export/GDP ratio. Drawing data from a panel of 10-year GDP growth rates, of 30 semi-industrialized developing nations over the time period 1965 to 1984, they show that the “export sector cannot be more productive than the rest of the economy without utilizing relatively educated workers. That is the externalities and increasing returns of scale attributed to the export sector in newly industrializing

countries like Hong Kong and Korea cannot be achieved without simultaneous public investment in education” (Levine & Raut, 1997: 167).

Specifically, their analysis demonstrates that the interaction between human capital and the growth of the manufactured export/GDP ratio is positive and highly significant, while the interaction between average education and the growth of the primary commodity export/GDP ratio is nearly zero and statistically insignificant (Levine & Raut, 1997). This implies that human capital affects export growth only in cases where exports are primarily manufactured products, needing high skilled workers. In countries where exports are driven by primary commodity goods that require relatively less skilled workforce, human capital measured in terms of average education, has little or no effects on exports. Their study shows that there must be a simultaneous investment in human capital and the manufacturing export sector in order to stimulate export growth and long-run economic growth. Figure 1 below illustrates the connections highlighted between human capital and economic development.

**FIGURE 1**  
**Human Capital and Economic Development**



Human capital investment is shown to increase FDI, exports, GDP and total factor productivity all of which are significantly linked to economic development. It follows therefore, that the investigation of HCD practices in the developing world, will yield insight into the causes of developmental stagnation and serve as the basis for stimulating future growth.

### RESEARCH QUESTION

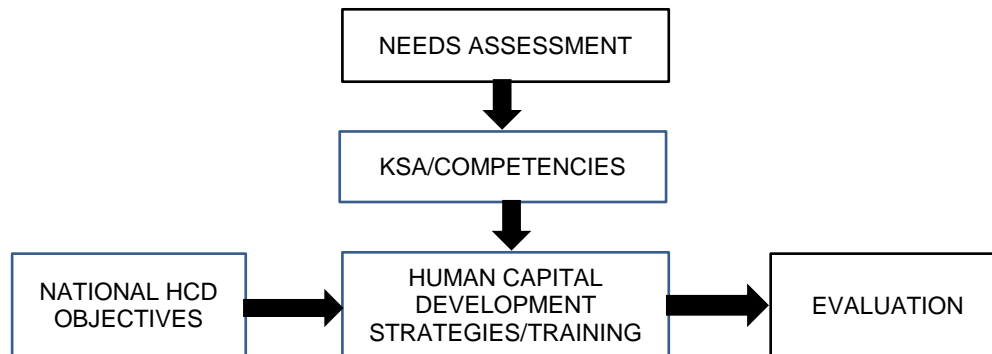
This paper sets out to evaluate the effectiveness of human capital development strategies, employed by governments, transnational corporations and private indigenous companies in emerging markets. There has been a dearth of research, evaluating the efficacy of strategies used to build human capital in the

developing world. Particular questions have arisen, regarding strategies used for human capital development (HCD) in developing countries. Questions like: a) what skills and competencies are being developed? b) What strategies are currently being employed by multi-national corporations (MNC), NGO's and national government agencies to address identified skill gaps? c) Should private or public agencies be responsible for developing human capital? d) How effective are current HCD strategies in addressing identified skill gaps? These salient issues will be addressed in this paper, with the hope that a working framework will emerge, that could serve as the fulcrum of future human capital development policy considerations in the developing world.

To answer the pertinent questions raised so far, I have adopted a model that lays out a framework for evaluating HCD practices, based on current workforce needs, national objectives and training strategy adopted. These factors play a pivotal role in any training exercise, and only by looking at the logical progression of training practice can we accurately

evaluate efficacy. Drawing from classical HCD theory and training evaluation theory in Goldstein and Ford (2000), I have come up with a HCD evaluation model, which shows the relationships of various factors in the evaluation of human capital strategies. Figure 2, highlights the essential features of this model.

**FIGURE 2**  
**Human Capital Development Evaluation Model**



Before we can evaluate human capital development strategies, we must have a firm understanding of training needs. Because HCD strategies are contingent on workforce needs, and an understanding of the workforce needs of a developing nation, will provide the contextual background against which the efficacy of HCD strategies is measured. This approach relies on theories in training and development, which identify needs assessment as the first step in developing a cohesive and effective training regimen. Proponents of this training methodology, aver that needs assessment is the first and most important stage of creating and evaluating a training system (Goldstein & Ford, 2000). They aver that needs assessment or the needs identification exercise, is the most viable means of ensuring training programs directly address the skill gaps of the workforce. Figure 2 shows the logical progression of activities from needs assessment to evaluation, emphasizing the structural connectivity of the processes involved in human capital development. Based on this model, an analysis of workforce needs and evaluation of HCD strategies in developing countries will be undertaken, drawing predominantly from the work of Lall (1999). The goal of this model is to create a framework that identifies current competencies in the developing world and measures them against developmental needs in terms of strategic objectives. The general objective is to train for the right skills that enhance comparative advantage, market growth and industrial expansion. This in turn

leads to increased exports, foreign direct investment, total factor productivity and GDP.

### NEEDS ASSESSMENT

To this point, we have established human capital to be an integral factor in economic development. Cross-national and longitudinal research show the importance of human capital development to economic growth, a number of questions regarding the nature and composition of human capital in developing countries remain to be answered. Questions like: What is the make-up of human capital in developing countries? What knowledge, skills and competencies do the workforce in developing countries possess? What skills do they need to initiate economic growth? These are the basic questions that must be answered, prior to evaluating human capital strategies. Given the dynamic challenges of globalization, “as both economic conditions and technological developments change rapidly, the ability to adapt to these changes becomes the essence of future competitiveness. Adaptation involves three processes: 1) identifying the areas needing change; 2) planning and implementing the actions necessary to make a change; and 3) evaluating the effectiveness of the changes” (Cascio, 1994: 1).

Thus in order to evaluate the effectiveness of workforce development strategies, we must first identify the skill needs of developing countries. This is a worthwhile theoretical approach, because it informs training and workforce development goals which in



turn dictate strategy employed to address deficiencies and determine the effectiveness of such strategies during evaluation. In this sense, “carefully described objectives that set forth required behavior are needed to plan effective training programs; moreover, there should be a direct relationship between these objectives and the type of instruction” (Goldstein & Ford, 2002: 35). Needs assessment is the means through which we gain factual knowledge about the abilities and capabilities of the workforce. In this sense, “understanding the capabilities of the workforce is a critical part of identifying the areas needing change. It is not possible to make a strategic change unless you understand whether your present workforce can support the change, or whether they need further training or whether they require a combination of training and new personnel” (Goldstein & Ford, 2002: 34).

As the first and most important phase in workforce development, needs assessment has been used in numerous workforce development projects. An industry based needs and competency assessment approach was used in the public healthcare sector in the United States to tackle the problem of poorly trained workers (Potter, Pistella, Fertman & Dato, 2000). Forty federal, state and local public health leaders, managers and agency supervisors, convened to determine areas of skill deficiency, identified in individual states over time (Potter, et al, 2000). They assessed the current education level of specific health professions, and determined that it was necessary to develop the current skill sets in order to match future public health needs (Potter et al, 2000). In this case study, training needs assessment was used to determine the size, composition and distribution of the workforce; as well as, creating “universal” competencies used to establish a model training agenda for public health workers (Potter et al, 2000). The needs assessment process, involves determining general competitive goals or objectives the workforce is supposed to achieve, and define the knowledge, skills and abilities (KSAs) needed to fulfill these goals. Then we compare the current skill level of workforce to determine if they match the skills needed to carry out the jobs. In cases of a mismatch in KSA’s, appropriate training schedules and strategies are drawn up to address the skill gap and thus develop human capital to meet industry-specific needs at the micro level and economic development needs of the country at the macro- level (Gilothe, 2000).

At its most basic formulation, a need is a gap between current and desired results. A needs assessment identifies what is and what should be in terms of results (Rodriguez, 1988: 24). Needs

assessment involves taking an inventory of skills, knowledge and competencies of a given workforce to determine if they can effectively fulfill organizational goals. Brown (2002), avers that “training needs assessment is an ongoing process of gathering data to determine what training needs exists so that training can be developed to help the organization achieve its goal” (Brown, 2002: 569). This reveals the intentional goal towards which every needs assessment is directed. That is, as a training process, needs assessment is a targeted and strategic exercise that furnishes the empirical ground for training interventions that help achieve goals of organizations, institutions and states. Cast in this light, “conducting needs assessment is fundamental to the success of a training program. Often organizations will develop and implement training without first conducting a needs analysis. These organizations run the risk of overdoing training, doing too little, or missing the point completely” (Brown, 2002: 569). This brings to the fore, the rationale behind the needs assessment exercise. First, the primary goal is to identify specific problems areas or skill deficiencies that require intervention. This practice essentially defines your training goals and strategies adopted to achieve these goals. Without this process, workforce improvement would amount to a random effort to solve real workforce concerns with far-reaching implications (Brown, 2002). Second, needs assessment is used to obtain information, crucial in evaluating the effectiveness of the program. Third, the needs assessment process sets out to determine whether the costs of the training intervention matches the benefits derived (Brown, 2002). Consequently, “needs assessment is extremely important for trainers in order to plan, manage, and allocate program resources, and evaluate training program results” (Swierczek & Carmichael, 1985: 260). This is crucial, since implementing and developing human capital development strategies can be expensive, making needs assessment at the onset of training an important process, which tailors training to specific needs and helps in evaluation after training.

In a study by Guthrie and Schwoerer (1994), of 380 managers undergoing training, it was revealed that training efficacy and training utility was positively associated to self-assessed training needs assessment. They set out to determine the influences of self-assessed training needs on training utility and self-efficacy after training (Guthrie & Schwoerer, 1994). Ultimately this study shows the important role needs assessment plays in guaranteeing training efficacy and utility. Guthrie and Schwoerer (1994), hypothesized that “efficacious beliefs, a supportive environment,

and an understanding and acceptance of the areas in which one lacks skills or knowledge may all positively affect motivation to learn, it also seems reasonable to expect that they would affect perceptions of the usefulness or desirability of training” (Guthrie & Schwoerer, 1994: 406). In a review of studies by Tannenbaum and Yukl (1992), they emphasized the relevance of the needs assessment process to the individual and organization. For them “a properly conducted needs analysis yields information helpful to the development of the instructional objectives and training criteria” (Tannenbaum & Yukl, 1992: 400).

### **Methods of Needs Assessment**

A number of viable methods have been identified in practitioner literature that facilitates training needs assessment. The different characteristics of these methods can affect in different ways the kind and quality of the data obtained about skills and competencies (Brown, 2002). The methods include surveys/ questionnaires, interviews, observations, assessment centers, focus groups, document reviews and advisory committees. In carrying out a workforce needs assessment using these methods, issues of sampling could skew data, making assessments inaccurate. For instance, if you “sample people with varying experience levels, you will not have a valid sample, and training will only be effective for certain parts of the total population you targeted” (Brown, 2002: 574).

### **Needs Assessment in Developing Countries**

As may be inferred, conducting a needs assessment on a national scale can be problematic. The issues of sampling mentioned earlier come into play, as well as, economic constraints severely limit the needs assessment process when applied to national workforce. However, a study by Lall (1999), assess the training needs of developing countries by evaluating levels of market competitiveness and technological capability, represented by enrollment data in tertiary institutions of learning. This multidisciplinary approach draws impetus from human capital theory and the classical Harbison and Myers index (1964). The Harbison and Myers index measures national skill levels based on secondary and tertiary enrollments multiplied by five, with both enrollments as percentages of age groups in the workforce (Lall, 1999: 25). Because of its empirical nature, it avoids some of the disadvantages of the organizational needs assessment methods highlighted above. Lall (1999) draws from data of 120 countries from UNESCO, World Bank and Barro and Lee (1996), of secondary

and tertiary enrollment rates as a determinant of human capital formation. Using enrollment rates in technical fields, engineering and life sciences, he assessed the skill capacities of developing economies, and was able to determine the skills and competencies lacking that could foster technological and economic growth. His needs assessment highlighted the skills and competencies of the workforce in developing countries. This leads to the question of the nature of skills and competencies in general, and in concrete terms the current skill capabilities and deficiencies of workforce in developing countries.

### **TYOLOGY OF SKILLS AND COMPETENCIES**

Skills and competencies are crucial components of human capital. They represent in concrete terms the creative force that generates productivity, which in turn drives economic growth (Young, 2008). We need to adequately understand the meaning of skills and competencies, in order to determine the role they play in economic growth. Over time, there has been confusion about the nature of skills. Skills and competencies “ can be grouped and categorized in many different ways-there is no universal standard and people use a variety of terms, sometimes in overlapping or contradictory ways” to define skills (ILO, 2008:17). Because of this the need to define skills becomes more evident. For our purposes skills can be defined as “a person’s ability to perform specific, physical or mental tasks” (ILO, 2008: 17). Skills designate “an ability to perform complex motor and/or cognitive acts with ease, precision, and adaptability to changing conditions” (OECD, 2009: 7). A competency on the other hand, is “more than just knowledge or skills. It involves the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context” (OECD, 2009: 7). For instance, an individual’s ability to communicate effectively in any given setting is a competency, that may draw on an individual’s knowledge of language, practical IT skills and attitudes towards those with whom the individual is communicating (OECD, 2009). In this sense, it is a “complex action system encompassing cognitive skills, attitudes and other non-cognitive components” (OECD, 2002: 7). Thus competencies represent an aggregation of knowledge, skills and attitudes brought to bear on defined tasks. Given these general definitions, the question still remains, as to what skills need to be developed to stimulate economic growth in the developing world.



## **ILO Typology of Skills**

In an ILO study conducted in 9 developing countries in 2008, 4 broad categories of skills were identified. These skills are foundation skills, core skills for work, technical skills and entrepreneurial and business management skills<sup>3</sup>.

**Foundation skills.** These skills involve basic literacy and numeracy, as well as, the ability to apply these skills to specific situations. It is the “ability to read, understand, and use written material and basic numerical information” (ILO, 2008). They have been identified by a number of international agencies as a key skill for daily living and have an effect on the individual’s ability to acquire and develop other skills. Thus “ low literacy and numeracy skills, adversely affect individual’s capacity to develop other skills, find decent jobs, improve their standard of living and fully participate in society” (ILO, 2008). With the growth of the knowledge economy across regions, the importance of basic foundation skills cannot be overemphasized. The rapid rate of technological advancement, coupled with the demand on workers to be flexible, creative, independent and apply and transfer knowledge to different contexts, under different degrees of technological conditions makes basic foundation skills all the more of an imperative (ILO, 2008). Because foundational skills involve numeracy, its importance to our daily lives is enhanced. Numeracy in this context enhances foundational skills, and has been shown in some studies to determine a whole range of socially desirable outcomes. Numeracy-related skills “have been shown to be a key factor in labor market participation sometimes even more so than literacy skills. Adults with lower skills in numeracy and literacy are more likely to be unemployed or require social assistance. Further, some numeracy skills are deemed essential for post-secondary education in many areas, including but not limited to hard sciences, engineering and technology” (OECD, 2009: 8). Over all, foundation skills lie at the core of every other type of skill, and are important in the skill acquisition process.

**Core skills for work.** Based on foundational skills, core skills for work, are the generic skills that enhance employability and enable labor market participation. They have been defined as “ the skills, knowledge and competencies that enhance a worker’s ability to secure and retain a job, progress at work and cope with change, secure another job if he/she so wishes or has been laid off and enter more easily into the labor market at different periods of the life cycle” (ILO, 2008: 19). These skills include but are not

limited to, basic communication skills, team skills, problem solving and decision making, initiative and enterprise skills, planning, organizing, self-management, as well as, learning skills. A brief perusal of any job description reveals the importance of these skills. They represent the heart and soul of contemporary work organization, and are essential in this sense to labor force participation. With increased international economic integration, we have witnessed a convergence of sorts of work skills demanded by employers to achieve objectives. For instance this increased integration, has led to the need to communicate better in a more diverse workplace. Thus, listening, understanding, literacy, numeracy, negotiating, persuading and sharing information, essential communication skills have become necessary at the workplace.

**Technical/ Professional skills.** Technical skills refer to skills that equip individuals to carry out particular tasks. Examples of these skills are carpentry, basket making, metal work, lathe operation, welding, tin smiting, auto-repairs and shoe making. More “advanced technical skills such as veterinary work, engineering, physio-therapy, and high-level computer skills are normally referred to as professional skills” (ILO, 2008: 22). Technical skills can either be specific to a particular job or enterprise or else, they could be transferable from one job and industry to another. In this case, the development of transferable technical skills (and other transferable skills) creates more flexible and adaptable workers. Flexibility and adaptability are attributes that are becoming increasingly important. As technology advances, workforces become more mobile, and jobs for life become a thing of the past (ILO, 2008). In any discourse about technical and professional skills, the issue of competency attains relevance. Competency essentially involves possessing the knowledge and skills necessary to carry out a specific task. And because of the particular nature of the task, it is often associated with formal qualifications in technical skill areas, which incorporate competency standards and competency-based assessments (ILO, 2008).

**Entrepreneurial and business management skills.** These skill types represent the business knowledge and management skills necessary to succeed in a business enterprise. They include but are not limited to, book keeping, risk assessment, market analysis, planning, goal-setting, and problem solving. They are hinged upon foundation skills of literacy and numeracy.

## 21<sup>st</sup> Century Skills and Competencies

The concept of 21<sup>st</sup> century skills represents the skills and competencies that are more related to the needs of the emerging socio-economic model of development than with those of the previous model associated with the industrial mode of production (OECD, 2009). The concept of training for 21<sup>st</sup> century skills arose out of the technological and labor imperatives brought about by globalization. The sudden rise in the use of technology at the workplace, coupled with strategic shifts in industries in developed and developing economies, has brought to the fore the need for the global workforce to be trained in a specific way to meet current and future demands. For instance the shifts in employment in the United States from manufacturing prevalent in the 20<sup>th</sup> century to the service sector in the 21<sup>st</sup> century is one instance, that necessitates a change in workforce skill sets. Thus you find that workers need less technical skills and more of a mix of professional, foundation, business and entrepreneurial skills to remain relevant in the fast-paced service sector. This emphasizes the idea that for a country to remain competitive, its workforce must be trained in an array of skills that enable flexibility and change. In this sense, “proponents point to a new workforce reality that demands a next generation of college students and workers who are independent thinkers, problem solvers, and decision makers” (Silva, 2009: 630). In essence, 21<sup>st</sup> century skills represent a unique blend of all the skills mentioned earlier subsumed in technological literacy, which involves informational science, digital media fluency and advanced computer and internet communication. Proponents posit that today’s labor force must “be equipped with the set of skills and competencies which are suited to the knowledge economies. Most of them are related to knowledge management, which includes processes related to information selection, acquisition, integration, analysis and sharing in socially networked environments” (OECD, 2009: 5). The Organization for Economic Co-operation and Development (OECD) in a 2009 study, set out to discuss the relevance of 21<sup>st</sup> century skills and competencies in the current policy debate. Emphasizing the fact that there are few specific definitions of what these skills consists of, and seeks to determine a consensus definition for educational policy purposes (OECD, 2009). Using a survey of the 30 member countries of the OECD, they were able to show that there were few specific guidelines defining these skills and no clear formative or summative assessment policies for these skills. The importance of these skills, given the current economic context makes it imperative we define the meaning of these skills and competencies at a national and

regional level. In developing countries, this is more evident. With the opening up of economies through trade liberalization, deregulation and increased capital mobility, you find that the skill imperatives are much different from developed countries (Scott, 2006). In developing countries like India, you find emphasis is being made on a mix of technical, foundation and entrepreneurship skills as the primary imperatives of economic development. Thus skills “are critical in structural adjustment economies. As economies move from relative dependence on agricultural production to manufacturing and service industries, workers and enterprises must be able to learn new technical, entrepreneurial, and social skills. The inability to learn new skills because of inadequate basic education or lack of opportunity slows transfer for all factors of production from lower to higher added values” (ILO, 2008: 2). In the developing world, the need arises to train the workforce in an array of skills, to meet the technological demands of the 21<sup>st</sup> century.

## SKILLS AND PRODUCTIVITY

In order to understand the link between human capital and economic development, the real link between skills and productivity needs to be highlighted. In most developing countries, it is not the absence of work that stifles economic growth, but rather the prevalence of work that is insufficiently productive to yield a decent income; emphasis must be placed on improving productivity growth and employment (ILC, 2008). Given this, it is necessary to determine the relationship between skills, productivity and employment growth. The ILO defines productivity as “a relationship between outputs and inputs. It raises when an increase in output occurs with a less than proportionate increase in input, or when the same output is produced with fewer inputs” (ILC, 2008: 5). Productivity is measured in terms of all factors of production combined (total factor productivity) or in terms of labor productivity. Labor productivity can be defined as “output per unit of labor input, measured either in terms of the number of persons employed or in terms of the number of hours worked” (ILC, 2008: 1). In human capital theory, the lack of internationally comparable data on skill sets of workforce, has led to the use of education attainment and literacy rates as rough proxies for skills in studies (ILO, 2008). In a study conducted by Lockheed, Jamison and Lau (1980), they demonstrated that four years of education (HC) for farmers makes a difference to agricultural productivity of about 10 percent in a modernizing environment. They set out to determine the link between human capital growth and productivity. The

modernizing environment in this context refers to a condition where new crop varieties, innovative planting methods, erosion control, and the availability of capital inputs such as insecticides, fertilizers, and tractors are applied in conjunction with human capital (Lockheed et al., 1980).

This emphasizes the role skills play in productivity. Skills raise productivity in a number of ways. First, skills improve the productivity of the individual in terms of employability, wage rates, stability of job and employability across jobs and industries. Second, skills improve productivity at the enterprise level in terms of output per unit of labor, market share and export performance. In a study by Hatch and Dyer (2004), they were able to show that human capital increased the competitive advantage of firms in the semiconductor industry. They conclude that “firms that emphasize human capital development through training in statistical process control find that their employees are more productive and can meaningfully participate in the learning activities of the firm” (Hatch & Dyer, 2004: 1173). Further they aver that the deployment of human capital to learning activities creates significant cost advantages for the firm. Emphasizing how the training received by equipment operators, is integrated into the firm’s problem-solving activities, which is then added to the effort and moves the technology to a significantly lower learning curve, relative to firms that do not use operator knowledge in problem-solving (Hatch & Dyer, 2004). Third, skills improve productivity by facilitating increased output in the informal sector of the economy, which helps curb underemployment and poverty (Palmer, 2008).

It must however be emphasized, that skills alone do not improve productivity. Skill development only represents a portion of the productivity dynamic. Other factors of production play important roles in productivity. It is important to recognize that skills development and other investments in human capital comprise only one set of factors necessary for productivity growth. Skills development alone cannot raise enterprise and national productivity. Other “factors and policies are likewise insufficient if they are implemented in isolation of skills development” (ILC, 2008: 2). At the enterprise level, other factors like availability of capital, business management and organizational changes all affect productivity. For the individual, issues of motivation, commitment, experience and training could possibly affect productivity. The point however, is that skills are indispensable in assessing productivity. Thus for developing countries to reap the fruits of skills development (HC), they should integrate HCD

programs with broader development strategies in order to enhance productivity and employment growth (Palmer, 2008). Skill development “is therefore one of the key determinants of how, and for whom, productivity growth translates into employment growth, and possibly, into better work in the informal economy or to movement between the informal and formal economies” (Palmer, 2008: 1). Overall, it becomes evident that skills play a crucial role in productivity. The question however still remains as to the relationship between skills and levels of industrial development.

### **Skills, Competencies and Levels of Economic Development**

Any discourse on human capital, must consider its relation to the level of economic and industrial development. By fostering productivity, skills create competitive advantages and surplus value, used to upgrade technology and diversify economic activities, facilitating economic development. This interplay between skills, competencies, productivity and technology produces employment opportunities that increase GDP and overall growth. Thus “while technological change increases productivity in enterprises and value chains, diversification into non-traditional activities creates demand for labor and new employment opportunities” (ILC, 2008: 9).

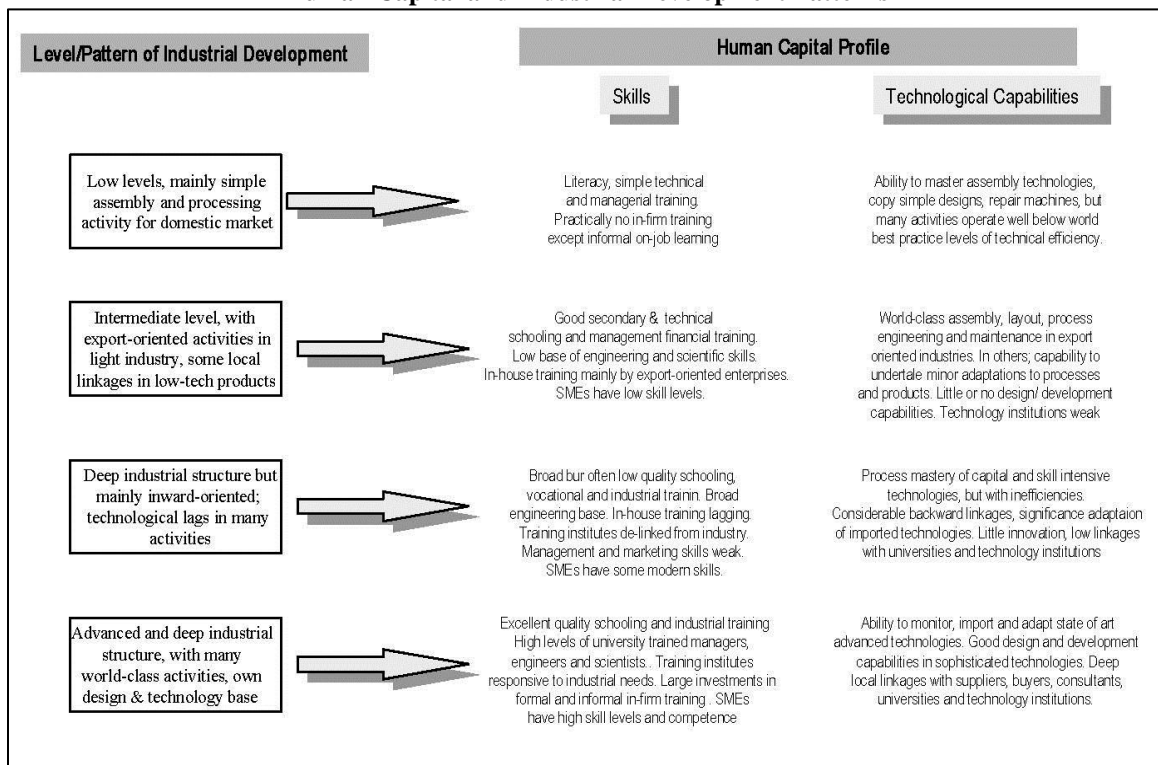
In developing countries, productivity in the formal and informal economies remains low. Productivity growth is founded on “making changes in production processes to lower unit costs and shift production to goods and services that yield higher returns” (ILO, 2007: 41). Skills development is therefore essential to improving productivity, income and access to employment opportunities. Training and education improve the capacity of workforce to absorb information, operate new technologies and enhance flexibility. Consequent on the foregoing, “an educated and competent workforce is an important factor of economic growth: it facilitates the move away from traditional production models towards more sophisticated and high value-added products, commodities and services for global markets” (ILC, 2007: 41). This emphasizes the role technology plays, linking skills and productivity to economic development. At the tertiary level of analysis, there exists a link between the skill level of a country’s workforce, and the level of economic development. Without certain kinds of skills, the transformation of the productive process, necessary for economic development cannot occur. The transfer and successful absorption of new technologies in developing countries is by and large dependent on the availability

of competent professionals, technicians and skilled workers (ILO, 2007). Increased international economic integration (Globalization), has led directly to the emergence of myriad technologies that facilitate communication, and improve economic production processes. This technology demands a better skilled workforce to manage them and makes human capital development an economic imperative.

In a study conducted by Lall (1999), he determined that “building human resources involve two distinct processes- skill development through formal education and training and capability formation through specific technology-based experience” (Lall, 1999: 19). The formal training and technology based experience required for growth, varies depending on the level of economic development and the current

skills of the workforce of a particular country. Each level of development represents a groundswell of specific skills and competencies. In light of this, Lall avers that “the move from one level of competitiveness to another requires changing both the skill creation system and the way that the productive system uses it, contributes to it and interacts with it” (Lall, 1999: 19). Figure 3 illustrates the relationship that exists between the given skill mix of a workforce and the level of economic development and industrial growth. Here you find that, higher level professional and managerial skills typical of knowledge economies are associated with developed countries. While lower level technical skills are associated with lower technological growth and thus, lower levels of development.

**FIGURE 3**  
**Human Capital and Industrial Development Patterns**



Source: Lall (1999)

Figure 3 shows that the more developed an economy, the higher the level of skills possessed by the workforce and the higher the level of development and vice versa. This implies that there is a relationship between skills upgrade and industrial growth and as such, developing countries should focus on skill upgrades as a path to improving industrial growth. Thus “the new technological paradigm calls for more skills, for higher levels of skills and for different kinds of skills. The pace and ubiquity of technical progress

means that all activities have to improve their technologies, and so the skills needed to operate them, if there are to compete” (Lall, 1999: 3). By acquiring higher level skills and investing in technology, developing countries will be able to improve productivity and master newer technologies, which would bolster production of goods in which they have a competitive advantage. However, before embarking on HCD strategies, individual countries must devise strategic plans and objectives that would guide action

and determine the skills and competencies to be developed. Given limited resources in developing countries, and large training expenses, it is necessary for nations to craft national goals around which particular training strategies emerge. This leads us to investigate the role of the government in the human capital development of its workforce.

### **NATIONAL TRAINING OBJECTIVES**

Understanding the rationale behind HCD strategies requires that we situate strategies within the developmental context of a country. Thus, we must take into account the workforce needs, skills and competencies, level of technology and level of industrial development. All of which, have been shown to determine the nature, structure and intent of HCD strategies. Another important factor in HCD is the role of the government in determining national training objectives. The influence of the state in the development of overarching goals that anchor individual HCD strategies cannot be overemphasized. National governments play a strategic role in the development of the workforce. It is little wonder that, “government policies to promote learning are then the most important factor in national competitiveness” (Lall, 1999: iv). The importance of the role of government in financing, as well as, creating objectives for education in the United States was alluded to in Friedman (1955). It has been established earlier that to achieve competitiveness, a country must develop its workforce. But to do this, there must be a framework, strategy or target if you will, that directs and sustains HCD strategies. These training objectives may either be limited to sectors of the economy or may cover all industries. The government sets national training objectives in a number of ways.

### **National Qualification Frameworks**

A national qualification framework is a comprehensive system, that is derived from the decision to establish a common system for accrediting training and learning that covers as wide a range of sectors as possible. It establishes benchmarks, against which all learning can be assessed in terms of its potential contribution to qualification (Young, 2005). In general, “NQFs are top down initiatives led by governments or government agencies, and based on a set of general principles about how qualifications should be designed and what they should achieve” (Young, 2005: 8). NQFs are hinged on informed assumptions about the nature and changing structure of occupations and their myriad modes of recruitment and promotion (Young, 2005). A typical NQF

establishes commonality across qualifications and lays out in detail the standards, levels and outcomes of qualifications. In specifying outcomes, NQFs lay out training objectives that are meant to guide the action of training institutions like universities and vocational institutions. In effect, the goal of NQFs is to integrate disparate HCD practices, with the aim of achieving strategic national workforce goals (Ensor, 2003). National qualifications frameworks are established to achieve a number of goals. First, it is established to improve the flexibility of education and training systems. Second, it is set up to widen participation in training and increase mobility of learners. Third, it establishes quantitative measures for comparing different national training systems, and sets up training objectives for qualifications for each occupation and industry across the country (Young, 2003). Countries like England, Scotland, New Zealand, Australia and South Africa all have various NQF systems.

### **National Legislation/Policy**

They are policies through which government institutes training objectives for workforce development and competitive advantage. They are federal legislations and policies that seek to ensure that training for human capital development is targeted towards achieving specific goals determined by the workforce needs and national consensus. The American Workforce Investment Act of 1998 (WIA), is a prominent example of such national legislations. The goal of this legislation is to “consolidate many workforce and education programs and requires a restructuring of the workforce delivery systems in states and regions that pay greater attention to employer involvement, regional labor markets, competitive procurement, and benchmarking” (Giloth, 2000: 340). The emphasis on employer driving training, regional labor markets and competitive procurements are objectives determined by the Federal policy of the United States. Bringing to the fore, the reality that training objectives are determined by the competitive and skill needs of a country.

Developing countries because of lower levels of skills have a higher need for training. Such countries create laws and policies that foster the skill needs of the country to facilitate greater technological change in production processes. In India, the government in 1983 recognized the immense growth potential of the software and ICT industry. The government decided to take advantage of the future growth in the industry by setting up strategic national training objectives, targeted at developing the Indian workforce to meet future ICT needs. To this end, they set up the Computer Manpower Development program in 1983

to carry out specific training objectives. Following the institution of this policy, state-led HCD strategies developed to bolster tertiary-level training capacities, which led to the growth in graduates of computer science and engineering. To do achieve the policy objective, “a task force on human resource development in IT was set up for preparing a long-term strategy for increasing the number of well-trained IT professionals” (Bajwas, 2003: 50). These graduates served as the backbone of the ICT revolution in technological hubs like Bangalore, and were crucial for software success in India (Bottini et al, 2007). The role of the government in setting training objectives to direct the growth of technically skilled workers in the ICT industry was brought to the fore in studies by Arora and Gambardella (2004). In their study of the globalization of the software industry, they showed that investment in human capital for the ICT industry from about the mid-1970s up until the late 1980 by India, Ireland and Israel led to an economic boom represented by the substantial rise in GDP per capita in the software industries of those countries (Arora & Gambardella, 2004). National legislations and policies targeted at developing specific skill sets have also emerged in developing countries in Sub-Saharan Africa like Ghana. In 2006 the Ghanaian parliament passed the bill that established the Council for Technical and Vocational Education and Training (COVET). The goal of this institute was to “formulate national policies for skills development across the broad spectrum of formal, informal and non-formal education. With the council in place, the expectation is that a comprehensive demand-driven system can be established and financed” (Palmer, 2008: 19). It can be seen that national training policies have a vital role to play in the development of human capital strategies.

### **HUMAN CAPITAL DEVELOPMENT STRATEGIES**

Developing countries have over time, adopted myriad strategies to train and develop their workforces to meet global economic challenges and rise out of the cycles of low skills and poverty. The rise in poverty levels and the pedestrian pace of industrial growth, despite these strategies has occasioned an inquest, to determine the efficacy of these strategies in matching national workforce policy. In developing countries, the challenge is to develop a whole range of skills from the foundation skills to business and entrepreneurship skills. Human capital development strategies can be broadly classified in 5 groups. Namely: cooperative training systems, FDI dependent training systems,

state-led training systems, enterprise training systems and NGO sponsored systems.

#### **Cooperative Systems**

This system is a product of the interaction between employer groups, employee groups and the government and is thus tripartite in nature. It involves cooperation between all stakeholders who could potentially benefit from the development of the workforce. Employers, employees and relevant government agencies work together to offer the training necessary to effect change. The German vocational training system is the most popular example of this system. In Germany, employers offer apprenticeships to trainees in all sectors of the economy. While the Chambers of Industry and Commerce is primarily involved in registering apprentices and setting qualification standards. Training is offered by public vocational schools, with employees bearing part of the cost through lower wages during training and employers bear the rest of the cost (Lall, 1999). Some developing countries, have adopted variants of this strategy at the community level to great effect to reduce poverty. For instance in Bangladesh and Pakistan, the Training for Rural Economic Empowerment program (TREE), emphasizes the role of training as part of an integrated set of interventions. Here training is based on “the principles of community participation and the creation of local partnerships to identify development opportunities and constraints, and help drive forward program implementation” (Palmer, 2008). Although not as developed and institutionalized as the German system, the TREE program promotes a collaborative approach between trainees, local employers and the government that facilitates linkages between training, skill creation and productivity at work.

#### **FDI-Dependent Training Strategies**

This represents training strategies that are reliant on foreign direct investments primarily furnished by multi-national corporations (MNC). This strategy relies on low labor costs or natural resources to attract FDI, which will in turn lead to an upgrade of skills and technology to enhance productivity (Lall, 1999). Countries that adopt this strategy rely on MNC to furnish technological investment, and to that extent MNC dictate the kind of skills to be developed. The MNC simple taps into its large internal reserve of skill, technical support and finance to implement the learning process among the workforce of the host country. In a FDI-dependent strategy, “MNCs transfer the technologies suited to existing capabilities in host economies. Where skills, supplier capabilities and



technical knowledge are low, they import simple labor-intensive technologies and create the capabilities to use these efficiently” (Lall, 1999: 10). Despite this, studies have shown that MNC’s do not invest in creating advanced skills, or transfer advanced functions that are efficiently centralized elsewhere (Lall, 1999). In such cases, there is no material gain to be made by the MNC, in duplicating its production processes by training for advanced skills and capabilities, when it has other operations in its supply chain set-up to fulfill those skill needs. The role of the government in facilitating the training of an “array of skills” becomes all the more important. This applies, because only “the government can upgrade the skill creation system or boost supplier capabilities. If they do not, MNC export activity can remain technologically stagnant at low levels” (Lall, 2009). Despite its pitfalls, some developing countries like Malaysia, have adopted this strategy to great effect.

### **State-Driven Strategy**

This strategy essentially involves the state directly funding and financing education, vocational training and professional development programs, to enhance the skills and technological know-how of its workforce. This system typically proceeds in a couple of ways. First the state institutes training programs to create skills necessary to sustain an industry prior to funding and establishing the industry (Lall, 1999). This form of state driven training was used in South Korea to develop the skills of its people and provide manpower necessary for state-run industries. Second, is the strategy where the state funds education and vocational training without providing links to employment. In this case, state driven strategies are typically supply oriented. In developing countries, policy makers make resource allocation decisions and training design measures without reliable training data. In most cases, the only data available to them are on the supply of graduates from public vocational-technical institutes. Because of this, training policies developed tend to be supply oriented. The typical policy response, to skill short falls is often to expand the supply capacity of vocational institutions (Tan & Batra, 1995).

The major pitfall of this strategy is that it fails to take into consideration changes in demand and technology in training for skills. By failing to “recognize the fact that skill requirements can change with shifts in demand, evolving patterns of international competition, and new technology, these supply oriented policies often result in mismatches between skills supplied by public training institutions and those needed by industry” (Tan & Batra, 1995: 2).

This form of HCD strategy is prominent in developing countries. However, in the 1950’s the United States adopted a similar strategy (Friedman, 1955). Friedman notes that “education is today largely paid for and almost entirely administered by governmental bodies or non-profit institutions” (Friedman, 1955: 1). This harkens back to a time in the United States, where the state played a major role in HCD. Recently, increasing deficits, external debt and the rise of enterprise training has reduced the role of the U.S government in the development of workforce skills. State driven strategies could be financed in ways other than direct allocation of funds. Steuerle (1999), showed a number of ways the state could fund education and training using different tax instruments. He showed how states could use tax credits or deductions to finance training and education and thus improve human capital.

### **Enterprise Based Training Strategies**

These are training strategies that are provided primarily by business enterprises. Simply put, they train workforce to meet firm-specific needs. Thus, “when training is provided by employers, the issue of matching training supply and demand does not arise. Firms train only for needed skills. And because most new technologies enter developing countries through enterprises, employers have the equipment and technical information needed to determine what skills are needed” (Tan & Batra, 1995: 2). It seeks to provide training that will produce long-term employment and low labor mobility. Enterprise training strategies emphasize firm specific training, which limits the transferability of the skills gained during training and limits labor mobility. This form of training was made popular by the Japanese, but developing countries like Colombia, Mexico and Malaysia have adopted a similar strategy. In a study by Tan and Batra (1995), they set out to determine what factors affect the decision of organizations to adopt enterprise training in developing countries. Studying five developing countries, (Colombia, Indonesia, Malaysia, Mexico and Taiwan, China) they were able to highlight common enterprise training determinants from the cross-national analysis. They determined that firms in developing countries, “are more likely to train when they are large, employ an educated and skilled workforce, invest in R & D and technology licenses, emphasize quality control methods, have foreign capital participation and export to foreign markets” (Tan & Batra, 1995: V).

## NGOs and HCD

The *laissez faire* approach to workforce development adopted by a number of national governments in developing countries, has led to the increased role of non-governmental agencies in HCD in countries like Kenya, Peru and Bangladesh (Ranis, Stewart & Ramirez, 2000). These training programs are driven by private, non-profit, professional organizations, primarily concerned with public welfare goals. In the developing world, “NGOs include philanthropic foundations, church development agencies, academic think-tanks and other organizations focusing on issues such as human rights, gender, health, agricultural development, social welfare, the environment, and indigenous people” (Clarke, 1998: 37). Some of these organizations use training to achieve their goal of poverty reduction. These organizations typically try to address poverty, by promoting the acquisition of core work skills and business and entrepreneurship skills in the developing world. In most cases, they determine training needs and design, and base training on their perception of the needs of the host community.

In some cases, NGO’s seek to connect business enterprises, governments and international agencies to create partnerships, which helps grow both business and local communities. In this case, the NGO seeks to position local enterprises and MNCs as the lead partner in international development. Organizations like the International Business Leadership Forum (IBLF), attempt to achieve HCD by appealing to the

business interests of companies in developing countries, to engender corporate social responsibility that could lead to training solutions to developmental challenges. The IBLF are of the opinion that “companies have vested interest in addressing development issues in order to provide a stable environment in which to operate and grow” (IBLF, 2011). In regard to human capital development, they seek to identify and highlight the human capital needs of the local community, and make attempts to position businesses to take action in addressing these needs through vocational training programs or direct investment in basic education for foundation and core work skills (IBLF, 2011).

It must be noted however, that no country adopts wholesale a single HCD strategy. Countries either adopt a preponderance of one strategy over the others or have developed a system where all strategies are employed in varying degrees to achieve HCD. What becomes evident is that, the complex and evolving nature of human capital requires, an equally complex and malleable system that can at once address the specific skill needs of a country, and adapt to changing technological and competitive imperatives. Because of the practical relevance of HCD strategies, it becomes necessary to place them in context of the particular countries they are employed. This leads us to analysis of developing countries that represent the 5 broad strategies identified. Table 1 illustrates the main features of these strategies. At this juncture, it becomes necessary we look into HCD strategies employed in selected developing countries.

**TABLE 1**  
**Main Features of Human Capital Development Strategies**

Strategy	Examples	Main Features
Cooperative	Latin American countries, Germany	Pressures to train from cooperation between employers’ organizations, government and trade unions
FDI-driven strategy	Malaysia	Training determined by MNC attracted by natural resources, tax concessions and low labor costs.
Enterprise based strategy	Japan, UK and USA	Low labor mobility, lifetime employment, absence of stock-market pressures. Few institutional pressures to train
State-led strategy	Singapore, Taiwan, transition economies, developing countries in Asia and Africa	State plays leading role in coordinating demand for and supply of skills, in open competitive environment. Government takes responsibility for training in institutions. Little pressure for employers to train.
NGO’s	Developing countries in Africa , Asia and Latin America	NGOs initiate and obtain funding for the design vocational training programs. NGOs create collaborative environment to encourage business involvement in funding education and training programs. Little pressure on employers to train. Government is not involved in training and education of workforce.

Source: Adapted from Lall (1999), with modifications by the author.

## **ANALYSIS OF HUMAN CAPITAL DEVELOPMENT PRACTICES IN DEVELOPING COUNTRIES**

To determine the efficacy of human capital strategies in practice, it is necessary to detail country specific HCD practices. This affords insight into HCD practice and helps determine whether workforce development practices, meet the national training objectives. An understanding of the purpose of institutions set-up to achieve these goals, will facilitate a better understanding of the HCD system in developing countries and guide policy recommendations targeted at enhancing existing systems in developing countries.

### **Human Capital Development Practices in Singapore**

A detailed exposition of human capital development practices in Singapore was undertaken by Lall (1999) and Kurvilla, Erickson and Hwang (2001). In Singapore the government has taken the initiative in human capital development, investing heavily in creating high-level skills to drive the targeted upgrading of the industrial structure. The tertiary education system was expanded and directed towards the needs of national industrial policy. The government emphasized specialization at the tertiary level, changing focus from social studies to technology and science oriented fields. To achieve this, the government exercised tight control of curriculum content and quality, and ensured its relevance to national industrial objectives. Aside formal education, the government also embarked on enhancing the industrial training system. To this end, the government extensively promoted employee training programs held outside the firm. The government set-up the Skill Development Fund in 1979, along with a Skill Development Levy, which collects a tax of 1 percent of payroll from employers, to subsidize the training of low-paid workers. This symbolized the “identification of technology-intensive and knowledge-intensive industrial structure and high value-added orientation as national objectives” (Lall, 1999: 36). The government runs 2 national Universities, four polytechnics and numerous public or non-profit specialized institutions for a population of 4.5 million people. 41 percent of University graduates were in technical fields as at 1996. Polytechnics aim at meeting the strategic needs of mid-level technical and managerial skills, emphasizing engineering at every point. Numerous state funded institutes of technical education provide

blue-collar workers with secondary education with courses to upgrade skills. Skills trained are primarily demand driven, as the Polytechnics and technical institutes work closely with businesses in designing courses and providing practical training. The Adult Cooperative Training Scheme, introduced in 1993, provides training for semi-skilled and un-skilled workers aged 20 to 40.

The Vocational and Industrial Training Board (VITB), established in 1979 is an integrated training structure that has trained and certified about 9 percent of the existing workforce as of 1999. The VITB oversees a number of other programs. The Full-Time Institutional Training Program offers broad-based pre-employment skills training for school leavers. The Continuing Skills Training Program is composed of part-time skill courses. Customized courses are also offered by the VITB to workers based on requests from companies and are specifically tailored to company needs. The VITB’s Training and Industry Program offers apprenticeships to recent school leavers and ex-national servicemen to undergo technical skills training while earning wages. Off-the-job training including theoretical lessons and technical training is conducted at VITB institutes or industry/company training centers. The government in this case, partners with foreign enterprises to set up centers, funding a large part of salaries while employees are being trained. Under the Industry-Based Training program, employers conduct skill training courses that match their specific need in line with the VITB mandate. The VITB also provides testing and certification of trainees and apprentices. It also offers trade tests for public candidates. VITB in partnerships with industry, certify skills in retailing, health care and travel services. In 1995 the investment in training by the government had reached 3.6 percent of annual payroll in 1996 and remained up until 2000.

The Economic Development Board was established under the Ministry of Trade and Industry and charged with the responsibility of attracting foreign direct investment and meeting foreign investor’s demands for skilled personnel (Kuruville, Erickson & Hwang, 2001). The EDB assesses emerging skill needs continuously in consultation with leading enterprises in the economy. After experiencing full-employment for 2 decades, the government identified the need to upgrade the skills of its workforce to higher level technical and professional skills to meet challenges posed by globalization and shifts in production. To this end, they set up the Institute of Technical Education (ITE), to facilitate the

upgrade of skills in the workforce. Another key institution involved in the Singapore training system is the Council for Professional and Technical Education (CPTe). It is “an independent body that takes overall responsibility for matching the demand and supply for skills in the economy. Based on existing levels and estimated future needs, this body works together with different parts of the education system (University, polytechnics and schools) and skills development institutions (Institute of Technical Education, Productivity and Standards Boards) to ensure the supply of sufficient numbers of workers with the level of skills for industry requirement” (Kuruvilla et al, 2001: 4). The CPTe serves the purpose of coordinating private enterprise skill needs and ensuring these needs are met.

### **Human Capital Development Practices in South Africa**

A brief look at the South African training and education system, affords us insight into HCD in a country that can be classified as at once a developed and developing country (Kraak, 2005). The existing system of training and education is fraught with divisions and inequalities as a result of the country’s history of apartheid (Christie, 1996). The origins of the skills policy is “intricately linked to our history as an Apartheid state, the legacy this presented in the labor market and the efforts post-1994 to ameliorate the inequities of “Bantu” education” (Daniels, 2007: 1). The training and workforce development system in South Africa has evolved to address acute shortages in professional and business skills, ignoring the importance of foundation and core skills of work to the development of human capital across ethnic and racial lines (Kraak, 2005). The transition from primary sector employment in 1994 (mining and agriculture) to the technologically driven tertiary (service) sector over the last 20 years has led directly to structural unemployment. Individuals, who worked in the primary sector, cannot obtain jobs in the new economic hub (service sector) because they lack required skills. Thus you have in South Africa a large demand for highly trained technologically savvy workers, coupled with an oversupply of unskilled and low-skilled workers. This has led to a mismatch between labor demand and supply characteristic of state-driven HCD strategies (Daniels, 2007).

The policy response to this skills crisis was the enactment of the Skills Development Act (SDA) of 1998. The Act established a national regulatory framework that consists of the National Skills Authority (NSA) and 25 Sectoral Education and Training Authorities (SETA). The Act created a link

between national policies and state skills policies, while all business enterprises are required by law to submit Workplace Skills Plans that effectively link firm level training policies to sectorial level policies (Daniels, 2007). These newly formed institutions were a substantial improvement from previous state led institutions they replaced. The now defunct National Training Board (NTB) and Industrial Training Board (ITB) created a legacy of declining enterprise level training initiatives, lack of public-private partnerships and the systematic exclusion of the informal sector, pre-employed and unemployed youth from the institutional framework (Alibier, 2003).

-To finance these new initiatives the government, enacted the Skills Development Levies Act in 1999, which placed a 1 percent tax on payroll expenditures. The underlying logic behind this government strategy is that “public provision of these services is necessary to correct the market failures associated with historically poor levels of investment by enterprises in personnel training” (Daniels, 2007: 6). The Department of Labor’s National Skills Development Strategy established the concept of learnerships as a strategic goal of the SDA. Learnerships are seen “as a complement to apprenticeships, and a key method to improve skills development for high, intermediate and low-level skills” (Daniel, 2007). Learnership programs are predominantly but not exclusively targeted at intermediate skills (technical skills by our typology). The Department of Labor Strategy targets all three skill levels by focusing on a) General education (Schooling, adult basic education and training), b) Supply-side dimension of HCD by providing higher education at tertiary levels, c) Demand-side dimension of skill provision in terms of employer demand d) National systems of research and development to foster innovation (Kraak, 2005).

To achieve its objectives of educating and training for skills that are relevant to the national objectives, the government instituted the National Qualification Framework. This provided a guide in terms of specifications of training content and design by which SETA, agencies under the department of education, and learnerships at the enterprise level must conform. The NQF provides a guide to training action in learnership programs and SETA programs and are the basis upon which these programs are evaluated. These guidelines encompass assessment, feedback, and quality management systems and procedures. A study by Daniel (2007), revealed that enterprise level training actions in Workplace Skills Plans, were not being implemented by employers because they failed to see the relevance of SETA and questioned their capacity to set training goals that address employer

manpower needs (Daniels, 2007). The government's communication of training initiatives with employers has not been especially clear, leading to misconceptions about learnership programs, which have ultimately curbed its effectiveness. Thus "it is not always clear whether employers know exactly what SETAs should be doing. Recently the Minister of Labor has had to remind the public that learnerships co-exist with apprenticeships and that these are initiatives can be implemented simultaneously" (Daniels, 2007: 11). This emphasizes the fissures within the legalistic training framework, and suggests that a more collaborative strategy to HCD must be employed to alleviate acute skill shortages and unemployment pervasive in South Africa. The failure to link skill acquisition to productivity is a glaring omission that may be responsible for the lukewarm response by employers to government initiatives. The fact that the SETA and the SDA focuses on learnerships as a means of addressing the skills shortage is another failing that negatively impacts the efficacy of this strategy. Since the fall of apartheid in 1994, a gradual shift in economic production from the extractive industry to the service industry has increased the demand for workers with professional, core work skill and business management skills (Daniel, 2007). Learnerships in the main enhance technical and foundation skills and in this sense, do not meet the skill needs of employers. This mismatch of supply and demand is responsible for low productivity and the failures of this training system.

### **Human Capital Development Practices in India**

The Indian system of human capital development is highly fragmented and uneven. With the successes of the high-skilled urban sectors like Bangalore, co-existing in stark contrast to illiteracy and high-poverty that characterizes the rural predominantly agricultural parts of the country. The fact that 70 percent of the population depend on rural income and agriculture, has brought to light the need to develop the competencies of the rural population to enhance their longevity, productivity and reduce poverty (Rao, 2004). Over the past 10 years, the share of employment in agriculture has been decreasing with rural-urban migration, while the service sector has experienced large employment gains. However, with the an estimated 12.8 million labor market entrants each year, employment growth in urban areas is insufficient to absorb the influx of largely unskilled workers (ILC, 2008). To address these issues, the state Planning Commission has adopted a 3 pronged policy of expansion, quality and inclusion. Under India's five year plan, of expansion (2007-2012) the state

"foresees a tenfold expansion of education and training infrastructure, from some 5,000 to about 50,000 Industrial Training Institutes (it is) and training centers under the Ministry of Labor and Employment, to provide training in relevant skills for industry, service sectors and also skills for agricultural and rural employment" (ILC, 2008: 41). In terms of quality, the governments with the assistance of World Bank funds have upgraded training facilities, tools, faculty and curricula of about 500 schools and institutes. Transforming them to "Centers of Excellence", that will be closely linked to industry. State governments will still retain ownership and control of Centers under this initiative. With 90 percent of the workforce in the informal sector of the economy, the government set up the Skills Development Initiative to provide skills that would improve the productivity and income-earning capacity of 1 million workers over the next five years, and 1 million workers each year after that (ILC, 2008). The Ministry of Labor and Employment is implementing a pilot program focusing on the 4 clusters of brassware, glassware, textiles and domestic work to improve productivity, competitiveness and employability of workers in this clusters.

The urgent need to address the challenges of the informal economy, led the government to providing technical and entrepreneurial skills to members of the workforce in this sector. The National Vocational Training System (NVTs) was set up to address these needs. The courses designed under this program "meet the needs of different target groups are: modular, of short duration-each leading to identified employment, competency oriented, with not much theoretical content, directly influenced by market opportunities, with a lot of emphasis on linking the training with the employment markets as well as with the skills market" (Palmer, 2008: 31). To address the training needs for the high-tech industry emerging in India, the Center for Research and Industrial Staff (CRISP) was set up. CRISP is jointly sponsored by the state and private sector participants and trains the employed, as well as the unemployed, giving special attention to underprivileged groups in the society in the informal sector (Palmer, 2008). CRISP administers computer literacy programs, data entry programs and computer engineering programs for rural youths. Human capital investment in the ICT industry has its origins in the early 1980s. During this time, the government identified employment potential of the ICT industry, and invested heavily in manpower training in computer sciences (Bottini et al, 2007). Education capacities were significantly expanded at the tertiary level under the Computer Manpower Development Program. The rapid growth in the

number of graduates in computer science and engineering led to the emergence of India in ICT. Other government institutions have played a key role in training and development in India. These include the National Council of Educational Research and Training (NCERT), the Ministry of Human Resource Development and the National Institute of Educational Planning and Administration (NIEPA).

A brief survey of the mandates of these institutions, reveal considerable overlap and duplication, which leads to questions of redundancy. To address the seeming disjointed approach to skills development and training, the Ministry of Labor in 2008, laid out the National Skills Development policy. The policy sets out to eliminate redundancies in skills development and coordinate the activities of the numerous ministries, states, institutions and universities involved in human capital development (Anand, 2009). The policy strives to merge the disjointed training system by establishing a National Vocational Qualifications Framework (NVQF).

## EVALUATION AND RECOMMENDATIONS

From our discussion so far, a number of concepts have been established. First, in order to evaluate an adopted HCD strategy, we first must understand the specific skill needs of the country, its technological imperatives, its national objectives and attempt to match the skills trained for in strategies adopted to meet national training goals. For developing countries, developing the workforce to meet the current needs of increased poverty reduction, improve employability, productivity and ultimately international competition, have become national objectives of training and skill development. Meeting these challenges call for a coordinated, continuous and demand- driven system that is responsive to the technological fluctuations in the global economic production process.

### Basic Education

The analysis of the nature of skills reveals that foundation skills are the bedrock upon which other skills are built. This makes basic education an essential prerequisite of any skill development program. This is more pertinent in the developing world where illiteracy is prevalent, especially in rural communities. Basic education “needs to be regarded as an essential prerequisite and foundation for access to education and further training and as a basic right for unlocking other rights, such as the right to decent work, employment, cultural and political participation, economic wellbeing and security” (Palmer, 2008: 49). The experience of Singapore reveals the important role the

government is obligated to play, in providing basic education for foundation and core work skills. The development of higher level skills is contingent on the existence of basic foundation skills. Any developing country that fails to offer basic skills through primary education runs the risk of wasting a crucial economic resource.

### Collaboration

A common theme in developing countries is the prevalence of the state led strategy in HCD. There are a number of challenges with this approach, the most prominent being that it is supply-side driven. This system “ fails to recognize that skill requirements can change with shifts in demand, evolving patterns of international competition, and new technology, these supply oriented policies often result in mismatches between skills supplied by public training institutions and those needed by industry” (Tan & Batra, 1995: 2). A poignant instance is brought to light in the South African scenario, where employers attitude to SDA and SETA programs are look warm because these systems fail to take into consideration the specific technological needs of employers. Valuable lessons can be learnt from the Singapore experience, where training and education was targeted at specific needs determined by partnerships between employers and government under the aegis of the IBT and EDB. These partnerships help create synergies that can be leverage during the training and education process. A study by Walther (2007), reveals that “training cannot achieve maximum efficiency unless all the stakeholders are directly involved” (Walther, 2007: 157). Thus developing countries should actively seek the involvement of indigenous and foreign enterprise partners in HCD to improve the efficiency of strategies adopted.

It establishes a tripartite system, akin to the cooperative system, and facilitates commitment and group identification to national objectives. This creates a collaborative environment and ensures the interests of all parties are served by the new training system. This partnership also serves the purpose of linking training and education to the level of technological growth sustainable by the economy, crucial to international competition. In this sense, “governments have overall responsibility for creating, in consultation with social partners, the enabling framework to meet current and future skills needs” (ILC, 2008a: 3). Research in labor and technology trends should be a primary objective in designing training systems in developing countries. This ensures existing skill and education systems are continuously reassessed and revamped to match emerging trends and create higher



skills equilibriums (HSE), evident in the Singapore experience. Developing countries should however, adopt policies that match their different levels of development. With different economic and social conditions that require a nuanced approach to education and skill development. This implies that the “design, sequencing and focus of their policies to initiate and strengthen skills, productivity, employment and decent work need to respond to their different levels of development” (ILC, 2008a: 4).

### Coordination

The Indian experience brings to light the problems that may arise, because of the lack of coordination in the education and training of the workforce. The emergence of multiple institutions, whose mandates overlap, only creates bloated bureaucracies that hinder the development of workforce in real terms. Coordination of relevant training agencies is required to maximize efficiency. The “coordination of skills training modalities is required first and foremost to avoid wasting scarce resources through the duplication of training offered” (Palmer, 2008: 18). The fact that different agencies (ministries, employers and NGOs) offer training often without any form of strategic coordination makes training inefficient and affects transfer of skills. Coordinated training and education, in line with national skills development strategy is important for skills delivered to have an impact on productivity (Palmer, 2008).

### Targeting

The targeting of training and skill development strategies is a valuable tool in addressing skill needs to alleviate poverty and improve productivity (Kraak, 2005). The Indian case reveals the reality that different groups within society have different training need. For instance the training needs of skilled ICT professional widely varies from the training needs of an unskilled farmer. A truly balanced training system requires addressing different skill needs at different skill levels. In setting national objectives for the workforce, emphasis should be placed on developing an array of skills, rather than single skill-sets. That is, foundation, core work skills, technical, professional and entrepreneurship and business skills should all be developed and emphasized within the system. Special attention should be paid to disadvantaged groups to ensure an equitable training system. In many developing countries, you find that certain groups (women, individuals with disabilities, individuals in certain castes) are excluded from training and education systems (ILC, 2008a). Offering targeted

training and education systems will address the deficiencies of traditional training systems, providing the most vulnerable groups in society a means to escape poverty, by acquiring skills that make them employable and productive. This benefits the individuals affected, businesses and the overall economy.

### CONCLUSION

The analysis of skills reveals that developing countries must take into consideration the current level of skill, economic and technological development in designing HCD policy. To this end, a nuanced country-specific approach must be taking to determine practices that train for the right kinds of skill-mix given technological limitations. Evidence from Singapore, South Africa and India, emphasize the imperative of basic education, collaboration, co-ordination and targeting in mapping out policy. Empirical evidence is required to determine the effects of these policy decisions on HCD efficacy, emphasizing the importance of quantitative measures in determining policy effects on HCD practice. In practice, developing countries should, continuously strive to establish linkages between skills, productivity and employment in their quest to foster economic development.

### REFERENCES

- Ali, M. 2005. Globalization and industrial relations of China, India, and South Korea: An argument for divergence. University of Rhode Island, Schmidt Labor Research Center, Seminar paper series, <http://www.uri.edu/research/lrc/research/papers.htm>
- Aliber, M. 2003. Chronic poverty in South Africa: Incidence, causes and policies. *World Development*, 31(3): 473-490.
- Anand, Y. K. 2009. National qualifications framework in TVET for India-Issues and Challenges. International conference on harnessing qualification framework toward quality assurance in TVET, Manila, Philippines.
- Anvari, R., Amin, S., & Seliman, S. 2010. Personal needs assessment approach in strategic training and affective commitment. *International Journal of Business and Management*, 5(7):144-157.
- Arora, A., & Gambardella, A. 2004. The globalization of the software industry: Perspectives and opportunities for developed and developing countries. National Bureau of Economic Research

- working paper series.  
<http://heinz.cmu.edu/research/172full.pdf>
- Arora, A., Gambardella, A., & Torrasi, S. 2001. In the footsteps of silicon valley? Indian and Irish software in the international division of labour. Stanford Institute for Economic Policy Research.
- Bajwa, G. S. 2003. ICT policy in India in the era of liberalization: its impact and consequences. *GBER*, 3(2): 49-61.
- Barro, J. 1991. Economic growth in a cross section of countries. *The Quarterly Journal of Economics*, 106 (2): 407-443.
- Baldacci, E., Clements, B., Gupta, S., Cui, Q. 2004. Social spending, human capital, and growth in developing countries : Implications for achieving the MDGs. IMF Working paper, WP/04/217, Fiscal Affairs Department.
- Becker, G., Murphy, K., & Tamura, R. 1990. Human capital, fertility and economic growth. *Journal of Political Economy*, 98 (5): 12-37.
- Benhabib, J., & Spiegel, M. M. 1994. The role of human capital in economic development: Evidence from aggregate cross-country data. *Journal of Monetary Economics*, 34: 143-173.
- Bottini, N., Ernst, C., & Luebker, M. 2007. Offshoring and the labor market: What are the Issues? International Labor Office, Employment Analysis and Research Unit.  
[http://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---emp\\_elm/---analysis/documents/publication/wcms\\_113922.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_elm/---analysis/documents/publication/wcms_113922.pdf)
- Braun, A. 1979. Assessing supervisory training needs and evaluating effectiveness. *Training and Development Journal*, 33(2): 3-10.
- Brown, J. 2002. Training needs assessment: A must for developing an effective training program. *Public Personnel Management*, 31(4):569-577.
- Calvo, G., & Mendoza, E. 2000. Capital-market crises and economic collapse in emerging markets: An informational-frictions approach. *AEC Papers and Proceedings*, 90 (2):59-64.
- Cascio, W.F. 1994. Public investments in training: Perspectives on macro-level structural issues and micro-level delivery systems. PA: National Center on the Educational Quality of the Workforce, University of Pennsylvania.
- Christie, P. 1996. Globalization and the curriculum: Proposals for the integration of education and training in South Africa. *International Journal of Educational Development*, 16(4): 407-416.
- Clark, G. 1998. Non-governmental organizations (NGOs) and politics in the developing world. *Political Studies*, 46: 36-52
- Conover, M., Jensen, G., & Johnson, R. 2002. Emerging markets: When are they worth it. *Financial Analyst Journal*, 58(2): 86-95.
- Cook, S. 2005. Learning needs analysis methods. *Training Journal*, 54-58
- Curran, J., & Stanworth, J. 1989. Education and training for enterprise: Problems of classification, evaluation, policy and research. *International Small Business Journal*, 7(11):11-22.
- Daniels, R. C. 2007. Skills shortages in South Africa: A literature review. Development Policy Research Unit, Working paper 07/121.  
[http://www.commerce.uct.ac.za/research\\_units/dpru/workingpapers/pdf\\_files/wp\\_07-121.pdf](http://www.commerce.uct.ac.za/research_units/dpru/workingpapers/pdf_files/wp_07-121.pdf)
- Davidsson, P., & Honig, B. 2003. The role of social and human capital among nascent entrepreneurs, *Journal of Business Venturing*, 18( 3): 301-331.
- Ensor, P. 2003. The national qualifications framework and higher education in South Africa: Some epistemological issues. *Journal of Education and Work*, 16(3):325- 346.
- Errunza, V. 1983. Emerging markets: A new opportunity for improving global portfolio performance. *Financial Analyst Journal*, 39 (5) 51-58.
- Florida, R., Mellander, C., & Stolarick, K. 2008. Inside the black box of regional development: Human capital, the creative class and tolerance. *Journal of Economic Geography*, 23 (2):1-35.
- Friedman, M. 1955. The role of government in education. *Economics and the Public Interest*, ed. Solo, E.A. Trustees of Rutgers College in New Jersey.
- Garett, G. 2001. The Distributive Consequences of Globalization. Yale University,  
<http://www.international.ucla.edu/cms/files/conseall.pdf>
- Garett, G. 2004. The Three Worlds of Globalization: Market Integration, Economic Growth and the Distribution of Income in High, Middle and Low-

- Income Countries. University of California (UCLA),  
[http://www.international.ucla.edu/media/files/Garrett\\_3\\_worlds\\_globalization.pdf](http://www.international.ucla.edu/media/files/Garrett_3_worlds_globalization.pdf)
- Giloth, R. P. 2000. Learning from the field: Economic growth and workforce development in the 1990s. *Economic Development Quarterly*, 14(4):340-359.
- Grant, J. 2002. Learning needs assessment: Assessing the need. *British Medical Journal*, 324(7330):156-159.
- Guthrie, J.P. & Schwoerer, C. E. 1994. Individual and contextual influences on self-assessed training needs. *Journal of Organizational Behavior*, 15(5):405- 422.
- Goldstein, I.L., & Ford, J.K. 2002. Training in organizations: Needs assessment, development and evaluation, 4<sup>th</sup> edition, Wadsworth, Cengage Learning.
- Hatch, N. W., & Dyer, J. H. 2004. Human capital and learning as a source of sustainable competitive advantage. *Strategic Management Journal*, 25(12): 1155-1178.
- International Business Leaders Forum (IBLF). 2011. <http://www.iblf.org/en/whatwedo/humancapital.aspx>
- International Labor Conference, 97, Report V. 2008. Skills for improved productivity, employment growth and development, [http://www.ilo.org/wcmsp5/groups/public/---ed\\_norm/---relconf/documents/meetingdocument/wcms\\_092054.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_092054.pdf)
- ILC. 2008a. Conclusions on skills for improved productivity, employment growth and development, [http://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---ifp\\_skills/documents/publication/wcms\\_103457.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_103457.pdf)
- International Labor Office. 2008. Skills development through community based rehabilitation: A good practice guide. International Labour Office, [http://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---ifp\\_skills/documents/publication/wcms\\_132675.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_132675.pdf)
- International Labor Office. 2010. A Skilled Workforce for Strong, sustainable and Balanced Growth: A G20 Training Strategy, [http://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---ifp\\_skills/documents/publication/wcms\\_151966.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_151966.pdf)
- International Labor Office. 2007. The decent work agenda in Africa: 2007-2015. 11<sup>th</sup> African Regional Meeting, <http://www.ilo.org/public/english/standards/relm/rgmeet/11afrm/dg-thematic.pdf>
- ILO Regional Skills and Employability Program in Asia and the Pacific (Skills-AP). 2008. Issues in Workplace Learning in Asia and the Pacific. [http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms\\_098875.pdf](http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_098875.pdf)
- Konstantinov, F. 1982. The fundamentals of Marxist-Leninist philosophy, Moscow: Progress Publishers.
- Kraak, A. 2005. Human resource development and the skills crisis in South Africa: The need for a multi-pronged strategy. *Journal of Education and work*, 18(1): 57-83.
- Kremer, M. 2003. Randomized evaluations of educational programs in developing countries: Some lessons. *The American Economic Review*, 93(2): 102-106.
- Krishna, A., & Shrader, E. 1999. Social capital assessment tool. Conference on social capital and poverty reduction, World Bank.
- Kuruville, S., Erickson, C. L., & Hwang, A. 2001. An assessment of the Singapore skills development system: Does it constitute a viable model for other developing nations. *Articles & Chapters*, paper 214, [http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1215&context=articles&sei-redir=1#search="an+assessment+of+the+singapore"](http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1215&context=articles&sei-redir=1#search=)
- Lall, S. 1999. Competing with labor: Skills and competitiveness in developing countries. Development Policies Department, International Labor Office, Discussion Paper 31

- Levin, A., & Raut, L. 1997. Complementarities between exports and human capital in economic growth: Evidence from the semi-industrialized countries. *Economic Development and Cultural Change*, University of Chicago press, 155-173.
- Levin, A., Renelt, D., & Esfahani, H. 1991. Exports, imports and economic growth in semi-industrialized countries. *Journal of Development Economics*, 35(1): 93-116.
- Lichtveld, M.Y., Cioffi, J.P., Baker, E.D. & Bailey, S. B.C. 2001. Partnerships for front-line success: A call for a national action agenda on workforce development. *Public Health Management Practice*, 7(4): 1- 7.
- Lockheed, M., Jamison, D., Lau, L. 1980. Farmer education and farm efficiency: A survey. *Economic Development and Cultural Change*, 29(1): 37-76.
- Marthur, V.1999. Human capital-based strategy for regional economic development. *Economic Development Quarterly*, 13(3): 203-216.
- Mayer, J. 2000. Globalization, Technology Transfer and Skill Accumulation in Low-income Countries. United Nations Conference on Trade and Development (UNCTAD), Discussion paper No. 150, [http://www.unctad.org/en/docs/dp\\_150.en.pdf](http://www.unctad.org/en/docs/dp_150.en.pdf)
- Milanovic, B. 2003. Can we Discern the Effect of Globalization on Income Distribution ? Evidence from Household Surveys. *The World Bank Economic Review*, 19(1):21-44.
- Miller,S., & Upadhyay, M. 2000. The effects of openness, trade orientation, and human capital on total factor productivity. *Journal of Development Economics*, 63(2000): 399-423.
- O'Connor, D., & Lunati, M.D. 1999. Economic opening and the demand for skills in the developing countries: A review of theory and evidence. OECD Development Center, Working Paper No.149
- OECD. 2009. 21<sup>st</sup> century skills and competences for new millennium learners in OECD countries. OECD Education Working Papers, No. 41, OECD Publishing.
- Okada, A. 2004. Skills development and inter-firm learning linkages under globalization: Lessons from the Indian automobile industry. *World Development*, 32(7): 1265-1288.
- Olayinka, K. 2009. Economic Liberalization and Job Creation in Nigeria. *Central Bank of Nigeria Economic and Financial Review*, 47(1):69-99.
- Onwuka, C.E., & Equaveon, A. 2007. Globalization and Economic Development: The Nigerian Experience. *Journal of Social Science*, 14(1):45-51.
- Organization for Economic Co-operation and Development, accessed February 10, 2011, [http://www.oecd.org/document/0/0,2340,en\\_2649\\_34447\\_37679488\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/0/0,2340,en_2649_34447_37679488_1_1_1_1,00.html)
- Palmer, R. 2008. Skills and productivity in the informal sector. International Labour Office, Skills and Employability Department, [http://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---ifp\\_skills/documents/publication/wcms\\_103983.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_103983.pdf)
- Partnership for 21<sup>st</sup> Century Skills. 2008. 21<sup>st</sup> century skills, education and competitiveness: A resource and policy guide. [http://www.p21.org/documents/21st\\_century\\_skills\\_education\\_and\\_competitiveness\\_guide.pdf](http://www.p21.org/documents/21st_century_skills_education_and_competitiveness_guide.pdf)
- Potter, M.A., Pistella, C.L., Fertman, C.I. & Dato, V.M. 2000. Needs assessment and a model agenda for training the public health workforce. *American Journal for Public Health*, 90(8): 1294-1296.
- PIAAC Numeracy Expert Group. 2009. PIAAC numeracy: A conceptual framework. OECD Education Working Papers, No. 35, OECD Publishing.
- Ranis, G., Stewart, F., & Ramirez, A. 2000. Economic growth and human development. *World Development*, 28(2): 197-219.
- Rankin, k. 2002. Social capital, microfinance, and the politics of development. *Feminist Economics*, 8(1): 1-24.
- Rao, T. V. 2004. Human resource development as national policy in India. *Advances in Developing Human Resources*, 6(3): 288-296.
- Rodriquez, S. R. 1988. Needs assessment and analysis: Tools for change. *Journal of Instructional Development*, 11(1): 23-28.
- Rychen, S. 2003. Investing in competencies-but which competencies and for what?. A contribution to the

- ANLC/AEA Conference on Assessment Challenges for Democratic Society, Lyon.
- Samoilenko, S., & Ngwenyama, O. 2011. Understanding the human capital dimension of ICT and economic growth in transition economies. *Journal of Global Information Technology Management*, 14(1): 59-79.
- Scott, A. J. 2006. The changing global geography of low-technology, labor-intensive industry: Clothing, footwear, and furniture. *World Development*, 34(9): 1517-1536.
- Silva, E. 2009. Measuring skills for 21<sup>st</sup>-century learning. *The Phi Delta Kappan*, 90(9): 630-634.
- Steuerle, E. 1996. How should government allocate subsidies for human capital. *The American Economic Review*, 86(2):353-357.
- Stiglitz, J. 2002. *Globalization and its discontents*, New York/London: W.W. Norton Company.
- Swierczek, F. W. & Carmichael, L. 1985. Assessing training needs: A skills approach. *Public Personnel Management*, 14(3): 259-274.
- Tan, H. W. & Batra, G. 1995. Enterprise training in developing countries: Overview of incidence, determinants and productivity outcomes. World Bank, Private sector development department, Occasional paper 9, <http://www.oecd.org/dataoecd/10/33/2731650.pdf>
- Tannenbaum, S.I & Yukl. G. 1992. Training and development in work organizations. *Annual Review of Psychology*, 43: 399-441.
- United Nations Department of Economic and Social Affairs. 2009. *Rethinking Poverty: Report on the World Social Situation 2010*.
- Walther, R. 2007. Vocational training in the informal sector; or how to stimulate the economies of developing countries? Conclusions of a field survey in seven African countries (Paris, Agence Francaise de Developpement).
- Young, M. F. D. 2005. National qualification frameworks: Their feasibility for effective implementation in developing countries. International Labour Office, Skills and Employability Department.
- Young, M. F. D. 2003. National qualification frameworks as a global phenomenon: a comparative perspective. *Journal of Education and Works*, 16(3): 223- 237.