# From the Guest Editors

## *Deconstructing ICT Skills and Employability*

## Introduction

Economic empowerment for marginalized people is one of the core interests driving ICTD practice and scholarship. Many non-governmental organizations state that improving the economic livelihood of their communities is one of their most important missions. Many training programs, from those which are donor- and public-supported to those which are privately operated, have been built with the express purpose of providing people who come into the centers with the skills they need to be hired by a local company, obtain a better-paying job, or start a microenterprise.

While numerous studies have documented the labor markets for high-end ICT skills (programmers and other IT specialists), surprisingly little research has been conducted on basic ICT skills—those skills needed to perform the common tasks associated with almost any job—especially among underserved communities in developing countries. It is for this reason that we organized this special issue, to capture and encourage research in this area.

This topic is now all the more poignantly relevant due to the current global economic crisis. Around the world, people are re-skilling and up-skilling themselves in the hopes of becoming more competitive in the labor market. In the United States, for example, the older workforce, many of whom were retired and must now return to work, cite information technology as the number one skill where they require training (AARP, 2007). This is in an environment where more than half of today's jobs require the use of a computer (Workforce Development Council of Seattle—King County, 2007). Whether it is for an underserved member of a developed or a developing country, how will such skills translate into employment opportunities? What are the most effective ways for people to learn and apply ICT skills across diverse population types and socioeconomic contexts? Are educational institutions, NGOs, and other organizations applying effective strategies? What is the role of national policy?

## *Employability Is Not the Same as Employment*

Over the last two years, the Center for Information & Society at the University of Washington has conducted research into the above questions to understand the role of basic ICT skills[1] among the myriad of factors that affect employment prospects, the practices of NGO training programs, and the pathways people take into the labor market. In framing this issue, we posit that employability is not the same as employment. Employment is a binary concept—you can count employment rates. Employabil-

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1. Defined by the Commission of the European Communities (2007): "The capabilities required for effective application of ICT systems and devices by the individual. ICT users apply systems as tools in support of their own work, which is, in most cases, not ICT. User skills cover the utilization of common generic software tools and the use of specialized tools supporting business functions within industries in addition to the ICT industry."

ity, on the other hand, describes "a set of factors, processes, [and training opportunities] that enable people to progress towards or get into employment, to stay in employment, to move on in the workplace, [or to find entrepreneurial opportunities]" (Government of Scotland, 2007). We believe this broad definition of employability provides a more appropriate construct to explore if, as well as the extent to which, ICT skills play a role in helping low-income groups improve their economic opportunities.

There are a variety of factors that influence the progress toward employability beyond an individual's ICT knowledge, skills, and attitudes, such as level of formal education, social networks, a region or community's economic viability, social class, caste, gender stereotypes, learning styles, and labor market dynamics, among others. A community's social and cultural fabric also plays a decisive role in attracting and retaining the most competitive workers (Sullivan, 2009; West & Garrido, 2007; Chapple, 2006; de Grip & Zwick, 2005; Houston, 2005; Fugate et al., 2004; Brown et al., 2003; Peck & Theodore, 2000; and Hillage & Pollard, 1998). Precisely because employability encompasses the combination of factors that demand contextualization, it creates a fertile ground for innovative research that explores the role of ICT skills in this process. The challenge for researchers in this field is to talk about employability by drawing from particular cases and examples, but also by extrapolating the findings to make them relevant and transferable across settings.

## *Basic ICT Skills and Employability—Do They Play a Role?*

Our research has further identified three roles that basic ICT skills play in promoting progress toward employability:

1. **Gateway skills.** People can be excluded from consideration for employment just by virtue of not being able to demonstrate basic ICT knowledge, such as might be shown by a certificate. In these cases, no amount of effort to conduct an online job search, write a résumé, or receive assistance in other areas will make a noticeable difference. ICT skills are often a gateway that enables the possibility of employment.

2. **One among many necessary skills.** ICT skills can be a necessary element of the set of requisite skills. Communication, critical thinking, and teamwork are examples of others that are frequently cited (Conference Board, 2006). Many organizations that promote employability weave ICT skills into a larger curriculum of such foundational skills. In these cases, ICT skills may tip the balance, or they may "keep the applicant in the running," so that some other variable can come into play.

3. **Catalyst for *key* skill development.** In some settings, basic ICT skills have become so prevalent that, once the gateway function is satisfied, ICT skills are never referenced again. They are taken for granted, like reading and numeracy, particularly in settings saturated by training opportunities and exposure to technology. In these settings, domain expertise or some *other* differentiating characteristic is the key. Computer training sometimes attracts students, catalyzing the pursuit of *other* skills and services. For example, someone may enroll in a computer class because it is modern and attractive. Perhaps they may have a positive learning experience and decide to pursue advanced education at a trade school or community college. In instances like these, the computer skills did not tip the balance per se, but the computer training program catalyzed a series of events that did.

At the same time, we should caution that basic ICT skills are rarely the missing link that miraculously transforms employment prospects. Lower wage, lower skill workers typically face multiple barriers, many of which are more complex than unfamiliarity with email or word processing. ICT literacy cannot be isolated from larger social and personal contexts. Soft skills are important, as are solutions to challenges such as childcare, affordable housing, transportation, time, and appropriate attire. Homeless and immigrant populations operate under additional constraints. The hurdles are diverse and individu-

alized, and ICT must be integrated into this larger context of needs to credibly advance employability and economic opportunities for low-income groups.

## *Papers in This Special Issue*

In November 2008, the guest editors invited submissions that address the relationship between ICT skills and employability. The four research articles and three forum pieces selected for publication present findings highlighting a diverse range of local contexts, nuances, social forces, policy directions, and other factors that contribute to employability capabilities and outcomes.

*Walton, Putnam, Johnson, & Kolko* examine the role of ICT skills and employment in the context of the Central Asian nation of Kazakhstan. Their findings indicate that, while ICT skills can be a predictor of employment and higher income, the levels of ICT skills required to obtain these jobs are not as high as one may expect. They argue that what are perceived as basic ICT skills in a developed nation are considered sophisticated skills in developing countries and transitional economies. This finding has implications for policy and program development aimed at improving employability, and they suggest that training efforts should focus on contextualizing the meaning of basic skills to local socioeconomic settings.

*Mariscal, Botelho, & Gutierrez* analyze the role of non-governmental organizations (NGOs) in providing ICT skills training to improve the employment opportunities for youth in Brazil, Colombia, and Mexico. The authors argue that NGOs play important roles as liaisons for effective adoption of ICTs among youth and for the development of some of the professional skills required to enter into the labor market. However, most NGOs in these countries are small and fragmented, and they have only limited capacity to understand the trends and demands of the labor market and form partnerships with potential employers. These limitations hamper their ability bridge the gap between ICT skills training and employment.

*Tapia & Maldonado* use the mandatory migration to open source software by the government in Venezuela to explore the extent to which a policy-oriented approach to universal skills can provide opportunities for ICT skills transfer to traditionally underserved populations. Although the data to measure the success of this approach is still limited, the authors argue that the strategies employed by the Venezuelan government have the potential to begin a cascade of change throughout the country.

*Dunn* examines the experiences of the Caribbean nations of Jamaica and Trinidad and Tobago. The author argues that extensive penetration of mobile telephony in the islands can potentially open economic opportunities for poor and marginalized communities and make the region more competitive in the global economy. He proposes to use telework as a strategy to exploit the advantages of a Caribbean workforce and the use of the mobile phone as a bridging technology to encourage more advanced usage of other ICTs by marginalized groups for a wider range of work-related activities.

*Kluzer & Rissola* discuss the European Union's e-Inclusion initiative, and in particular, the policies aimed at improving the standing of marginalized groups in the labor market. The authors state that the shrinking labor force in Europe demands concise and orchestrated policy actions that help improve ICT access and digital literacy among underserved populations. Using the experience of immigrants and ethnic minorities in EU countries, the authors argue that a bottom-up approach to ICT skills development would enhance the chances for integrating these minority groups into the labor market by better matching their competencies to job-task needs.

*Schware* discusses the role of Business Processs Outsourcing Centers (BPOs) in promoting economic development for rural communities using the "rural business kiosk project" known as *Nemmadi* in the State of Karnataka, India. He argues that the build-own-operate model that *Nemmadi* uses can help address, to some extent, sustainability problems that many telecenters face. In addition, rural business centers can promote economic activities by outsourcing services and increasing employability prospects in rural areas.

*Lanvin & Králik* argue that, as global competition is becoming highly knowledge-centric, the skills related to information-intensive societies (e-Skills) are becoming increasingly strategic. This trend is making more visible the growing gap in the ability of existing educational systems to produce e-skilled workers. The authors propose a multi-stakeholder approach to skills development as a key condition for narrowing the e-Skills gap. Adjustments of educational systems, promotion of career prospects for IT jobs among women, and other steps are required in order to improve access to both the labor market and to upward mobility opportunities.

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