Globalization, information and communication technologies, and the prospect of a 'global village': promises of inclusion or electronic colonization?

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This paper discusses the reciprocal relationships among globalization, information and communication technologies (ICT), and the prospect of a 'global village'. The current metaphor of a 'global village' (regardless of physical access to ICT) is problematic, and can be interpreted as a form of electronic colonization. However, through such concepts as blurred identity, nomadism, and hybridity, a distinctly (post-modern) ICT landscape can be redrawn in a way that accepts the global identity of the ICT, but denies the colonial erasure associated with the global-village narrative. ICT, in themselves, cannot serve as an end in education, but the demand for critical education involving ICT is pressing as the effects of globalization are experienced. Three methods of promoting decolonizing criticality are proposed: critical emotional literacy, collective witnessing, and collective intelligence.

Several social theorists have analysed the meaning of globalization and its impact on society, individuals, and social relations. Some of its characteristics include the dominance of a world capitalist economic system, the increased use and reliance on new information and communication technologies (ICT), the strengthening of transnational corporations and organizations, the erosion of local cultures, values, and traditions, and the emergence of a 'global culture' (Giddens 1990, Kellner 1998) within a 'network society' (Castells 1996). Kellner (2000, 2002) contends that the key to understanding globalization 'critically' is to assess it both as a product of technological developments as well as a process of global restructuring of capitalism in which economic, technological, political, and cultural features are intertwined.

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The vision of a networked society in which the peoples of the world are all connected, communicating with one another and co-operating for the common good, is popular and seductive. However, the educational and political significance and desirability of ICT, as both a symbol and an aspect of globalization, is based on a developed-world perspective (Lelliott *et al.* 2000). 'The global-village narrative', Hawisher and Selfe (2000a: 285–286) suggest, '. . . simply will not work for much of the world . . . it is too reductive, too western, too colonial in its conception'. The global-village narrative is a modernist myth that presents cyberculture as culturally neutral and equally approachable by all peoples; on the contrary, such a narrative, by erasing cultural differences and national boundaries, can be seen as a form of colonialism. ICT, the underlying theme in this myth, are both a feature of globalization and the very condition of possibility for the process of globalization (Lelliott *et al.* 2000).

Without access to ICT, however, many societies are in danger of further isolation and exclusion from global development. Globalization and the use of ICT open up opportunities for promoting democracy and prosperity in poorer parts of the planet. ICT provide tools for disseminating information, participating in decision-making, and improving environmental conditions, gender equity, social justice, peace, and health (Lelliott *et al.* 2000).

Thus the dilemma: Without ICT access, many societies are in danger of further isolation; but that very access creates new forms of marginalization and colonization. What is the solution to this dilemma? In response, we provide an overview of both sides of the dilemma, emphasizing that the problems may not be as clear-cut as some maintain. We also show that, in a combination of the concepts of blurred identity, nomadism, and hybridity, a distinctly (post-modern) redrawing of the ICT landscape may be outlined—a redrawing that recognizes the increasingly global identity of the ICT, but denies the colonial erasure associated with the global-village narrative.

The metaphor of the 'nomad' (Deleuze and Guattari 1977, 1987) provides an empowering conception of such a relationship because it shows how ICT can be inclusive for marginalized people. A nomad is someone constantly on the move, connecting with others, assuming heterogeneous identities, and celebrating plurality, in contradiction to unitary models of Western thought that exclude certain populations. Nomads learns to live with the discomfort of uncertainty and multiplicity, and do not allow themselves to collapse their identities into that of 'global villagers' who are assumed to have identical and universal needs and desires. Analysing the nomadic metaphor sheds light on such questions as: Who benefits most from the growing application of ICT around the world? Who benefits least? What are the implications of such inequities for teachers, their students, and the general population? What is the nature of the power relations among people, groups, and nations as ICT invade every part of society?

We contend that ICT, in themselves, cannot be promoted as an end in education, but that the demand for *critical education* involving ICT is pressing as the effects of globalization are experienced. In other words, physical access to ICT is far from sufficient for *critical* access. We outline three concepts for promoting such a critical education: critical emotional literacy, collective witnessing, and collective intelligence.

It could be argued that the educational intervention we suggest herein is simply another form of 'colonizing', however progressive in its intentions. However, this paradox characterizes all educational interventions. Our alternative may be justified by noting the purpose of the intervention: the exploration of an 'alternate criticality' (Burbules and Berk 1999) that is the opposite of the hegemonic and suggests that people think 'differently'—in other words become able to question and doubt even their own pre-suppositions. This emphasis on criticality is part of the *practice* in which an alternative may be located.

The global-village narrative: promises and perils

The promises and perils of ICT are tied to a major transformation in modern times, globalization. Some of its characteristics include economic factors (e.g. a rise of transnational corporations), political factors (e.g. a loss of nation-state sovereignty and a weakening of the notion of the 'citizen'), cultural factors (e.g. a dialectical tension between the local and the global), and educational factors (e.g. new education agendas that privilege particular policies for evaluation, financing, assessment, standards, teacher training, curriculum, instruction, and testing) (Burbules and Torres 2000).

One feature that makes globalization possible, and which affects education in economic, political, and cultural terms, is how easier communication has made (for some, not for all) the flow of commodities, capital, technology, ideas, forms of culture, and people across national boundaries (Castells 1996). This flow of goods and capital is more apparent in developed than developing countries, thus widening the gap between the haves and have-nots. In particular, the flow of ICT—which should not be viewed apart from the flow of other items—is creating new educational spaces, what some call a 'globalized and inter-connected education' (Kellner 2000). As ICT make this globalized and inter-connected education possible, the questions in education (related to learning, teaching, pedagogies, relationships, and social issues) become more complex. It is not clear, for example, how this globalized, 'informationalist' education (to use Castells's (1996) term) tackles equity and social justice. Yet, globalized inter-connected education has the potential for improving many aspects of civil society.

A networked society that spans the globe can serve to erase meaningless geopolitical borders, eliminate racial, religious, and ethnic differences, and bind people together regardless of race, ethnicity, or location. Negroponte (1995: 230–231) concludes that '[A] new generation is emerging from the digital landscape free of many of the old prejudices. . . . Digital technology can be a natural force drawing people into greater world harmony' within a landscape where 'we are bound to find new hope and dignity'. People in Palau and Scotland, for example, regard the Internet as a space in which they can express, share, and enrich their cultural values (Kitalong and Kitalong 2000, Sloane and Johnstone 2000). ICT, therefore, offer opportunities otherwise unavailable to a large number of people. Burbules and

Callister (2000: 280) argued that, in developing economies of Southeast Asia,

> access to higher education courses and programs online, and to the other fruits of advanced technology, is regarded as a primary engine of growth, and they are aggressively seeking out quality online educational opportunities from whomever will provide them.

On the other hand, the often over-optimistic (and romantic) claims about ICT and their use in the classroom are questionable in light of the larger, exceedingly complex role of technology in society (Fabos and Young 1999). Educational policy 'is driven everywhere by terrors of economic globalization and pressures of commercialism' (Blake and Standish 2000: 11). Hawisher and Selfe (2000b: 1–2) argue that:

> According to this utopian and ethnocentric [global village] narrative, sophisticated computer networks—manufactured by far-sighted scientists and engineers educated within democratic and highly technological cultures—will serve to connect the world's peoples in a vast global community that transcends current geopolitical borders.

Several scholars contend that people should be aware and sceptical of the fact that 'just as telecommunications technology is credited with promoting multi-culturalism, it has also been blamed for increasing existing inequities on a broader scale' (Hawisher and Selfe 2000a: 283–284). Noble (1998: 269) maintains that educational efforts on behalf of equity, empowerment, and access for all often serve to advance technological—in particular, *electronic*—colonization:

> Seductively aligned with [educational efforts on behalf of equity, empowerment and access for all], in rhetoric if not also in practice, is an array of corporate promoters and technologists whose agendas, ultimately have less to do with issues of equity or even of education, broadly conceived, than with furthering technological development (and potential profit) through research and development in the public arena, through the merchandising of hardware and software, and through the reshaping of educational systems both to facilitate their technological colonization and to ensure the training of reliable cadre of adaptable 'problem solvers' and technicians. These agendas come with an abundance of resources—both financial and political—that dwarf those available to progressive educators unwilling to adorn their efforts with technological or vocational trappings.

Electronic colonization occurs within discursive venues (on television, in classrooms, books and articles, and in corporate settings), often without anyone noticing, because the elements of the global-village narrative are so familiar. In this narrative, while Westerners maintain the vision of linking peoples around the world, they imagine themselves, not as simple members of this electronically constituted village, but rather as discoverers of the village, explorers of its remote corners, and even colonizers of its exotic peoples (Selfe 1995).

This 'technological utopia' (Wresch 1996) has attracted many critics, especially if one considers that the largest portion of the population of earth does not have access to the Internet. As Deibert (1997) suggests, there are deeper motives behind claims for the global character and importance of

ICT: 'The global-village myth . . . provides a convenient and ideologically effective way of making efforts to expand free-market economic development, provide active support of fledging democratic political efforts, and intervene militarily in the affairs of non-western countries' (p. 9). And then adds:

> To citizens of other countries, however, the global-village myth is far from culturally neutral and understandably much less appealing. The inhabitants of countries traditionally identified as less technologically developed, for example, may interpret the global expansion of the web within the historical context of colonialism. . . . To citizens in these countries, the Web may seem less a neutral and welcome medium for global communication than a disturbing and unwelcome system for broadcasting western colonial culture and values. (p. 9)

These issues pose complex problems, and reveal the unavoidable dilemma concerning ICT in poor and developing countries: without access to ICT struggling societies are in danger of further isolation, but that very access creates new forms of exclusion and colonization. The question is then: are there any alternatives to the global-village narrative?

We join Deibert (1997), Hawisher and Selfe (2000a, b), and others in suggesting that there are alternative perspectives to the global-village narrative, thus expressing our scepticism around the claims made about the possibilities offered by the constitution of 'a global village'. One such alternative, that not only exposes some of the problematics raised above but also promises some hope, is what we call the 'nomadic narrative', inspired by Deleuze and Guatarri's (1977, 1987) work on 'nomadic thought'. We analyse the meanings entailed in this narrative, and examine why it opens up new possibilities for promoting critical education in the context of ICT. We propose that a nomadic metaphor suggests an empowering way of analysing human relationships with new technologies, because it describes how ICT can be inclusive. Nevertheless, we believe that the deepest insights into how criticality can be promoted in the context of ICT are still in front of us. Whether such insights—however progressive they may be—will be 'less' colonizing is an open question that eventually will be answered only by assessing the contribution this critical education makes to improving world conditions (Burbules and Berk 1999).

Nomadic ICT practices

It has been four decades since McLuhan (1964: 358) pointed out that people are 'suddenly nomadic gatherers of knowledge, nomadic as never before, informed as never before, free from fragmentary specialism as never before—but also involved in the total social process as never before'. Deleuze and Guattari (1977, 1987), in examining developments of new spaces in global communication, described the changed perceptions and political meanings of these spaces, considering them as 'non-hierarchical' and 'nomadic'. In *A Thousand Plateaus: Capitalism and Schizophrenia*, Deleuze and Guattari (1987) provide an alternative to ways of understanding 'the global'. They describe nomadism in their metaphor of the

'rhizome'. A rhizome is different from roots and trees, they maintain, because it connects any point to any other point, having multiple entryways, and operates by variation and expansion. Its characteristics are connection, heterogeneity, and multiplicity.

A nomad, like a rhizome, is not rooted in an ordered space and time, and does not repose on an identity; instead, it rides difference. The nomad knows no boundaries and wanders across diverse spaces. This description contradicts the unitary, binary, and totalizing models of Western thought as epitomized in the global-village narrative. In the latter narrative, there is a constant pressure to eliminate the idiosyncratic or the personal, and to mute questions about purpose, equity, and justice. In the nomadic narrative, however, the idiosyncratic becomes a source of empowerment in a non-hierarchical space defined solely by heterogeneity, connectivity, and multiplicity.

Braidotti (1994), building on Deleuze and Guattari's work, conceives the nomadic as both a political project and a critical consciousness, an attempt to 'explore and legitimate political agency, while taking as historical evidence the decline of metaphysically fixed, steady identities' (p. 5). Nomadism entails a constant state of 'becoming', which Braidotti refers to as 'as-if'. The practice of 'as-if', for Braidotti, is a 'technique of strategic re-location in order to rescue what we need of the past in order to trace paths of transformation of our lives here and now' (p. 6). Braidotti also understands 'as-if' as 'the affirmation of fluid boundaries, a practice of the intervals, of the interfaces, and the interstices' (p. 6). For example, the hypertext/hypermedia nature of the Internet allows users to move with unprecedented ease from document to document, accessing images, text, and sound, and to form new paths as they explore connections and co-construct knowledge.

In addition, Braidotti (1994) is insistent that, for 'as-if' to be useful, it must be grounded in deliberate agency and lived experience. Her aim is to ensure that agency and lived experience—a grounded subjectivity—are not lost, as suggested by polemics of post-modernist ideas. On the contrary, as she argues, post-modern subversions (e.g. repetition, parody, irony) 'can be politically empowering on the condition of being sustained by a *critical* consciousness that aims at engendering transformations and changes' (p. 7; emphasis added). Promoting these subversions, for instance, in the context of online communication opens new possibilities for initiating transformations, because these subversions expose the assumptions embedded in such taken-for-granted questions as:

> What do we want students to learn? How can we use new technologies? How should we? Why should we? What will change when we do? Do we want those changes? What do they mean for us, our students, society? What is fair? What kind of society do we want to live in? And, perhaps ultimately, who do we want to become? (Bruce 1999: 227)

Consequently, Braidotti's emphasis on 'critical consciousness', and Bruce's concerns for thinking about taken-for-granted questions in new ways, direct attention to the need for an alternative criticality that involves the ability to move flexibly outside conventional thinking—that is, 'imagining what it

might mean to think without some of the very things that make our (current) thinking meaningful' (Burbules and Berk 1999: 61). The perspective of criticality as a practice, argue Burbules and Berk (1999), suggests that criticality is not only an intellectual capacity but also a way of being *and* a relation to others.

In using a nomadic metaphor, we point to the significance of using multiple ways of learning and communicating. The nomad is someone who learns to live with the discomfort of uncertainty and the complexity of change. For example, the many opportunities offered by the Internet to engage in criss-crossings of varieties of discourses that combine images, text, and sound permit the nomad continually to re-define his or her identity because he or she never acquires complete familiarity with one discourse— discourses are constantly in shift. The nomad is 'the kind of subject who has relinquished all idea, desire, or nostalgia for fixity' (Braidotti 1994: 22). This empowers the nomad to deconstruct the stability of fixed identities and develop a capacity for thoughtful flexibility and new kinds of knowledge. Thus, the nomad becomes a 'form of political resistance to hegemonic and exclusionary views of subjectivity' (p. 23).

What does the nomadic metaphor offer in reconceptualizing human relationships with ICT? This metaphor is a helpful intersection of multiculturalism and post-modernism, both of which have critiqued the notion of the unitary subject, albeit with different conclusions. Unlike the global-village metaphor, the nomadic metaphor opens possibilities for constructing and enacting new images of one's self, afforded in part by the critical application of ICT in education. By promoting nomadic thought and praxis, these possibilities offer political choices and strategies to deal with exclusion and homogeneity. These strategies include creating online learning communities for the needs and interests of individual learners built around their talents and hopes, creating online conferences to meet the collective needs of local neighbourhoods and regions, and promoting collaborations between schools and businesses (locally and globally) in ways that expose marginalization and oppression.

An educator engendering the nomadic metaphor uses the Internet critically; he or she does not lay claim to any kind of natural symbolic hierarchy or identity, but rather translates experiences through multiple discourses and identities. She knows that all knowledge is partial. These understandings do not lead to anarchy or complete relativity because one can incorporate multiplicity and hybridity without losing a capacity for thoughtful evaluation. Burbules (1998: 109) notes that the ability in the Internet to have multiple 'links' has a special role in realizing critical literacy, and contains an emancipating potential because it encourages 'new practices of reading [and writing]: ones that might prove more hospitable to alternative, non-traditional points of view and more inclusive of cultural difference'. Yet, this is also problematic because the materials are created by unknown persons whose reasons, values, biases, motivations, and credibility are almost entirely beyond the user's awareness (Burbules 1998). However, a nomad is a critically literate learner who knows that the process of using the Internet is one of undoing the illusory stability of fixed claims and identities that mark others and one's self socially and ethnically. This

articulates a different perspective on the educational potential of cyberspace. In cyberspace, as Gur-Ze'ev (2000: 213) explains:

> . . . virtual communities are formed 'spontaneously', or arise by self-determination, and constitute free individuals participating in uncensored, chaotic, dialogical communication that crosses borders of disciplines, identities, cultures, and concepts of knowledge. It creates new worlds through and within differences, and not, as in the modern concept of knowledge and inter-subjectivity, through a drive to overcome or destroy differences. Spontaneity and egalitarianism are conceived as overcoming socially constructed asymmetrical relations and distorted communication based on race, sex, ethnicity, nationality and class.

On the other hand, cyberspace and the nomadic narrative have their limitations. Gur-Ze'ev points out that in cyberspace power relations are disguised. As he suggests, 'cyberspace contends successfully with all traditional attempts to eternalize, mystify, and de-mystify reality, and allows a new kind of normalizing education' (p. 220). We do not think that power relations are completely disguised online. Several scholars have demonstrated that gender and power issues are not easily hidden in online environments (Turkle and Papert 1990, Hall 1996, Herring 1996). We agree with Gur-Ze'ev (2000) that the possibility 'for creating uncensored, centre-less, virtual communities and dialogues with others, and for freely choosing information, critical and innovative strategies, aims, and identities, look[s] very dubious' (p. 223). We share concerns that cyberspace reproduces social inequalities between the haves and the have-nots, and that its constitutive element of sameness clothed as openness to difference might be problematic.

Therefore, it is important to acknowledge that engaging in the nomadic narrative entails a contradictory mixture of emancipatory and oppressive tendencies. Understanding cyberspace as an embodiment of such contradictory tendencies and as a force of both homogenization and heterogeneity is crucial to avoiding problematic assumptions about the use of ICT in education. The often-resulting inequalities and injustices create challenges for educators who want to use ICT in their teaching. Nevertheless, the nomadic metaphor does offer a paradigm for constant becomingness in cyberspace, a way out of normalizing conceptual and ethical systems founded upon the ideas of centre, hierarchy, and linearity. This redrawing of the ICT landscape admits an increasingly global identity, but denies the colonial erasure associated with the global village as a means for serving Western interests.

We underscore the need to develop a 'criticality' in the context of globalization, education, and ICT that overcomes the one-sidedness and ideological biases which permeate the conception of the global-village narrative. To the colonizing potential of ICT, we point to a *decolonizing criticality* in which oppositional individuals resist colonization and globalization to promote peace and social justice. Calling for this alternate kind of criticality minimizes (but may never eliminate) the potential of importing globally-shared cultural values and conceptions. In remaining open to criticisms of colonization and globalization, criticality provides opportunities for conversations. The fact that no intervention is absolutely watertight

does not diminish the importance of strategies that promote criticality in education.

Strategies for promoting critical education

Developing new conceptualizations for using ICT in education to encourage political resistance and change is not an easy task. 'How can we build', Braidotti (1994: 99) asks, 'a new kind of collectivity in differences?'. The nomadic metaphor offers this 'collectivity in differences' because on the one hand it embraces multiplicity and contingency at the level of the individual development and, on the other hand, it promotes political collectivities that challenge one's cherished beliefs and taken-for-granted assumptions. This metaphor is a starting point for thinking about specific components in using the Internet in education as potentially critical and emancipatory. These components are both critical/oppositional and positive/constructive. Such a view does not assume that 'critical' literacy would (or should) necessarily converge on any single understanding of the world; a crucial aspect of criticality is a collectivity that does not erase difference and multiplicity. The question then is: How can one account for a process of 'becoming' while empowering the educator and student's political agency in the context of ICT-mediated education?

Although we acknowledge the limitations of the Internet, we agree with Rice and Burbules (1992) that education for critical sensitivities and critical literacy can be accomplished on the Internet. The key challenges for critical education include how to analyse the transformations ICT are causing in education, and how to devise conceptual tools and strategies to make use of ICT that empower traditionally marginalized groups and individuals struggling for justice and equity. We suggest three strategies—*critical emotional literacy, collective witnessing*, and *collective intelligence*—that emphasize three inter-dependent aspects of criticality in using ICT:

- the ability to question cherished beliefs and presuppositions, thus emphasizing difference that presents students with the possibility of thinking otherwise;
- the notion that criticality is not only a way of thinking but also a way of being, i.e. it is a practice, a way of life that does not uncritically accept ideological valorizations; and
- collective questioning and criticism in social circumstances that affirm resistance against global domination.

These aspects are manifested in the nomadic mode of thinking and praxis. The nomad is the individual who *acts*, using the above conceptual tools, to develop critical perspectives about issues in a globalized society. We do not pretend that the strategies we offer here include all options. However, in the context of the nomadic narrative, we believe that they open possibilities for hope and political agency, while accounting for the process of change.

The above three aspects of criticality in using ICT do not assume either monolithic views about a more just and peaceful world or the imposition of specific critical attitudes on individuals. A central feature of criticality is that

to engage in such a practice is not simply a matter of individual abilities or dispositions (Burbules and Berk 1999); it requires moving against prevailing valued assumptions, e.g. ethnocentricism, militarism, capitalism, or stratified societies—'hegemonic' ideologies (Kellner 1978) that become so because circumstances change while their advocates aim at preserving them. (Not everyone can or will become a critically literate individual in using ICT. Because some individuals or societies are 'pre-critical', strategies such as the ones suggested in this paper can simply be helpful. On the other hand, criticality as a practice will always remain open to being re-defined.) A critical education in using ICT recognizes the multi-dimensional, complex, and contradictory reality of globalization, while promoting the practices and conceptions of decolonizing pedagogies.

Critical emotional literacy

Interest has been growing in studying the affective dimensions of online relationships in educational environments (Turkle 1995, Boler 2001, Vrasidas 2002). Boler (2001: 1) asks such questions as: 'How do online social relationships and networks change traditional philosophical understandings of the relationship of self and other? What philosophies of desire and emotion are helpful in understanding digital social landscapes?'. The importance of being emotionally and intellectually critical in using the Internet becomes more apparent if one recognizes what Boler has aptly called an 'economy of attention', the extent to which digital interaction relies on the commodity and currency of attention (e.g. attention habits are dramatically changing given the nature of navigation in the Internet). How educators might reach a high level of attention and reflection in learning in online conversations, to ensure a measurable 'shift' in thinking and feeling, seems to be circumscribed by these economies of attention (Boler 2001). Those educators concerned with issues of justice, peace, and equity in relation to ICT face the challenge of how to develop 'critical education' in order to help students deal with constant changes in economies of attention.

The first aspect that promotes critical education is developing 'critical emotional literacy' in the context of a 'pedagogy of discomfort' (Boler 1999, Zembylas and Boler 2002, Boler and Zembylas 2003). A pedagogy of discomfort requires individuals to step outside their comfort zones and recognize what and how they have been taught to see (or not to see). Developing critical emotional literacy means analysing and critiquing the ways in which ICT encourage certain emotions and ideologies and prohibit others. The difficulty in developing critical emotional literacy is finding out how emotions are manipulated by ICT. This creates two primary challenges for an educator: to deal with the partisan character of the Internet and what it teaches, and to learn how to problematize the ways in which ICT serve as a form of cultural and emotional pedagogy or hegemony.

Learning to see differently involves recognizing that the Internet teaches people to view the world through a 'partisan' lens. Within a culture of inquiry, argues Boler (1999), a central focus is to recognize how emotions

define how and what one chooses to see, and conversely, not to see. She calls this the 'pedagogy of discomfort', because this process is 'fraught with emotional landmines' (p. 176). In the aftermath of given political or social events, for example, it is difficult and painful to see how such emotions as anger and indignation—expressed in the media and the Internet—are potentially *mis*-educative, especially when many individuals find comfort in the solidarities created by the emotions. The aim of a pedagogy of discomfort is to analyse the 'emotional landscapes' (Boler 2001: 1) created in cyberspace, and to examine how they shape and mark a sense of attachment and identity. Developing skills and knowledge to analyse how the Internet teaches people to view the world through a 'partisan' lens is an important step in identifying exploitation, alienation, and disparities between the haves and the have-nots.

The 'emotional' aspect is crucial to understanding self/other relationships online because, in the absence of co-presence, it is emotional attachments that construct images and identities of both self and other. These emotional attachments and landscapes need to be scrutinized so that users understand how and why they 'see' some things and not others. When examining the history of inequities, injustices, and wars, critical education must explore the field of emotion, not because knowledge of emotion 'installs the proper guilt' (Britzman 1998: 112); rather, its examination enriches the history of emotion for someone to engage in modulations of otherness. Studying emotion as constituted through the use of ICT, and its relationship to such notions as justice, peace, and equity, are matters that require more than one perspective.

Developing critical emotional literacy also requires knowledge of how ICT work, how they construct meanings, how they serve as a form of cultural and emotional pedagogy or hegemony, and how they function in everyday life. Critical *emotional* literacy and a pedagogy of discomfort, according to Zembylas and Boler (2002), are different from critical *media* literacy, because the latter emphasizes the value of rational dialogue. What is missing, Zembylas and Boler suggest, is an explicit emphasis within critical media literacy on engaging students in analysing emotional investments they experience in relationship to particular signifiers, e.g. in cyberspaces. For example, what emotions are associated with the construction of identity through textual or image representations of self and other on the Internet? How can students become critically aware of such representations and deconstruct their emotional investments to particular ideas (e.g. patriotism), or images (e.g. the national flag)?

Critical emotional literacy, situated within a nomadic narrative, emphasizes critical inquiry that requires educators and students to trace how their subjectivities are constantly shifting. Critical emotional literacy entails creating spaces for epistemological and emotional problematizations of individual and collective emotions, histories, and sense of self, and encourages critical respect for difference in examining the nature and effects of ICT culture. The creation of such spaces contributes to a richer understanding of the ways in which globalization is manifested in education. Critical emotional literacy as a tool within a globalized world is one way of affirming the historical and political agency of the learner, because it enables

him or her to formulate emotion as important knowledge in relation to culture, education, and resistance.

Collective witnessing

Critical education in using ICT is also promoted by emphasizing 'collective witnessing', a collectivized engagement in learning to see, feel, and act differently. Collective witnessing is embedded in a nomadic narrative that acknowledges the contingency of one's subjectivities. A collective emphasis is important in understanding that how people see themselves and want to see themselves are inextricably intertwined. Collective witnessing calls for critical emotional literacy but also for action that is a result of learning to become a 'witness' and not simply a 'spectator' (Zembylas and Boler 2002). 'Witnessing' is different from 'spectating', because witnessing assumes a collectivized engagement in learning to see differently (Boler 1999). Witnessing is a call to action—action as a result of learning to see differently.

This does not assure any change; however, it is the first step in that direction. Therefore, it matters a great deal how educators invite students to engage in collective witnessing, especially as educators and students experience each other through new ICT in virtually disembodied ways. Collective witnessing is also different from critical inquiry in that the latter often promotes educational individualism, while the former emphasizes the collective and the political and ethical aspects of collectivity.

An example of witnessing is reflected in the case of a classroom in which students' reactions to an issue (e.g. 'deleting the debts owed by poor countries') are not easily identified. As witnesses, the students undertake to investigate, for instance, 'alternative media sources', on the Internet. They ask such questions as: What are the motives of doing this? What are the costs and benefits? How do people feel about this issue if they are in rich countries? If they are in poor countries? As students become willing to learn to see differently and understand how their lives are intertwined with others, they begin to determine 'for themselves what kinds of actions make sense for them to take given their own ethical vision' (Boler 1999: 198). Some might choose to express alternative perspectives in the classroom or in the public arena. Others might choose to participate in groups that reformulate education.

Promoting collective witnessing implies that teachers who engage in online projects (e.g. conferences that involve hundreds of educators online together) clarify for themselves and for the students their ethical responsibilities. How educators and students express their thoughts and emotions online, and how they listen to each other, requires a 'politics of listening' (Levinas 1987). According to Levinas, 'just' listening requires people to simply and profoundly listen to each and every other. Online educators can develop just listening by promoting it from the grassroots in every way possible through the Internet. We build on Levinas's view that, in the 'face-to-face' of people's encounters with others, the ethical is born and reborn (not in terms of sameness but in the sense of absolute otherness), and

suggest that if a politics of listening is promoted in online communication, the other is not merely an abstract citizen of a political community, but a member who listens 'actively' (Garrison 1996). To listen actively, says Garrison, one must be 'vulnerable' to the other. That means suspending those beliefs that constitute one's personal identity. The rewards of 'listening online' are that others different from ourselves can teach us to see and tell the story of our lives in new ways, and thereby grow, as Garrison suggests. The fact that others—individuals I have never met—call me into question, 'empties me of myself and empties me without end, showing me ever new resources. I did not know I was so rich' (Levinas 1987: 94).

Furthermore, Fabos and Young (1999), from both Foucaultian and neo-Marxist perspectives, underscore the need to historicize and contextualize the use of information technology (e.g. through distance education) 'in the framework of power and dominance', to ensure that 'students are asked to tackle provocative questions [that] . . . cultivate more critical or political sensibilities' (p. 242). Consequently, they propose something similar to collective witnessing:

> [W]e need to locate and highlight those projects which encourage young students to go beyond 'seeing the world' as electronic tourists from the safety of their computer screen and a dominant American perspective. We need to celebrate those projects that ask troubling questions about local inequities, and even the economic role and impact of telecommunications on indigenous communities. We need to help students ask questions that consider why the sixth-grade girl from the Midwest might never end up net-chatting with the same-age girl in Indonesia who may have sewed her overpriced Adidas t-shirt or Nike shoes.

> In this case, we can't expect young students to 'guide their own learning'; instead, we must help them understand—and understand ourselves—the complex role technology plays in our lives. . . . While distant learning activities may appear to be magical education experiences, all educators must first step back, critically evaluate the inevitably enthusiastic rhetoric, and attempt to understand the complex contextual framework behind the push for tele-communication exchange. (Fabos and Young 1999: 249–250)

In our own research, we have tried to understand globalization and technology-mediated interactions and promote a critical view of ICT as a symbol of globalization. Our research and development programme, a collaboration between educational institutions in the US and Europe, examines technology-mediated communication and interaction in globalized distance education. We found significant qualities in online education that are often ignored in critical discussions of ICT (Vrasidas and Zemblylas 2004). For example, the participation of Greek-Cypriots in this research programme allows them to interact with dominant US and European discourses about the role of ICT in education, while at the same time they learn to problematize their relations to the 'local' Greek culture and customs. Relating 'nomadically' to Europe or the US pushes the Greek Cypriots to find new ways to remain linked to their culture, religion, and country, because they begin to see the tensions between the 'local' and the 'global' and the implications of these tensions for the survival of their own culture.

In another research study, in which we examined the effects of an online master's degree programme offered to the Pacific region, we found that ICT, when used appropriately, can benefit people from various cultures, without necessarily promoting cultural colonization (Vrasidas and Zembylas 2003). Participants in this online degree were educators from Pacific islands (most of them with families), such as Palau, US Samoa, and Guam. It was impossible for them to leave their homes to be physically present at a university for 1 year; family ties in the Pacific islands are of primary importance in one's social life. However, this need to stay with the family is well-served with online programmes. Thus, online education can serve particular purposes that might not otherwise be met. In other words, there is a time and place for online education, just as there is a time and place for face-to-face education.

The ethical responsibility of educators is to become what Aronowitz and Giroux (1985) call 'transformative intellectuals'. Educators can use their knowledge and expertise in promoting collective witnessing as a useful tool in teaching their students and themselves how subjectivities change in unpredictable ways; learning how to be a witness instead of a spectator becomes possible if one acknowledges the inter-connections with others (Boler 1999).

Collective intelligence

The importance of collectivity in ICT and education is particularly expressed in Lévy's (1997) notion of 'collective intelligence'. He contends that collective intelligence is the inevitable result of intelligent systems which are structurally coupled through electronic mediation. In other words, 'connecting intelligences' breeds 'collective intelligence', and begins to monitor and correct the behaviour of collective intelligence in a way analogous to the human nervous system. Thus, for Lévy, ICT are creating a nomadic culture in which human intellectual capabilities are constantly evolving. Denzin (1995: 251) argued that 'existence is not determined solely by interaction or by social acts. . . . ICT (the mass media) mediate and define social life'. Similarly, collective intelligence is not a cognitive object, and intelligence needs to be understood 'in its etymological sense of joining together (*inter legere*), as uniting not only ideas but people, "constructing society"' (Lévy 1997: 10).

ICT have the potential to 'promote the construction of intelligent communities in which our social and cognitive potential can be mutually developed and enhanced' and 'enable us to think collectively rather than simply haul masses of information around with us' (Lévy 1997: 9–10). The Cartesian, 'I know, therefore I am', becomes 'We know, therefore we are'. According to Lévy, 'the basis and goal of collective intelligence is the mutual recognition and enrichment of individuals rather than the cult of fetishized or hypostatized communities' (p. 13). Lévy's 'collective intelligence' is an 'universally distributed intelligence' in which 'no one knows everything, everyone knows something, all knowledge resides in humanity' (p. 8). Collective intelligence is a continuum developed through collective discussion, negotiation, and imagination.

Lévy's (1997) description of collective intelligence has much to offer educators and students, especially in the articulation of nomadic learners, the 'immigrants of subjectivity' (p. xxiii). The nomadic metaphor reflects the continuous transformation of all kinds of landscapes: economic, aesthetic, political, professional, educational, emotional, and mental. This nomadism will develop 'within an invisible space of understanding, knowledge, and intellectual power, within which new qualities of being and new ways of fashioning a society will flourish and mutate' (p. xxv). Educators have the opportunity to produce systematically the tools that will enable learners to construct intelligent communities, and to think as a group, capable of dealing with the continuous transformations.

Pór (1995), in exploring the potential of collective intelligence, pointed out that social progress is lagging behind technological progress. Now, however, humanity has the opportunity 'to optimize the design of social institutions for closing the gap between the human conditions and human potential' (p. 273). The potential of collective intelligence can be described in terms of the development of new or enhanced individual and collective competence, research contributions to the evolution of knowledge used to promote issues of peace and social justice, and the creation of new designs for global virtual education. However, important questions remain: What roles, responsibilities, and agreements are necessary to foster the emergence of collective intelligence? What technologies have to be used in support of new designs for global virtual education, especially in providing help to poor and developing countries?

Rossman (2002; emphases in original) suggests that:

> . . . through networking we can draw upon expertise, enable creative thinking and develop collective intelligence. *However we are just beginning to learn how*, in part because although researchers engage in a great deal of networking conversations, too few have given serious attention to online thinking skills. Making networking work thus for research planning *is a new art, yet to be learned*. . . .

> Networking can amplify collective intelligence to bring many minds together for deeper, creative, imaginative collective thinking. . . . Suppose that each of a thousand universities conducted an ongoing seminar on one of a humanity's crucial issues and continued it year after year, connecting a worldwide community of experts online. What existing think tank could rival such a process for experimenting with the possibility of larger and more sustained thinking?

Collective intelligence provides an opportunity to link people in order to report significant experiences or demonstrations of success in meeting a need or solving a problem, and also to link scattered experts, combining their expertise to amplify many kinds of research.

We believe that the notions of 'collective intelligence' and 'collective witnessing' are connected in an important manner: their emphasis on the 'collective' is an expression of political will to the extent that they deepen a sense of ethics in navigating and acting in cyberspace. 'Cyberspace could become', Lévy (1997: 59) suggests, 'the most perfectly integrated medium within a community for problem analysis, group discussion, the develop-ment of an awareness of complex processes, collective decision-making, and

evaluation'. The political and ethical implications of developing collective witnessing and collective intelligence via ICT are manifest in the emphasis on creating collectivities sensitive to inter-personal needs and concerns:

> The intelligent collective doesn't analyse itself to understand itself: It understands itself because it lives and only understands itself by living. Within the knowledge space knowledge no longer objectivizes but subjectivizes, on the basis of a subjectivity that is plural, open, and nomadic. In the knowledge space the preferred object of knowledge reflects the eternal becoming-beginning of the earth, the perpetual resumption of becoming of the collective intellect and its world. (p. 207)

As 'collective intellects', educators and students may empower themselves in using ICT to be critical, and to take action for justice, peace, and equity. We do not have answers on how to provide access to technology to those who do not have it; however, those who do have it can assume the historical and political responsibility to become witnesses against injustices, wars, and inequities around the world. Developing critical education means exploring new ways of incorporating strategies of criticality—such as critical emotional literacy, collective witnessing, and collective intelligence—into online activities. In teaching ourselves and others to recognize the inequities that challenge humanity in our world—ethnocentrism, racism, xenophobia, sexism—we have already begun the difficult work of solving these problems.

Critical education in the 21st century

A lingering problem in debates about access and inclusion is that not everyone has access to technology, and it is unlikely that everyone will do so in the near future. The roles of the World Bank and the International Monetary Fund, for example, must be considered here, as access to technology is contingent upon access to funding for education—which is not a priority of these two organizations. Almost every country in Africa over the last two decades has experienced a downturn in literacy, numeracy, and access to education as a result of political and economic control of markets and education (Lelliott *et al.* 2000). Therefore, demanding 'access to new technologies for all' appears to be a 'critical egalitarian' call, but one needs to acknowledge that such a call might bring with it more difficulties than solutions.

On the one hand, the proviso that such diminished digital divides must be accompanied with skills for critical evaluation of new technologies might appear to some observers to be an *ex post facto* hope rather than a prior requirement in the development of technology itself. On the other hand, the demand for critical education can be acknowledged as a pragmatic call for critical sensitivities and communicative virtues, not only critical skills, for critical literacy on the Internet (Rice and Burbules 1992).

In this paper, we have interpreted the role of ICT as both a symbol and an aspect of globalization. ICT are a symbol because they provide the most powerful networking platform for communication, information, education, and business that is unrestricted by borders (for example, the Internet is becoming the basis for the globalization of knowledge—a universal, globally

accessible library). However, ICT are also an aspect of globalization in the sense that new technologies have such an impact on mobility and communication that technological change implies social and other changes around the globe (for example, there is a decisive shift from industrial capitalism to post-industrial economic relations). The reality of globalization can be understood by focusing on this prime mover, ICT; globalization builds on ICT and drives from ICT.

These inter-connected themes, globalization and ICT, create challenges as well as opportunities for educators. Critical education within this context can deflect the discourse to point precisely to issues that elucidate both conflicts and new openings. The critical use of ICT in education opens opportunities for research, development, and interaction not previously available to educators and students. Although ICT offer access to information for more people, they have their problems and limitations. A critical education would demand access to new technologies for all, but this access should be accompanied with critical skills and critical sensitivities for evaluating new technologies. In other words, although physical access is an important prerequisite for inclusion in the educational use of ICT (Lelliott *et al.* 2000), it is far from sufficient for critical access. At the very least, critical access to the educational use of ICT requires students and teachers to become critically literate. An idealistic and utopian vision of a networked, global village 'obscures the very real challenges involved in accomplishing inclusive education and a sustainable civil society' (Lelliott *et al.* 2000: 51).

We have emphasized the importance of reflecting upon ICT in education within a global context, as part of an examination of issues related to individual agency and ethics of care for the *Other*. We have called this a nomadic narrative, and suggested that the nomadic metaphor can be used as a useful tool for analysing globalization and its impact on education, in that it attempts to articulate an alternative to the pretence to neutrality, universality, and metaphoric images of the global village. Critical emotional literacy, collective witnessing, and collective intelligence are conceptual tools that can be developed to promote criticality in the educational use of ICT. It is the necessity of learning to deal with difference and otherness and to forge meaningful collectivities that give the political aspects of this project the capacity to educate students in a globalized world.

Critical education in the 21st century should attend to the new cultural forms associated with globalization and prepare individuals to 'read' narratives and images as part of media, emotional, and technological literacy. Such an effort may empower individuals and groups to analyse and critique the emerging effects of globalization on distance education. The challenge for education today is to promote multiple literacies, use the new technologies in creating a culture and society based on respect for cultural difference, and aim at greater participation of individuals and groups largely excluded from wealth and power in society. How new technologies will be used depends on the overall education of individuals; thus, the rest of education cannot be disassociated from globalization and new technologies. Educators need constantly to devise new decolonizing strategies in which ICT can be used for the advancement of what is ultimately an important educational vision: to create a more just and peaceful world.

References

ARONOWITZ, S. and GIROUX, H. (1985) *Education Under Siege: The Conservative, Liberal, and Radical Debate Over Schooling* (South Hadley, MA: Bergin & Garvey).

BLAKE, N. and STANDISH, P. (2000) Introduction. *Journal of Philosophy of Education*, 34(1), 1–16.

BOLER, M. (1999) *Feeling Power: Emotions and Education* (New York: Routledge).

BOLER, M. (2001) LoveOnLine: educating eros in digital education. Paper presented at the annual meeting of the American Educational Research Association (College of Education, Virginia Polytechnic and State University, Blacksburg, VA).

BOLER, M. and ZEMBYLAS, M. (2003) Discomforting truths: the emotional terrain of understanding difference. In P. P. Tryfonas (ed.), *Pedagogies of Difference: Rethinking Education for Social Change* (New York: RoutledgeFalmer), 110–136.

BRAIDOTTI, R. (1994) *Nomadic Subjects: Embodiment and Sexual Difference in Contemporary Feminist Theory* (New York: Columbia University Press).

BRITZMAN, D. P. (1998) *Lost Subjects, Contested Objects: Toward a Psychoanalytic Inquiry of Learning* (Albany, NY: State University of New York Press).

BRUCE, B. C. (1999) Speaking the unspeakable about 21st century technologies. In G. E. Hawisher and C. L. Selfe (eds), *Passions, Pedagogies, and 21st Century Technologies* (Logan, UT: Utah State University Press), 221–228.

BURBULES, N. C. (1998) Rhetorics of the web: hyperreading and critical literacy. In I. Snyder (ed.), *Page to Screen: Taking Literacy into the Electronic Era* (London: Routledge), 102–122.

BURBULES, N. C. and BERK, R. (1999) Critical thinking and critical pedagogy: relations, differences, and limits. In T. S. Popkewitz and L. Fendler (eds), *Critical Theories in Education: Changing Terrains of Knowledge and Politics* (New York: Routledge), 45–65.

BURBULES, N. C. and CALLISTER, T. A. (2000) Universities in transition: the promise and the challenge of new technologies. *Teachers College Record*, 102(2), 271–293.

BURBULES, N. C. and TORRES, C. A. (eds) (2000) *Globalization and Education: Critical Perspectives* (New York: Routledge).

CASTELLS, M. (1996) *The Rise of the Network Society* (Oxford: Blackwell).

DEIBERT, R. J. (1997) *Parchment, Printing, and Hypermedia: Communication in World Order Transformation* (New York: Columbia University Press).

DELEUZE, G. and GUATTARI, F. (1977) *Anti-Oedipus: Capitalism and Schizophrenia*, trans. R. Hurley, M. Seem and H. R. Lane (New York: Viking Press).

DELEUZE, G. and GUATTARI, F. (1987) *A Thousand Plateaus: Capitalism and Schizophrenia*, trans B. Massumi (Minneapolis, MN: University of Minnesota Press).

DENZIN, N. K. (1995) ICT, communicative acts, and the audience: Couch's legacy to communication research. *Symbolic Interaction*, 18(3), 247–268.

FABOS, B. and YOUNG, M. D. (1999) Telecommunications in the classroom: rhetoric versus reality. *Review of Educational Research*, 69(3), 217–259.

GARRISON, J. (1996) A Deweyan theory of democratic listening. *Educational Theory*, 46(4), 429–451.

GIDDENS, A. (1990) *The Consequences of Modernity* (Cambridge: Polity).

GUR-ZE'EV, I. (2000) Critical education in cyberspace? *Educational Philosophy and Theory*, 32(2), 209–231.

HALL, K. (1996) Cyberfeminism. In S. C. Herring (ed.), *Computer-mediated Communication: Linguistic, Social, and Cross-Cultural Perspectives* (Philadelphia, PA: Benjamins), 147–172.

HAWISHER, G. E. and SELFE, C. L. (2000a) Conclusion: hybrid and transgressive literacy practices on the web. In G. E. Hawisher and C. L. Selfe (eds), *Global Literacies and the World-Wide-Web* (London: Routledge), 277–289.

HAWISHER, G. E. and SELFE, C. L. (2000b) Testing the claims. In G. E. Hawisher and C. L. Selfe (eds), *Global Literacies and the World-Wide-Web* (London: Routledge), 1–18.

HERRING, S. C. (1996) Introduction. In S. C. Herring (ed.), *Computer-mediated Communication: Linguistic, Social, and Cross-Cultural Perspectives* (Philadelphia, PA: Benjamins), 1–10.

KELLNER, D. (1978) Ideology, Marxism, and advanced capitalism. *Socialist Review*, 42 (November–December), 37–65.

KELLNER, D. (1998) Multiple literacies and critical pedagogy in a multicultural society. *Educational Theory*, 48(1), 103–122.

KELLNER, D. (2000) New technologies/new literacies: reconstructing education for the new millennium. *Teaching Education*, 11(3), 245–265.

KELLNER, D. (2002) Theorizing globalization. http://www.gseis.ucla.edu/faculty/kellner/papers/theoryglob.htm (visited 9 September 2003).

KITALONG, K. S. and KITALONG, T. (2000) Complicating the tourist gaze: literacy and the Internet as catalysts for articulating a postcolonial Palauan identity. In G. E. Hawisher and C. L. Selfe (eds), *Global Literacies and the World-Wide-Web* (London: Routledge), 95–113.

LELLIOTT, A., PENDLEBURY, S. and ENSLIN, P. (2000) Promises of access and inclusion: online education in Africa. *Journal of Philosophy of Education*, 34(1), 41–52.

LEVINAS, E. (1987) *Collected Philosophical Papers*, trans. A. Lingis (Dordrecht, The Netherlands: Martinus Nijhoff).

LÉVY, P. (1997) *Collective Intelligence: Mankind's Emerging World in Cyberspace*, trans R. Bononno (New York: Plenum).

McLUHAN, M. (1964) *Understanding Media: The Extensions of Man* (New York: McGraw-Hill).

NEGROPONTE, N. (1995) *Being Digital* (New York: Knopf).

NOBLE, D. D. (1998) The regime of technology in education. In L. E. Beyer and M. W. Apple (eds), *The Curriculum: Problems, Politics, and Possibilities*, 2nd edn (Albany, NY: State University of New York Press), 267–283.

PÓR, G. (1995) The quest for collective intelligence. In K. Gozdz (ed.), *Community Building: Renewing Spirit & Learning in Business* (San Francisco, CA: New Leaders Press), 271–279.

RICE, S. and BURBULES, N. C. (1992) Communicative virtues and educational relations. *Philosophy of Education Society 1992: Proceedings of the Forty-eighth Annual Meeting of the Philosophy of Education Society*. http://www.ed.uiuc.edu/EPS/PES-Yearbook/92_docs/Rice_Burbules.htm (visited 9 September 2003).

ROSSMAN, G. P. (2002) Networking and mobilizing collective intelligence. http://ecole-con.missouri.edu/globalresearch/chapters/2–04.html (visited 9 September 2003).

SELFE, C. L. (1995) Lest we think the revolution is a revolution: images of technology and the nature of change. http://www.cptsc.org/conferences/keynote95.html (visited 9 September 2003).

SLOANE, S. and JOHNSTONE, J. (2000) Reading sideways, backwards, and across: Scottish and American literacy practices and weaving the web. In G. E. Hawisher and C. L. Selfe (eds), *Global Literacies and the World-Wide-Web* (London: Routledge), 154–185.

TURKLE, S. (1995) *Life on the Screen: Identity in the Age of the Internet* (New York: Simon & Schuster).

TURKLE, S. and PAPERT, S. (1990) Epistemological pluralism: styles and voices within the computer culture. *Signs: Journal of Women in Culture and Society*, 16(1), 128–155.

VRASIDAS, C. (2002) A working typology of intentions driving face-to-face and online interaction in a graduate teacher education course. *Journal of Technology and Teacher Education*, 10(2), 273–296.

VRASIDAS, C. and ZEMBYLAS, M. (2003) The nature of cross-cultural technology-mediated communication in globalized distance education. *International Journal of Training and Development*, 7(4), 271–286.

WRESCH, W. (1996) *Disconnected: Haves and Have-nots in the Information Age* (New Brunswick, NJ: Rutgers University Press).

ZEMBYLAS, M. and BOLER, M. (2002) On the spirit of patriotism: challenges of a 'pedagogy of discomfort'. *Teachers College Record On-line*. http://www.tcrecord.org/Content.asp?ContentID = 11007 (visited 9 September 2003).