

Handbook of Research on Overcoming Digital Divides: Constructing an Equitable and Competitive Information Society

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Information Literacy and the Digital Divide: Challenging e-Exclusion in the Global South

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ABSTRACT

With the increasing spread of information and communications technologies (ICTs) globally, there is heightened debate about the continuing disparities of access and usage. The dialogue has proceeded in many respects oblivious of the centrality of information literacies in capacity building measures to redress the digital divide. This chapter examines both the concepts of the digital divide and information literacies and regards them as highly compatible in their application to the global south following a detailed analysis of issues such as orality and literacy, globalization from below and effective access to technology networks. The chapter concludes with a range of recommendations relating to reforms in strategic thinking and policy planning. The call for heightened emphasis on education including information literacies forms the centerpiece of an analysis grounded in both theory and empirical research.

INTRODUCTION

Discourses on the digital divide have often represented the issue as a matter mainly of access to physical resources such as computers, telephony and other networked ICT resources. While these technical appurtenances remain important to realizing greater global information equity, there is insufficient attention being paid to the urgency of information literacy and the development of the

inherent information seeking capacities of humans, as a key component to any strategy to redress the digital divide.

As Horton (2007) points out, information literacy is about developing a wide range of cognitive skills: “understanding technologies is not enough” (p.5). Similarly The American Association of College and Research Libraries (ACRL), notes that information literacy “is an intellectual framework for understanding, finding, evaluating, and using information—activities which may be accomplished in part by fluency with information technology, in

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part by sound investigative methods, but most important, through critical discernment and reasoning. Information literacy initiates, sustains, and extends lifelong learning through abilities which may use technologies but are ultimately independent of them.” (ACRL, 2000 p.3). While this definition is a useful one, its failure to reference people’s information needs stands out.

Among the foundation competences required to seek out, interpret and make meaningful use of information, based on one’s needs, are the traditional literacy skills of reading, writing and computation using a recognized system of symbols. From this point of departure, the chapter will explore the definitions and meanings ascribed to what we shall call the ‘multiple literacies’ required to function effectively in a knowledge-based society.

Many traditional societies already have forms of literacy and knowledge sharing that are often unrecognized and undervalued. Oral traditions of learning and knowing characterize many societies not equipped with the conventional tools of reading and writing. Knowledge is acquired, organized, stored and effectively communicated in many cultural and linguistic forms and through developed systems of non-verbal communication. Some of these competences may be gained from an early age or may be acquired later in life. One form of literacy may be used to enhance, teach and reinforce other necessary forms of literacy in the on-going cognitive process of learning, doing, growing and human development.

When applied to the concept of the digital divide, this idea of multiple literacies proves to be a potent construct in understanding how modestly endowed societies in terms of information communication technologies, may build on their own knowledge systems to increase information flow and operational effectiveness. It also helps us to understand how from their own knowledge base, these societies can more securely adopt and adapt new forms of knowledge, using new literacies and new technologies of information gathering.

We will delineate the varied forms of literacy

and multiple representations of the digital divide already evident, and explore their relationship to notions of globalization. We argue in favour of a new multi-dimensional approach to human literacy that foregrounds information literacy as one way of beginning to tackle the wider, more long standing and pervasive social and economic divides that now increasingly reflect themselves in disparities of access to information. While these disparities are more clearly demonstrable within the ex-colonial countries of the South, these divides also pervade substantial marginalized segments of the industrialized north, such as reservations, trailer parks, inner city housing estates, deep rural villages and poor ethnic communities – places and spaces where concepts of economic disparity, digital divides and the need for information literacy and ‘multiple literacies’ will be just as applicable as in the global South.

The focus of the chapter is on deepening theoretical perspectives and sharing alternative understandings of literacy and the digital divide. It explores new approaches to redressing the global disparity, which is often as much economic and class based as it is linked to physical access to information. While encouraging a growth in technical access to ICTs, we argue that a solid foundation of technology assisted basic education is a key prerequisite to advanced and effective use of ICTs. The challenge of bridging the digital divide emerges as a far more nuanced and complex process involving greater emphasis on social context, multiple literacies and, yes, effective technology access.

While the analysis seeks to challenge conventional technology-driven approaches and to question linear notions of learning it also presents a frame of reference that offers new research-based insights into the experiences, geography, social and cultural characteristics of people from within the South.

ICTs, E-EXCLUSION AND LITERACY

The recognition that the so-called 'digital divide' extends well beyond the physical inaccessibility to ICTs is crucial to finding a solution. The National Telecommunications and Information Association (NTIA), in its influential study entitled 'Falling Through the Net: A Survey of the 'Have Nots' in Urban and Rural America' linked inequalities in information and communication technologies (ICTs) to development gaps. Although not using the term 'digital divide' the NTIA study suggested that the physical inaccessibility to ICTs ran along racial, gender, demographic, educational and socio-economic lines.

This study was by no means the first to call attention to this deficiency in techno-access and information flows. While it may be one of the first major reports to reflect these problems within the industrialized United States, other global studies have also highlighted the gaping disparity in information access and linked the divide to deeper and longer standing social and economic inequities. Unesco's 1980 McBride Report, entitled 'Many Voices: One World' highlighted information flow challenges in developing countries emanating from the editorial content and technical dominance of the then established Northern international news agencies over the circulation of news around the world. Less than five years later, in 1984, the ITU published the Maitland Report, dubbed 'The Missing Link', in which the gulf in telecommunications resources and technology flows between the developed and the developing countries was featured. Today, we are concerned about more than a missing technical link, but how a more holistic approach might be taken to mitigate the effects of long-standing global disparities.

Even against this background, the NTIA's 1995 Study was constructed mainly as a dichotomous phenomenon, that is, highlighting 'information haves' and 'information have nots'. While providing a stark and useful contrast of differing condi-

tions and lifestyles within the United States, the report did not sufficiently acknowledge that people from all social and economic backgrounds may gather and store information differently, related to their means and the nature of their needs. This is integral to the argument being advanced here about the need to acknowledge varied forms of literacies, including local and indigenous means of information processing, traditional knowledge systems and indigenous learning methods, beyond the conventional.

The Information Technology Access For Everyone (ITAFE) programme of the World Economic Forum operates implicitly on the same dichotomous premise as the NTIA's Report. The range of their programmes appears to emphasize physical access to ICTs as a desired end, rather than as a means towards multifaceted human empowerment. Programmes like the ITAFE generally measure the degree of digital inclusion or exclusion using variables such as the ratio of inhabitants to phone lines, the number of Internet users of Internet Service Providers (ISPs), and the number of mobile subscribers.

Ongoing research over the years has deepened perspectives on the digital divide to cover some aspects that were being overlooked in earlier research, policy formulation and implementation. The Organization for Economic Cooperation and Development (OECD), OECD, for example has offered a useful definition of the divide as "the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access ICT and to their use of the Internet for wide variety of activities." (2001, p.4). There is an important recognition here that the divide encompasses individuals, communities and businesses and that stages of development are relevant to the concept. In its historical and emerging forms, the divide reflects itself in gender disparities, in language use as well as in geographical, social and technological imbalances.

The Internet provides one representation of this global disparity across many social and demographic indicators. We may consider here just the global inequity in Internet use as a proxy for other development gaps. According to the Internet World Statistics Database (2008), Africa, with the second largest population after Asia, recorded a 5.3% Internet penetration rate compared to just over 73% in North America. While the African continent registered the second fastest growth rate in Internet usage globally between the year 2000 and 2008, the challenges of being typecast as lacking in conventional literacy and with acute household income constraints and national financial challenges, the pace of growth may yet be slowed.

The highest Internet penetration rate was indeed in North America, which clocked a 73.6% penetration rate. However, that region, consisting of mainly the United States and Canada, not surprisingly, showed the slowest rate of growth in Internet usage. The region of Oceania/Australia had the second highest penetration rate at 59.5%. Asia, with by far the largest population globally, had a 15.3% Internet penetration, but enjoyed the largest percentage of Internet Users at 39%. The fastest rate of usage growth is taking place in the Middle East, which has a relatively low 21.3% penetration rate. In Latin America/Caribbean, the penetration rate was recorded at 24.1%, but with the third fastest growth rate in usage globally. Europe had a penetration rate of 48.1%, with that region having the second slowest growth rate globally. The North-South divide is quite evident in these statistics. However, what they do not disclose are the deeper economic cleavages as well as the internal access and usage divides within regions and countries and the linguistic, cultural and gender divides that exist globally. The extent of exclusion of people with varied disabilities is also not reflected in these statistics, which while expected to shift moderately over the next few years, will likely retain the fundamental rankings for the foreseeable future.

Norris (2001) believes that the digital divide has three distinct aspects: global, social and democratic divides. By global divide she refers to differential access to Internet between nations; social divide refers to the existence of information rich and information poor; and, the democratic divide refers to differential access to ICT applications in governance, and issues in the public domain. While we appreciate Norris' extension of the concept, we believe that the notion of what constitutes access to ICTs must be further disaggregated, as a vital prerequisite for a more nuanced and holistic understanding of the reality of the digital divide.

Whereas physical access to ICT infrastructure is a vital prerequisite for individuals to participate in the networked society, one's success is contingent on a range of other forms of access. From this vantage point, Wilson (2006) makes a useful distinction between 'formal' and 'effective' access to ICTs. He argues that installing a cable in the vicinity of a school or community is formal access, while making sure that the connection results in a linked desktop for trained prospective users would go some way in making this effective access. In addition, effective access could also be measured by the extent to which the community is represented in the related policy process (Wilson, 2006, p.304).

Wilson's outline of eight types of engagement considered conducive to effective access is worth reflecting on here:

- Physical access, refers to individual's physical proximity to and access to ICT equipment
- Financial access, refers to individual's ability to pay for ICT equipment and services
- Cognitive access questions a potential consumer's mental capacity to identify information needs, find, use, evaluate and store that information.
- Design access refers to 'human-machine interface'. This questions whether ICT

hardware and software are designed to meet the needs of a given population.

- Content access underscores how meaningless physical access to ICTs could be if all content on these platforms have no significance or relationship to their culture or lived reality. It also questions the ability of individuals to develop content of their own.
- Production access speaks to the concern that “the vaunted information superhighway runs in one direction only, from North to South. There is much less content produced by the South for the South, and much less that flows from South to North”. (p.302)
- Institutional access refers to “the variety of organizational forms and regulations that have emerged around world as contending groups struggle to structure access to digital content in particular ways”. (p.302).
- Political access refers to the ability of marginalized people to gain access to the political decision making processes in their countries in order to contribute ideas on what policies better suit their communities. (p.303)

Many elements of Wilson’s extensive narrative of ‘effective access’ are consistent with our own earlier call for greater global inclusiveness, local political control and social equity with regard to digital information flows. These measures were seen as being among the most meaningful ways to redress current and historical divides:

The South needs to adopt the mental attitude and practical approaches which emphasize up-loading our own content under controlled conditions, to national, regional and global networks such as the Internet. Both in the areas of audio-visual media and text-based content services, developing countries must seek to create and sustain a counter-flow of information, as an alternative to

the vast volumes of information flooding in from the North. The process should also involve enhancing existing levels of information exchanges in an effort to foster more education and development, using the accumulated knowledge and appropriate technologies of the historically oppressed societies. (Dunn 2001, pp 67-68)

The idea embodied here and in Wilson’s analysis is that it’s not any type of access or any type or volume of content that matters, but that attention should also be given to how access is achieved and to the quality of content that is made available. The paper therefore makes the argument that societies with even modest technical ICT deployment can leverage the quality of access and content to make meaningful economic and social contributions. The perspective on why this is important is reflected in Haddad’s definition of the digital divide, where he suggests that “[N]arrowing the divide - publishing a newspaper in every village, placing a radio, and wiring every building to the Internet - does not automatically solve the problem. The most serious divide is in the extent and quality of human knowledge and learning. It is not digital, it is educational.” (Haddad, 2001). Wilson’s views on cognitive access, production access, content access and design access could also be situated in Haddad’s overall frame of analysis. It is from this vantage point that the paper advocates a process of south-south and south-north networking using our concept of ‘globalization from below’ (Dunn 2001, p.67). Underpinning this approach is the need for a range of literacies to redress the digital exclusion of the peripheries in the South and the North.

We agree with Wilson that getting meaningful physical access to ICTs by the marginalised is not the function of technologists or ICT practitioners, but lies to a large extent in the domain of economic, social and educational structures. For instance, the degree of foreign direct investments or government capital injection into the telecommunications sector will largely determine how

many people get access to telecommunications services. Equally, tariffs levied on ICT imports will make the cost of such ICT systems higher as importers must retrieve their costs plus a profit markup. We argue that greater emphasis on public policy-making and technology education rather than simple technology transfers will yield more widespread benefits. In particular policies that seek to revise older, monolithic conceptions of literacy into more nuanced and multifarious ideas of cognition and social learning are more likely to succeed as one key building block in re-thinking remedies to the digital divide.

DE-CONSTRUCTING LITERACIES

Historically, literacy connoted the basic ability to produce and understand written texts at a basic level of proficiency. Literacy was seen as a matter of enabling individuals to acquire a set of technical skills namely, reading, writing and calculating. This view was supported by methods of promoting literacy as a single model approach, where a general set of techniques were seen to be easily applicable and transferable irrespective of content, method of distribution and cultural context.

The Universalist claim of literacy or autonomous literacy is “seen as a general, uniform set of techniques and uses of language, with identifiable stages and clear consequences for culture and cognition” (Collins, 1995, p.75). The Universalist approach was primarily promoted as the method by which individuals could acquire these skills and also influenced the conception of mass literacy campaigns. Collins further points out that this method tends “to assume a clear cumulative distinction between literacy and orality and, as formulated initially, that the literacy of the West was somehow exceptional to all other literacies” (p. 76).

Like other critics of the Universalist approach, we maintain that the single model approach is too limited and that literacy is not autonomous

or a set of discrete technical and objective skills that can be applied across all contexts. Instead, literacy is determined by the cultural, political, and historical contexts of the community in which it is used, drawing on academic disciplines, as reflected in the more diverse approach of cultural anthropology and linguistic anthropology. The central assumption that literacy can be treated as a “thing in itself” is challenged by more realistic arguments that there are “diverse, historically and culturally viable practices with texts”

This concern of multiple literacies is focused on “the diversity and social embeddedness of those ways with text we call literacy, emphasizing the ways as much as the texts” (Collins, 1995 pp. 75-76). It is associated with comparative anthropological criticism of claims made for a unitary or autonomous literacy, questioning literacy’s causal consequences in social development or cognitive progress with detailed ethnographic studies of inscription and discourse. This approach undermined the notion of separable domains of orality and literacy, with revisionist historical scholarship re-periodizing and reframing the debate about literacy and social development in the West. (See Collins, 1995, p. 76)

The ongoing debate has influenced internationally agreed-upon definitions of literacy. In 1958, UNESCO’s definition indicated that “a literate person is one who can with understanding, both read and write a short simple statement on his or her everyday life” (UNESCO 2004). This often quoted definition was revised by 1970 as a result of attention being given “to the ways in which literacy is linked with socio-economic development” (UNESCO 2004, p. 9). The concept of “functional literacy” was conceived where literacy was valued as a technical solution to socio-economic problems.

A functionally literate person is one who can engage in all those activities in which literacy is required for the effective functioning of his or her group and community and also for enabling him or her to continue to use reading, writing

and calculation for his or her own purposes and the community's development (UNESCO 2004, p. 9).

But even this revision by UNESCO was not holistic enough. It did not capture the multiple contextual life skills that we have argued are a crucial part of the competences qualifying a person as being literate. UNESCO later further developed its conceptual approach in this direction. In the 1980s and 1990s, the UN agency acknowledged literacy as being also a technical skill, seeing literacy as a "set of practices defined by social relations and cultural process - a view exploring the range of uses of literacy in the entire spectrum of daily life from the exercise of civil and political rights through matters of work, commerce and childcare to self-instruction, spiritual enlightenment and even recreation." (UNESCO 2004, p.10)

In 2003, a proposed operational definition was further formulated which appropriately aimed to include the several different dimensions of literacy.

Literacy is the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society. (UNESCO 2004, p.13)

As an operational corollary to this definition it was argued that the concept now needed to be "centered on the life of the individual person" (p.13). In this regard, UNESCO acknowledged that "more reflection should be given to incorporating into it the various circumstances in which individual learners live their lives." (UNESCO, 2004, p.13).

With these re-conceptualizations, the international community no longer saw literacy as a "stand alone" skill and embraced the evolving plural concepts of literacy as a "key element of

life long learning in its lived context". (UNESCO, 2004, p.10)

The plurality of literacy refers to the many ways in which literacy is employed and the many things with which it is associated in a community or society and throughout the life of an individual. People acquire and apply literacy for different purposes in different situations, all of which are shaped by culture, history, language, religion and socio-economic conditions. (UNESCO 2004, p.13)

At the same time, however, it must be acknowledged that in view of actual practices, not all functional approaches to literacy have failed, nor have all mass literacy campaigns proceeded on the uni-dimensional basis. A number of countries within the global South implemented politically motivated literacy campaigns that produced remarkable results precisely because they privileged local and national contexts for learning and in some instances included work related and technical applications in delivery strategies that preceded the information revolution. Many of these campaigns helped transform rural and national life in countries such as China, Cuba, Nicaragua, the United Republic of Tanzania and Viet Nam in the South and similarly within the former USSR in the global North. The important role of political will and social mobilization in literacy efforts also influenced traditional literacy campaigns in Ecuador, India and South Africa. These countries have "achieved remarkable results in meeting the learning needs of different groups, paving the way for more advanced literacy practices and continuous learning opportunities." (UNESCO, 2004, p.10).

The contemporary application of the plural notion of literacy will be useful for orienting the discussion on information literacy to include critical issues such as cultural and social contexts, access and empowerment.

One important issue implicit in the conduct of mass literacy campaigns globally is the profound

question of why mass literacy programmes became necessary in the first place. It would seem that this was reflective of a breakdown in the established educational systems in these and many other countries. Conventional educational delivery through schools, churches or home tuition facilities were seemingly not within reach of the affected population groups either physically, culturally, psychologically or financially. Their approach to education may also have been fundamentally flawed. It is to this possible deficiency that Paulo Friere addressed his potent critique of the conventional educational establishment:

Education thus becomes an act of depositing, in which the students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiqués and makes deposits which the students patiently receive, memorize, and repeat. This is the “banking” concept of education, in which the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits. They do, it is true, have the opportunity to become collectors or cataloguers of the things they store. But in the last analysis, it is the people themselves who are filed away through the lack of creativity, transformation, and knowledge in this (at best) misguided system... (Friere, 1993)

These are the very complexities that the new multi-dimensional and pluralistic approaches to literacy seek to address or redress. The delivery of training in the multiple literacies required for the current age must include some emphasis on the contextual deployment of information literacy.

Information literacy is an important part of the toolkit in forging greater effective access to ICTs. But it is to be seen as one in a range of literacies often available within particular locales. Collins’ useful distinction between the Universalist and situated accounts of literacy is to be valued. His suggestion that the Universalist perspective on

literacy views it as a “uniform set of technologies and users of language, with identifiable stages and clear consequences for culture and cognition” reflects aspects of Friere’s critique. Alternatively, the relativist’s account is seen as “diverse, historically and culturally variable practices with texts.” (Collins, 1995 p.75). The Universalist perspective views literacy as a “technology of the intellect” in line with Goody and Watt’s main proposition that literacy helps to draw the distinction between myth and history, opinion and truth and oral culture and documented historiography. Collins further suggests that critics of this hypothesis “have questioned the central assumption that literacy can be treated as a thing-in-itself, as an autonomous technology” (1995, p.78). Instead, these critics who argue for a more situated or relativistic viewpoint of culture, have asked whether “literacy is not essentially embedded; its nature and meaning shaped by, rather than determinate of, broad cultural-historical frameworks and specific cultural practices.” (Collins, 1995, p.78).

Dunn and Brown (2007), in agreeing with this situated viewpoint of information literacies, reaffirmed their view that societies with even a moderate degree of technological development can leverage their own situated literacies to maximize the benefits of technologies. Their argument is critical to the discussion on strategies for closing the digital divide:

ICT does not an information literate society make, but the technologies are enablers of multi-phase plural literacies, lifelong learning and the empowerment process. This is so because they give the user greater control over the rate at which information is consumed and understood, the time when such information is used and the power to create content. As we have seen the core principle of empowerment relies on achieving the full potential of an individual, community, and country, and in an information economy ICTs can be leveraged to achieve such an end . (Dunn and Brown, 2007, p.21).

It is the more varied concepts of literacy and learning that may be most applicable to the cultural and economic contexts of the global South. It is these approaches that may also best contribute to challenging some of the long embedded dimensions of the historical socio-economic disparities now reflected in the current notions of the global digital divide. To re-phrase Haddad, it is not simply a technology-based digital divide but more precisely an educational and social divide, created, I might add, by historical and economic disparities and contemporary gaps in vision, resources and policy.

INFORMATION AS COMMODITY

Underpinning our analysis of both conceptual and resource deficiencies is the recognition of increased importance being placed on information in all sectors of the global economy. Negroponte has argued that the ability to digitize information signals a new global order, and may be a foundation layer supporting the growing services dominated global economy. Separate and apart from trade liberalization, the growth of services rooted in information or knowledge based sectors is a distinct characteristic of globalization. For instance, an OECD study in 2007, indicated that “the main drive is for countries to move up the value chain and become more specialised in knowledge-intensive, high value-added activities. Specialisation in more traditional cost-based industries and activities is no longer a viable option for most developed countries.” (OECD, 2007, p 19).

Moore as cited by Rowlands also anticipates that this new economic orientation can be used as a step towards more integrated development among global south nations:

In the less developed and newly-industrialised countries an information society is seen, not as a means of hanging on to an existing position, but as a path towards future prosperity through

accelerated economic growth. This accelerated growth is, however, also seen as the key to solving long term socio-economic problems, such as rural stagnation, urban blight, disparities in income, poor education and inefficient public services. (Moore, 1992. pg.92, as cited in Rowlands (Ed), 1997)

Against this backdrop, the urgency of redressing the existing knowledge divides becomes even more critical. Free market mechanisms and the lowering of computer costs suggest that overtime even low income users will be able to gain access to the digital domain through transitional and integrated technologies such as mobile phones as a result of market competition and industry growth. An example of this is demonstrated in Jamaica. The diffusion in the Jamaican market of Motorola’s high-end mobile phone, called the ‘Razr’, caused a dramatic ‘Razr phenomenon’ in about 2006. Its Internet enabled capacity, video and voice recording functionalities and attractive design made it a highly desired cellular phone among all social groupings in the society. Acquiring this cell phone would have cost a buyer close to US\$384 in 2006.¹ In 2008 however, this cell phone can be acquired at around US\$138 or just over a third of the original price two years earlier. The point is that the market will provide a certain narrowing of the cost gap for certain technologies thereby reducing one component of the divide. But the question is should public policy be premised entirely on the vagaries of the market.

For Robert McChesney, “the very essence of the technological revolution is the radical development in digital communication and computing”. However, while these changes proceed a pace, he warns that the social implications of a purely market oriented ideological underpinning should be approached cautiously:

For capitalism’s cheerleaders, like Thomas Friedman of the `New York Times, all of this suggests that the human race is entering a new Golden

Age. All people need to do is sit back, shut up, and shop, and let markets and technologies work their magical wonders. ... [T]hese claims should be regarded with the utmost skepticism. (McChesney, 2001 p.1)

Alongside demonstrable market-driven price reductions, there is need then, for more strategic public policy interventions that can confer a wider range of benefits, including information literacy, content production training and capacity building to achieve more meaningful change. Understanding ones information needs, finding such information, and using and evaluating that information are now critical skills necessary for empowering marginalized people to be active participants in the information society.

SOURCES OF THE DIGITAL DIVIDE

Arising from our foregoing analysis is the need to broaden the theoretical lenses through which the digital divide is viewed, especially as it relates to information policy. Rowlands (1997) citing Weingarten defines information policy as “the set of all public laws, regulations, and policies that encourage, discourage, or regulate the creation, use, storage and communication of information.” (p.29). It is not often foreseen that public policy formulation and implementation processes addressing information policy are sources which can give rise to the emergence of both digital divides and social divides. According to Rowlands:

[I]nformation supply, transfer and use take place within an environment which is in a constant flux, shaped by the often unpredictable interaction of commercial, economic, technological, social and demographic forces...public policy has an influence, directly or indirectly, on each of these sets of forces; hence, even such broadly horizontal policies as those relating to education, open government or the funding of civil science may

have quite dramatic implications for information availability and use. (Rowlands 1997, p.29)

The danger in the information policy-making process that policy analysts must guard against is the uncritical importation of prescriptive policies from the developed country context, into the developing country context. This is a danger which economists such as Girvan and Beckford have advised against. In a study on technology policies in small developing economies, Girvan warned that “the importation of developed country technology, especially in unmodified form, does not necessarily lead to self sustaining development and can exacerbate the social, economic and environmental problems of poor countries rather than attenuate them.” (As cited in Dunn, 1995 p. 21). Clearly, if the public policies and technologies do not take account of the domestic situation in terms of literacy levels, poverty distributions, per capita income and other socioeconomic variables, then such policies are likely to fail to achieve their stated objectives.

If public policy can be seen as the balance of power between competing interests, then resultant policy is often reflective of the superior bargaining power of particular stakeholders. Wilson adds credence to the notion that while technological diffusion may be achieved with relative ease, the negotiated process of social and institutional changes necessary to facilitate the effective is far more complex. According to Wilson (2006), “it is virtually impossible for the technical, and commercial, and institutional gears to mesh and turn efficiently unless the politics is right. If the politics is wrong, especially in developing countries, then the other three elements will not function.” He argues further that “since institutions are much weaker in poorer countries, a revolution that is mainly institutional and not technical is not easily achievable.” (pp.12-13).

The idea is that while it is easy to grant people of the developing south some amount of access to aid related technical resources, this may often

not translate into meaningful sustained economic growth, development and empowerment. The inhibiting factors include institutional capacity, strategic vision and the lack of political will among many global south leaders. While the situation will vary from country to country, our perspective is that overall, institutional and political issues play a significant role in redressing or exacerbating e-Exclusion and the known socio-economic divides.

Within the nascent political and institutional environments in most developing countries, the issue of formal or functional literacies in information policy must be examined to determine its influence in perpetuating the widening digital divides.

To address this issue, recall Weingarten's definition of information policy, which suggests that the public policy outcome of information policies may be unequally influenced by a ruling, governing elite. These governing elites, who are themselves steeped in the culture of formal and functional literacies, are unsympathetic to the range of other literacies that people might possess. They insist on pursuing traditional public policies on literacy imported from the developed country context, which do not fit into the cultural context of the global south. This unequal power relation in the policy making process may well be an additional source of digital exclusion and demand for change. Friere reflects on the same social contradictions in educational terms:

Problem-posing education, as a humanist and liberating praxis, posits as fundamental that the people subjected to domination must fight for their emancipation. To that end, it enables teachers and students to become Subjects of the educational process by overcoming authoritarianism and an alienating intellectualism; it also enables people to overcome their false perception of reality. (Friere, 1993)

There is a perceived unwillingness on the part of certain power elites to acknowledge that

oral cultures and other forms of literacies, if appropriately honed pedagogically, can be potent constructs for people to gain more functional competences including information literacy, in a manner consistent with their cultural and social environments.

We will discuss this point by looking at oral culture among lower income peoples and the paucity of public policies to harness that culture as an educational tool, economic resource and an avenue for redressing digital exclusion.

LITERACY, ORALITY AND PUBLIC POLICY

As previously mentioned power elites in the global south tend to have an unequal amount of power in information policy formulation and implementation. Their own experiences, education and socialization, as power elites inform their approach to policy making and the items they advocate on the agenda. The idea of orality and literacy has not featured highly in policy debates, because it seems that dominant power elites are mostly in favour of formal literacy paradigms. Not much work or thought have been done on whether information technology could be leveraged to bring oral literates into more mainstream formal literacies. What does the orality versus literacy debate offer in better understanding this possibility?

The position of critics against orality maybe summed up as: "spoken words are always modifications of a total situation which is more than verbal. They never occur alone, in a context simply of words. Yet words are alone in a text." (Ong, 2002). The idea is that the spoken word is ephemeral, without memory, liable to misinterpretation and without context. Whereas, literacy is perceived as synonymous with text, is presented as long lasting and a basic prerequisite for participation in mainstream society.

But, we are suggesting in line with Imbo (2002), that a false distinction is often made between

individual and collective memories. For instance many of the esteemed classical texts such as the Homeric corpus, including the Iliad and Odyssey grew out of an oral culture, in which stories were recounted accurately from memory over many successive generations. But, is there a real dichotomy between texts and orality as critics of the oral culture are suggesting? We may begin to perceive an answer through Imbo's definition of text as "... any bearer of signification. It is a consciously designed system of symbols characterized by the internal inconsistency of those symbols and specific conventions for explaining and assigning meanings." (p.50)

At the core of being information literate (or having multiple literacies) is the potential to understand the form and essence of any systems of symbols transmitted through a medium, whether through oral discourses or written [read 'texts']. The understanding of a signification is not uniform throughout global societies, but each interpretation is contextual. Oral discourses, seen as 'text', should not be compared to written discourses and then adjudged a lower or inferior form of literacy. Instead we are arguing that orality and folk forms of knowledge can be a potent construct for the understanding of numerous other discourses, or information literacies where the public policy framework exists.

MULTIPLE LITERACIES AND THE DIGITAL DIVIDE

The intention here is to demonstrate the conceptual link between the varied forms of literacy and how they can be applied to redress the digital divide. The idea of multiple literacies which includes oral cultures can begin to point a lead to creative ways to redress the digital divide among marginalized people. A caveat is necessary: Our argument does not seek to establish a monocausal and unidirectional relationship between literacies and specifically the technological conception of the

digital divide. Instead, we argue that the technological dimension of the divide has been unduly emphasized. The other ways, in which the digital divide is manifested, specifically cognitive, content and effective inaccessibility will be the points of emphasis in our discussion. It is on these terms that one fully understands how a plurality of literacies can help marginalized people to be efficient in the information domain within the context of a modestly endowed digital architecture.

Traditional approaches to learning and teaching, perhaps, number highly among the core factors perpetuating the digital divide, to the extent that the divide is conceptualized in cognitive, content and effective access terms. This observation is in keeping with the preponderance of rote learning approaches in the global south and what Friere called 'making deposits of information' into students

Jamaica provides a useful context for this analysis. According to Carlson and Quello (2002), "the educational system is historically stratified and remains so inspite of policy interventions in education (grade 6), students are tracked into different types of secondary schools of clearly different levels of quality. Children of poor families in the rural areas and the inner cities receive a low quality education that the high enrollment rates mask. It is here that the problem of school dropout in the later years of secondary education begins, with poor quality teaching and poor attendance. This particularly affects boys." The study paints a picture of a system in trouble. Although there is high enrollment up to Grade 9, there is a sharp fall off thereafter, reflecting a bottleneck in space availability, but also in levels of attainment of literacy and numeracy by students across the system, and particularly those in poor rural and inner city communities.

Carlson and Quello (2002) further stated that:

By far the most serious problem is students' reading abilities. Deficient reading starts in the lower

primary grades and continues to build, year-on-year. Poor reading abilities are concentrated among boys. By the time students reach grade 6, 30 percent of students read below their grade level. By grade 9 a huge divide has occurred—large numbers of students, especially boys, cannot read or write, some are functionally illiterate. Because of their reading deficiency, they cannot learn the content of various subjects. This is the tremendous paradox of Jamaican education that standard statistics do not reveal—high enrollment rates through lower secondary but low learning, interest and participation.

In the report, Hyacinth Evans, A Professor of Teacher Education is quoted as saying, "...boys and girls enter grade 1 in equal numbers and with roughly the same kinds of experiences and skills, though we know nothing about their attitudes to school work at this age. ...By the time they reached Grade 5 and 6, major distinctions were detectable in their attitude to and interest in work, the quality of work which they produced and in the academic performance...". The situation has not changed dramatically since this assessment and has been confirmed by subsequent studies and analyses. According to the Report of the Task Force on Educational Reform submitted in 2004, about 30 per cent of primary school leavers were illiterate and "only about 20 per cent of secondary graduates had the requisite qualification for meaningful employment and/or entry to post-secondary programmes".

The implication is that with a labor force that is substantially illiterate, the country has a very slim chance of attracting technology based foreign direct investments. These industries are very reliant on the possibility of value added through the cognitive abilities employees in the host country. We are contending that the issue of content in curriculum is not the major issue – Laws of Indices in India, remain Laws of Indices in Jamaica - it is pedagogy and instructional design methods that are critical lynchpins to realizing better aca-

demie results from students and in the long term attracting value based technological investments. Certainly, this is an indirect and novel approach to redressing the digital divide.

But what about literacies? Where do they fall in the scheme of things? We are contending that these notions should be the underlying mechanisms motivating a new philosophy of educational approach in developing countries: Jamaica has started to engage this approach. The Broadcasting Commission of Jamaica has long called for instituting information literacies, including media literacy, in teacher education and the school curriculum. This is finally being undertaken through a partnership between the Broadcasting Commission and the Joint Board of Teacher Education. This approach would train and enable teachers to guide students in processing media output and in how to use technologies and programmes that are more appropriate to particular age groups.

It is common knowledge that new media platforms like SecondLife, instant messaging services such as MSN messenger and networking locations which number over 150 sites on the Internet, are mainly dominated by the adolescent to young adult demographic grouping. Among the sites under reference are MySpace, Flixter, Netlog, Elftown, Goodread, College Tonight, Friendster, Photolog, Facebook, YouTube, Hi5, MyChurch, and many others, most counting their subscribers in the tens of million users globally. See: http://en.wikipedia.org/wiki/List_of_social_networking_websites.

These user-created and youth populated sites are supported by Web 2.0, a technology which as we have noted, puts subscribers in control of content creation and global distribution. This is what motivates the high school age grouping and younger cohorts, and access persists well into adulthood. Gee (2004) has called these "affinity spaces" operating in a participatory technological culture. These spaces are really informal learning spaces, where peers relate to one another on a casual basis and new ideas are allowed to be shared freely.

Jenkins (2006) holds that affinity spaces are fertile grounds for learning as they are “sustained by common endeavors that bridge differences in age, class, race, gender, and educational level, and because people can participate in various ways according their skills and interests, because they depend on peer-to-peer teaching with each participant constantly motivated to acquire new knowledge or refine their existing skills, and because they allow each participant to feel like an expert while tapping the expertise of others.”

He further maintains that affinity spaces are distinct from formal educational systems in several ways. While formal education is often static and conservative, the informal learning within popular sites and culture is frequently experimental, dynamic and innovative. The structures that sustain informal learning are seen as more provisional, while those supporting formal education are more institutional.

SPATIO-TEMPORALITY, TRANSITIONAL TECHNOLOGIES AND THE GREAT DIVIDES

Reference has already been made to the argument here that the digital divide closely approximates and follows other more known and established social and socio-economic inequalities. For example, traditionally depressed and marginalized rural communities are expected to have a similarly much lower rate of ICT diffusion than certain more well endowed more upscale or wealthy communities. In this section of the chapter, we employ a spatio-temporal analysis to demonstrate how information literacy empowers low-income citizens to use transitional technologies to help bridge not just technological divides, but also to begin to tackle broader social and economic divides.

In a national research study conducted in 2008, we found that low-income Jamaicans were using mostly inexpensive transitional technologies

(mainly the mobile phone) to circumnavigate the challenges of the more entrenched social and economic divides in a spatiotemporal way (Dunn, 2008). These empirical data enable us to argue that the power of such transitional technologies, buttressed by a range of acquired information literacy skills, make for a hopeful construct to help redress exclusion among low income persons in the global south.

The concept of space and place is critical to understanding how transitional technologies can bridge the digital divide and mitigate other social and economic divides among low income citizens. Brown and Perry (2002, p.50) suggest that “... to call something a ‘place’, brings attention to its located, embodied, personal, local, human nature. And to call something ‘space’ is to bring attention to its abstract, objective, global, general, inhuman qualities.” Brown and Perry also argue that there can be objective localized conceptions of space. For instance, a user of a communication technology is at once in two spaces simultaneously: the physical space where each user is located and the metaphysical air time space, which both users occupy. This point is demonstrated by Schegloff as cited in Rettie (2005); Schegloff reports on a cell phone conversation he observes: “‘Do you mind!?’ This is a private conversation!’ Schegloff writes, “she [phone user] is almost literally in two places at the same time... The other place [space] that she is, is ‘on the telephone’. And she may well understand that to be a private place [space]... (she) is not in the same ‘there’ as the rest of us are; there are two ‘theres’ there”.

Schegloff’s observation of the simultaneous existence of the young lady in two different places and space seems to fit into the Bauman’s notion of “liquid modernity”. A core idea of modernism is that modern societies consist of solid social structures- the intensification of bureaucratic power in a network of institutions. This monolithic conception of present day society runs counter to Bauman’s idea of a liquid modernity: “In a world of shape-shifting capital and labour, modernity

is best defined as amorphous – in short, liquid.” Bauman’s idea could also be seen in the context of Urry’s (2000) notion of multiple mobilities. Urry suggests mobility does not only refer to the movement of people but also “of other societies of ideas, images, technologies, monies, flowing across various scapes”. (p188).

Looking at the digital divide in the context of this ‘amorphous’ modernity we immediately realize how complicated the issue becomes. For example, in the Jamaican society, we established that social and economic inequalities are rife in the Jamaican society, which is actually an outgrowth of the history of colonial domination and later the turbulent political period of the 1970s and 80s. In that context, we suggest that the mobile phone as the most pervasive, low cost and integrated technology among low income Jamaicans in both rural and inner city communities performs a special role in society. The mobile is serving as a bridge into the world of broadband Internet access for many who would otherwise not have that kind of access. The analysis within this study regards the mobile as a bridge, because on the one hand it is a communication device, and on the other it is also a medium, a link into more advanced technological usages and more advanced economic and social intercourses.

These advanced usages are enabled without need for the physical relocation of people from their individual places as the residential and inner city communities represent two distinct physical places and spaces. The portability of the cell phone and the mobility of individuals from one physical address to another establish a dynamic process of interlinked usage of space and place. Brown and Perry’s space and place framework can be applied here to demonstrate that phone-linked inner city residents, for example, can actively engage in the use of common virtual airtime space with both the social elite and their rural poor counterparts without any group changing their physically embodied place.

Essentially, we are arguing that the mobile phone simultaneously conquers space and place

and bridges social and economic divides while introducing users to the thin edge of the digital domain. The learned literacy of texting and of managing the placement, retrieval and conversing in a call may precede higher stage computing literacies among the marginalized. Using their transitional technologies they can become keener on their information needs, able to locate information in the digital domain and evaluating that information when the need arises. Mobile services providers have begun to capitalise on the propensity of low income Jamaicans to use technologies once they are available. The challenge now is how best to develop and implement public policies that are capable of steering attention to more beneficial usages of the Internet, such as for learning and business. Should these avenues be effectively pursued through strategic public policies, then significant progress could be made towards redressing widespread digital exclusion in the global peripheries of the North and South.

We concede that broadband access through the mobile phone is above the budget line of many low income Jamaicans. However, even though we caution against an over-reliance on the free market to be the final arbiter of the distribution of economic goods, this is one instance where we think the competitive market could have, and has been having, a downward pressure on prices leading to improved access among the poor. Recall that it was the competitive free market which led to the phenomenon of almost all Jamaicans being able to purchase a cell phone. With recent developments in the mobile market, including the entry of a major new player, the restructuring of the incumbent and the re-energising of the present market we could see a price war not only on voice-call rates, but also on mobile telephony Internet rates. This could redound to the benefit of consumers including mobile broadband usage by lower income groups.

STRATEGIES AND RECOMMENDATIONS

Part of the global reality is that the poorer, less educated citizens, in the main, enjoy the lowest effective ICT access. That is to say financial poverty shadows digital poverty. Given, this situation perhaps a preliminary analysis would suggest that solving the deeply entrenched economic and social divides would in effect solve the digital divide. That is not likely to be the case. In what is now being hailed as the networked society, one is unsure of the direction of causality between the digital poverty and the social and economic divides that preceded it. This is a viable and recommended subject for future critical research. We know however that the forms of poverty are mutually reinforcing and co-integrated requiring intensive and interdisciplinary study and a web of social interventions.

To address the challenge of the digital divide in a meaningful and sustainable way requires creative and critical thinking and a questioning of received knowledge and perceived obvious relationships. The poor may not wish to be included in ways conceived of by national and global techno-elites of policy specialists. Will the inclusion and participation of the excluded lead to the growth of new forms of exclusions and divides? Within increasingly tight aid and national budgets, is the goal of redressing the digital divide to be prioritized over the provision of other basic necessities such as healthcare, food security and shelter, or are these somehow interlinked in using ICTs to enable people to provide these supplies and services for themselves. With declining preferential treatment in traditional agricultural commodity markets, ICTs have acquired increased importance in many countries that are now looking to export and market creative products and services using the Internet. To what extent will these efforts be thwarted by limited effective access to the Internet and to ICTs for such applications as telework and M-services?

Competence in a range of information literacies is perhaps the emerging lingua franca in the information economy. The ability to identify information needs, locate, use, and evaluate such information is a critical force in enabling low-income people to have an equitable footing in the global economy. In recognition of this fact, we propose a more decentralized and less prescriptive approach to the information policymaking process.

The information policy making process which generally involves dominant social, ethnic or political elites, has in many developing countries dispelled the culture and oral expressions of the lower classes as lacking the basis to support more advanced formal literacies. Both additional research and pro-poor government policy interventions are also needed to develop and advance programmes that link oral and folk expressions to productive sectors (e.g. tourism, information technology, and education) as an avenue for both training in formal literacy skills and for economic empowerment.

We would expect to see reductions in the practice of ‘dumping’ unserviceable equipment in developing countries, while at the same time see an increase in both multilateral and bi-lateral aid in support of not just hardware, but covering the range of capacity building measures that we have articulated as vital in a more holistic ICT development strategy. Facilities focused more on the human and social development are necessary inputs towards meaningful global co-existence and development.

Within the industrialized countries, many still experience their own internal disparities and digital divides. The inequalities cited in the NTIA’s report still haunt parts of North America and Europe, despite the favourable statistics. In a real sense the digital divide phenomena requires the mutual co-operation and collaboration of both the developing south and industrialized north to fully address the issue and to tackle their root causes.

Following two global summits and on-going

deliberations such as within the Internet Governance Forum sessions, the search for credible solutions to the disparity in global ICT access and governance continues. Many countries have made major strides in redressing this historical imbalance through deliberately high levels of investment in education, research and training. As countries develop or re-define their ICT development strategies, we close by offering a short menu of the issues that we feel will need to be tackled in challenging e-Exclusion in the global south. The key, strategic elements required for more inclusive ICT development include:

- Closer private and public sector collaboration towards more widespread use of ICT applications, especially e-business, e-learning, e-health, and e-government
- Adoption of policy processes that acknowledge cultural diversity as well as oral texts, folk forms and indigenous knowledge systems
- Increased national investment in research and development of both appropriate technologies and policies
- Engendering an appropriate enabling environment through legislation and systematic deregulation of de-monopolized markets
- Efficient and effective spectrum management to expedite the diffusion process of 3G capabilities on cell phones among the marginalized
- Insistence on a multifaceted modern, basic education, including exposure to information and other forms of literacy.
- Policies to address the gender divide in education, access to ICTs and equal access to jobs, credit and business leadership opportunities.

CONCLUSION AND PROGNOSIS

Redressing the digital divide is an important process for the creation of a socially equitable society. We have argued that societies that are moderately endowed in technological terms can leverage development through an emphasis on a diverse range of educational competences, including information literacy. The proliferation of information content globally suggests that the ability to understand not only one's own information needs but that of a wider global community and the capacity to respond to such needs in an efficient and productive manner is critical to the re-incorporation and empowerment of marginalized peoples. The framework discussed in this chapter is however limited in its generalisability as different countries in the global south have been shaped a range of different social and cultural factors.

The discussion content, on space and time flexibilities and on bridging or transitional technologies all foreshadow new and emerging opportunities to use lower-cost communications technologies to address the information and knowledge gaps in our societies and to generate upward mobility among the dispossessed. The analyses offered in these areas are particularly critical in the context of the growth of user generated content emanating both from youth around the world.

The digital divide, as we have suggested, is a complex, shape shifting and deeply subjective concept. In any reconfiguration of the notion, the catalyzing mantra must be increased emphasis on education, information literacy and public policy reform to deal with what we have elsewhere described as the 'digital millennium'. It may well be worth remembering that even within this milieu of a newly emerging Internet and evolving Next Generation Networks (NGNs), one must not lose sight of the fact that technologies are not ends in themselves, but tools and means to an end. As we reminded readers as early as 1995, "the proliferation of new methods of communication doubtless

represents an important transformation. But if we confuse the prevailing technologies of communication with the basic (development) process itself, we run the risk of ascribing more importance to the technologies than they objectively merit.” (Dunn, 1995. pg.23).

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KEY TERMS AND DEFINITIONS

Globalization From Below: Use of mobile technologies by the poor and by community-based networks to interact with both their counterparts in the global north and south as a means of building bridges for marketing, trade and for cultural exchange. This is in contradistinction to Globalization from Above, where the ICT tools are used by powerful corporations, governments and the established techno-elites to perpetuate exclusion and promote their corporate income and class interests.

Digital Divide: The differential access to and usage of information and communication technologies (ICTs) that exist both within and between countries.

ICTs Information and Communication Technologies: These include a range of applications from the cell phone to the computer, where all are playing a role in facilitating the global networked economy.

Information Economy: This represents the structural shift in the global economy away from a purely manufacturing or agriculturally based economy to one dominated by services with a disproportionate emphasis on digitized information.

Information Literacies: The degree to which an individual can find, use and understand information from a variety of sources.

Orality and Folk Forms: Represents the cultural traditions of learning and knowledge dissemination, which can be a potent construct for the acquisition of more functional literacies

Transitional Technologies: Technologies that facilitate the mobility of individuals to higher degrees of ICT usage

ENDNOTES

¹ At 2006 exchange rates: US\$ 1 = \$ JMD 65