WORK IN THE INFORMATION SOCIETY: PAST AS PROLOGUE TO THE FUTURE IN UNDERSTANDING OUR TRANSFORMATIONAL TIMES

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Abstract

Embracing a past-present-future framework, the session invites participants on a journey and into a dialogue about the meaning of the "information society" and "work" in that context to illuminate the difference between change and transformation. A brief jaunt through the history of previous societal transformations coupled with a projection into the future, both immediate and long range, sheds light on the challenges to our professions and illuminates the internal and external resources available in helping both adults and society grow into our future. Our fundamental concepts of work, education, and humankind itself, beckon us into dialogue.

Keywords: social transformation, information society, future of work, adaptation, UNESCO, dialogue

Revisiting our Human Societal Trajectory

Throughout the history of life on this planet adaptation has been an essential ingredient in surviving as well as thriving in and with one's environment, especially during transformational times. An adaptation is frequently a response to some force or pressure that has caused or is causing change, reducing one's ability to successfully function in the environment unless one adapts. Today we are confronted with a need to adapt to what has been termed the Information Age or Society, an evolving concept that purportedly is being catalyzed by Information and Communication Technologies (ICTs). An important point to stress, however, is that adaptations are required not just of individuals but of the very structures of society itself, making such a change transformational in nature – that is, restructuring the social order, the social structures[2], and the institutions[3] of

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[2] Often, but not always, the terms social order and social structure are used interchangeably. The commonality the terms share implies that there is a stable infrastructure to a society provided especially by the major institutions and "the patterned and relatively stable arrangement of roles and statuses found within societies and social institutions" [Drislane & Parkinson, 2002].

[3] In the broad social science sense of the term, institutions address different social functions in a society and are most affected by social transformations. It is important to differentiate, however, between specific concrete institutions and the concept of

society. Accordingly, we are in the midst of a social transformation. Of course, we have an opportunity to not just react, but also contribute to its unfolding in a manner beneficial to both the individual and society.   A seemingly straightforward understanding, often offered, centers on the production of goods and services which, with industrialization, relied on the advent of the machine and resulted in greater material production with the accompanying design and division of the labor force. An information society, and the advent of ICTs, results in greater production and transmittal of information at higher speeds, lower costs, and distributed instantaneously around the globe. The information society, however, is a more multi-faceted concept and phenomenon, as will be discussed in this symposium and conference. Furthermore, many us in this field of study and practice have, for at least four decades or more, recognized and are continually addressing the challenges of galvanizing an information rich society into a learning society that sports access, availability of opportunities, and the development and nurturance of S/self-directing[4] learners. The labor force? The very term may need reconceptualization. Work? Some incipient changes are already evident; others are more far reaching. Our gathering together in Romania offers us an unprecedented opportunity to dialogue with each other about how we might best prepare both ourselves and the work force for the Information Society or its successor.

While the information society is often seen as technological in nature, technology[54] has always served as a catalyst throughout history for the major transformations of humankind, an insight I gleaned when I first started seriously studying societal transformations for my doctoral dissertation [Boucouvalas, 1980]. The domestication of the plant and animal catalyzed our transformation to an Agricultural Society, invention of the machine catapulted us into the Industrial Society, just as communication and computer technologies are fueling the Information Society. All those changes led to more mega changes in social dynamics. For example, with the risk of oversimplifying, those who were landowners were accorded status during the purely Agricultural Era, during the advent of Industrial Society

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institution such as education, religion, work, the family, etc., all of which are affected by a major societal transformation.

[4] In my writings I differentiate between self (lower case "s") and Self (capital "S") to reference, accordingly, the autonomous separate self sense and the homonomous larger sense of Self.

[5] Arthur (2009) makes the case that we should not think of technologies as "fixed in structure" (p. 41) for they are constantly changing and adapting, as – I might add – society and individuals are simultaneously called upon to adapt. Implications for us as educators of adults resonate with the title of Robert Kegan's book: *In Over Our Heads: The mental demands of modern life* (1994).

capital and material goods took precedence, while now it is "knowledge" that is becoming a key attribute.

Two points, though, are important to address: (a) Agriculture and landowners, of course, have not evaporated but have been transformed by the Industrial and Information Revolutions, (b) Not all corners of society transform simultaneously. Transformation is often an incremental process.

The initial emergence of our current transformation was recognized as early as the 1950s when, at least in the USA, data from the Department of Labor Statistics revealed a shift as the jobs in the service sector began to outnumber those in agriculture and industry. Equal recognition was given during that time period to understanding the awareness put forth by Alfred North Whitehead at the beginning of the twentieth century that, as the time span of knowledge was shortening, the life span of an individual was increasing, necessitating learning throughout life and lending fuel to the advancement of adult learning and education as a field of study and practice. We have certainly leapt forward in Whitehead's realization since then.

As early as the 1950s cultural historians, social scientists, and others were also aware that society was in the midst of a coming transformation. A major contributor – and one who deeply influenced my thinking – was Lewis Mumford, especially his book on the *Transformations of Man* [1956]. In fact, his prescient prediction was that "this change promises to be so profound that one must emphasize it by bestowing upon it a new name, to indicate that the process of infusing values and meaning into every phase of life will not stop with the formal school" (pp. 241-242). My encapsulated version of his book that I first constructed in 1980 (see Table 1, appended), has guided my understanding over the decades and influenced my perspective. In tracing the great transformations of humankind, it becomes clear that all transformations have likewise included major shifts in worldview and image of humankind, as well as attitudes, values, and belief systems. Equally clear is the rapidity with which change, especially that of a transformational nature, is occurring. All major institutions of society (see endnote 2) are affected, especially two with which our field is integrally involved: Work and Education**.**

The Concept of Work

What do we mean by the term "work" and "workforce"? As Applebaum [1992] has clearly demonstrated, work has been conceptualized differently in various ages from ancient times to the present. In post Homeric ancient times leisure was heralded by the aristocracy and those who had to work were either pitied, scorned, or spurned, with exception of the independent farmer who was respected. Applebuam also makes a major

distinction between pre industrialized non market cultures where work is not as separate a sphere of life as it is in industrialized societies where for many work is considered work, not necessarily an avenue of fulfillment, bringing us up to the present day where meaningful work is sought by many. Looking at the future of work, he is of the position that work can be restored to its "human dimensions and meanings" (p. 590).

What frames our understanding of work today and by whom? With telecommuters, new business ventures and professions, and the rise of free agents, understanding the guiding image of "work" that informs our actions individually and collectively would be helpful. The way people are working and the relationship between individuals and organizations is changing. The rise of free agents, in fact, is burgeoning and, according to Pink (2001), it constitutes the "most significant transformation since Americans left the farm for the factory a century ago. Legions of Americans, and increasingly citizens in other countries as well, are abandoning one of the Industrial Revolution's most enduring legacies – the "job" – and are forging new ways to work" (pp. 10-11). He further emphasizes that "understanding these new independent workers will be crucial to …the nation's social and economic future (p. 11). Beyond the USA countries such as Qatar have legalized the one person company [see At'Tarawneh, 2007]. What is happening in your countries, in the countries represented here at this conference, and what is our responsibility to help prepare this work force –or will they prepare us for the future? All these challenges are questions for us to pursue when we think about preparing the "workforce" for the Information Society.

The Concept of Education

An educated individual in earlier times was one who was educated in the liberal arts. With the rise of professional schools in higher education an increased emphasis was placed on practical application, and – looking into the future – advances are already afoot addressing the educated person of the future as one who understands the state specificity of knowledge (that is, that some things are learned better in a different state of consciousness) but has honed the ability to enter and exit that state at will to glean the learning [see Roberts, 1989]. These perspectives, however, need not be mutually exclusive.

In preparing a workforce (however that is defined) for the Information Society knowledge of the liberal arts along with practical knowledge and skills development, as well as self-knowledge of one's ways of knowing and levels, states, and structures of consciousness have the potential to cultivate a flexible worker. Providing guidance for a confluence of these varying perspective is the UNESCO [DeLors, 1996]

conceptualization of learning, which I embrace as a framework for our discussion [that is, skills development – learning to do something – learning to know, learning to be, learning to live together, and a more recent addition, learning to change]. I suggest that "work" holds the potential for developing all these aspects of learning not only for one's job but for navigating life itself, especially beyond content as in preparing the workforce to learn to change. UNESCO, however, offers us an even greater framework for pursuit of our theme of workforce development in the information society with its Global Intergovernmental Assemblies that gather heads of state along with civil society in preparing negotiated and agreed upon communiqués as well as action plans that emerge to guide professional practice.

The Current Global Context and the Contribution of UNESCO

The United Nations and UNESCO have been key players in recognizing the transformational nature of our times, both in terms of the specifically targeted World Summit on the Information Society (WSIS), which took place in two parts: Geneva, 2003 and Tunisia, 2005, coordinated by the Communications Sector of UNESCO and the four recent Global Assemblies on Education hosted by UNESCO's Education Sector during 2008-2009, guided by a holistic vision of education.

World Summit on the Information Society (WSIS)

The Plan of Action resulting from the WSIS is an ambitious one that reaches around the globe and into many strata of society, the objective being to "build an inclusive information society," recognizing that "the Information Society is an evolving concept that has reached different levels across the world, reflecting the different stages of development" (see WSIS URL in references and visit the website for the Plan of Action). Among the matters advocated are public-private partnerships and multi-sector partnerships, the importance of infrastructure , capacity building, enabling environments, and the application of ICTs in all aspects of life, including "new ways of organizing work and business," involving but not limited to promoting teleworking. An equal emphasis is directed to ethical dimensions and preventing abusive use of ICTs. Moreover, monitoring of results has continued on a yearly basis.

Sponsored by the UN, both governmental as well as nongovernmental organizations (Civil Society) continue to be vital parts of the discussions. Even a brief perusal of the resulting materials and projects from the Summit illuminates the wide swath of society to which efforts are directed. In addition to the use of ICTs in distance learning per se, one finds

e-business, e-commerce, e-health, e-governance (catalyzing citizen involvement), and others. Special populations such as the marginalized, disabled, or indigenous populations are also highlighted as are success stories on the WSIS web portal, thus inspiring others. UNESCO has taken up the task of translating matters into practice under the mantle of the knowledge society and has distributed several publications toward that end. While annual post assembly meetings have transpired, a major follow up to the World Summit is scheduled for 10-14 May 2010 in Geneva. Both governmental and nongovernmental sectors are vitally involved. While such efforts are transpiring on a global scale, each of us could take the elements and adapt them to our own venues in order to prepare our workforce for the information society.

UNESCO and the Global Assemblies on Education

As we gather in Romania today we understand that our field of study and practice is worldwide. Recognizing the importance of our field to society-at-large, UNESCO (United Nations Educational, Scientific, and Cultural Organization) has sponsored six World Assemblies on Adult Education and Learning approximately every 12 years since 1949, the most recent held in Belem, Brazil during December 2009. This past year the Education Sector of UNESCO, mindful of the accelerating rate of change, and the importance of the world's challenges for which learning and education can make a difference, orchestrated four world education conferences in succession. Repeatedly recognized was the world of work as an important source of learning, emphasizing that "an innovative society prepares its people not only to embrace and adapt to change but also to manage and influence it" [UNESCO Education Sector, 2008, p. 8]. Recognized also was the current "context of rapid technological change" and the need to "adapt to the requirements of knowledge societies" (p. 7). The conferences, in order of their occurrence were the 48th International Conference on Education "Inclusive Education: The way of the future (2008, November); World Conference on Education for Sustainable Development (2009, March-April); 2nd World Conference on Higher Education "New Dynamics of Higher Education and Research for Societal Change and Development" (2009, July), and the 6th International Conference on Adult Education, known as CONFINTEA VI (2009, December). I had the privilege of serving as a delegate to the Higher Education and Adult Education assemblies. Although outside the scope of this brief paper to elaborate, the resulting communiqués of both gatherings offer guidance to us. The Belem Framework for Action from CONFINTEA VI notes that "we face structural shifts in production and labour markets, growing insecurities and anxieties in

everyday life, difficulties in achieving mutual understanding, and now a deepening world economic and financial crisis. At the same time, globalisation and the knowledge economy force us to update and adapt our skills and competences to new work environments, forms of social organisation and channels of communication," while the communiqué from the Higher Education gathering emphasized, among other matters, their social responsibility in this time of transformation. Moreover, throughout discussions the importance of connecting energies with the world of work was emphasized as were learner-centered approaches, transformative learning, critical consciousness, learning how to learn, self-management of learning, attention to marginalized groups, and related issues.

The Future of Work?

It is well recognized by now that the pace of change is accelerating, at an ever-accelerating rate as well, catalyzing authors/inventors such as Kurzweil (2005) to pronounce, in his book by that title, that the "singularity is near." The singularity refers to the melding of biology and technology in the future human, a time in which technological advances are so rapid that the concept of humankind is transformed. Increasingly, he suggests, humans will be internally equipped with technology as nanotechnology begins to live in our bodies, enhancing our life and productivity. Far fetched? When one considers that Kurzweil, among other things, invented speech recognition technology which has helped many individuals with learning disabilities enter and succeed in formal education, including the earning of graduate degrees, it is conceivable that the next step would be for technology to move from external apparatus to internally implanted enhancers. Based on Kurzweil's concept, Kunstler (2010) considers the implications for the work force of the future, explaining that "human singularity refers to the fusion of the human body with technology to achieve levels of mental acuity and physical ability that eclipse anything humans have previously known" thus representing "a singular event in human history: For the first time, people would be driven by laws other than those governing organic life" (p. 17). Such individuals, termed ESIs (Enhanced Singular Individuals) will be "defined by technological enhancements permanently installed in their bodies" (p. 18) because they could afford such enhancements, or because their parents, affording it as well, wanted the best for their offspring, or for other reasons. Kunstler engages the reader in considering what the meaning of leadership might be in the future. In a variety of ways he suggests that team building between ESIs and non ESIs will call upon deftly handled interpersonal and group dynamics to manage change. While such a scenario may seem implausible to some, one must also stay mindful of a more modest

variation, often referred to as the "bionics," explained by Fischman (2010, p. 35) "as mechanical systems that function like living organisms." Amputees are fitted with limbs that perform with uncanny accuracy to an individual's movement and work like the original limb. The author reports that "within twenty years artificial limbs could have skin that senses temperature and touch" (p. 51).

Challenges

So, when it is possible to have one's personal genome scanned, replete with gene modification and replacement, and where many forms of nanotechnology may be available to increase one's efficiency and ability to access information, how will individuals and countries respond? Will the ramifications of our responses catalyze a different kind of "digital divide" between "haves" and "have nots"?

First, it seems that we are called upon to adjust our view of the world in which we live and will live and to prepare to see things differently. Adapting to change is a key to navigating these times and also helping prepare the workforce in that regard. Equally important is an understanding that not all change is predictable. Moreover, as Talib (2007) illuminates, some of the events in history that have made the largest impact were neither expected nor predictable, a phenomenon he has called "The Black Swan," and has titled his book accordingly. Using this knowledge as a mental framework should help us better understand our role as adult educators. We may have a pivotal role to play. Whatever happened to the term "learning society," discussed as early as the 1950s by McGhee (1959)? Are those discussions still warranted? Will we continue to direct our energies to transforming an information rich society into a learning society? What will be our next steps?

As early as 1974, noted anthropologist Margaret Mead (1974) stressed that the most significant feature of the forthcoming transformation is that for the first time in history we know what is happening – that we are in a transformational period as substantial and momentous as the Copernican and Industrial Revolutions. She was convinced that as a species we have the power to shape the outcome and even recognize counter forces.

Then, in 1978, Willis Harman, then futures researcher and founder of the Center for the Study of Social Policy at Stanford University, cautioned that

If we fail to understand that …society is indeed pregnant with the new social order and mistake the creative forces for threats to our well-being, we could

respond defensively and end up with the birth process being far more disruptive than need be –and perhaps even with a miscarriage. …Right action for the caterpillar is not refusing to become a butterfly—nor is it trying to transform prematurely. (p.22)

What are we doing or could we do as a field to embrace these challenges, and what other challenges abound?

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Table 1. *Major Transformation of Humankind from Primitive to Present*

Approximate Onset of Period (# of years ago)	Transformation	Approximate Duration	Major Advances and New World View

1 Million	PRIMITIVE MAN (Animal → Human)	970,000 years	Homo Erectus – humans walk upright
			Homo Sapiens – leave a legacy of knowledge
			  Development of Language (sound to meaning)
			  Use of fire
			  Invention of stone tools
			
			ABILITY TO CHANGE AND CONTROL, RATHER THAM MERELY RESPOND AND ADAPT TO ENVIRONMENT

30,000	ARCHAIC HUMAN (Stationary → Nomad)	18,000 years	Follow natural migration of wild herds, rather than stalk single animal Development of more refined tools (e.g. harpoon, spear, etc.) ABILITY TO LEAVE THE ENVIRONMENT: EMANCIPATE ONESELF AND MIGRATE

12,000	TRIBAL VILLAGER (Nomad → Village Agriculture)	5,000 years	Agricultural Revolution
			  Domestication of plant and animal
			  Beginning of settled communities
			  From hunters and gatherers to farmers
			
			ABILITY TO COOPERATE WITH NATURE AND CYCLES: BEGINNING OF SOCIAL ORGANIZATION AND GROUP LIFE.

7,000	CIVILIZATION (Tribal → Civilized Culture)	4,000 years	Organization of the city and accompanying development of architecture, art, etc. Change from manorial (Life) to mercantile (money) economy Development of two classes: ruler and ruled End of Stone Age with the discovery of how to extract metal from ore and resulting use of metal as tools, weapons, etc. DEEMPHASIS ON BIOLOGICAL SURVIVAL AND SHIFT OF CONCERN TO SOCIAL AND CULTURAL DEVELOPMENT
3,000	AXIAL HUMAN (Outer → Inner World)	2600 years	Spiritual nature of humankind stressed; concentration on "soul" alone emphasized; other aspects of being human ignored Bodily activities repressed to reach goal of purification from animal nature Church came into prominence SHIFT TO WORLD DOMINATED BY RELIGION AND PRIMACY OF SPIRITUAL NATURE
400	MECHANICAL HUMAN (Inner → Outer)	400 years	Copernican Revolution (1500's) Industrial Revolution (1700's) Emphasis on outer world and mechanical/material/technological progress substituted for human development Change from village industry to centralized industry SHIFT TO WORLD DIRECTED PRIMARILY BY INTELLIGENCE AND THE SCIENTIFIC METHOD
Present	NEW TRANSFORMATION IN PROCESS (Synthesis of Inner and Outer)		Emphasis on integrated development of sensory (outer) as well as non-sensory (inner) aspects of humankind Integration and synthesis of Eastern and Western world views and definitions of reality Shifting paradigm (scientific/religious view of world) SHIFT FROM INDUSTRIAL TO LEARNING SOCIETY AND PLANETARY/WORLD CULTURE

Biological Evolution (brackets the first two periods)
Cultural Evolution (brackets the middle periods)
Evolution of Consciousness (brackets the final period)

Source: Boucouvalas (1980) based on Mumford (1956)