

Leadership for Social Justice: Bridging the Digital Divide

RAUL E. DEL VAL

Miami-Dade County Public Schools

ANTHONY H. NORMORE

California State University-Dominguez Hills

The purpose of this research paper is to address the issue of the digital divide in the context of leadership for social justice. Current literature indicates that disenfranchised low-income minority students have limited opportunities to prepare for the economic demands of the 21st century (Normore & Blanco, 2006; Hage, 2005; Tansley, 2006). This digital divide concerns equal educational opportunity and equity that have an effect on the development of disadvantaged students in public schools. These students are the ones who do not have access to computer technology outside of their schools. As a result of this digital divide, minority students and the poor living in urban as well as rural areas become less prepared for the increasingly competitive global market in the 21st century. School-based leaders are in unique positions of ethical and social justice leadership to promote digital equity by investing in the integration of computer technology in school curricula.

Recent years have demonstrated a surge of computers and access to the internet in public schools as an integrated effort to infuse information technology into the curriculum. It is estimated that 98% of public schools in the U.S. have computers and internet access (Bull & Bull, 2003; Cattagni & Farris, 2001; Parsad, Jones, & Greene, 2005; Rathbun, West, & Hausken, 2003; U.S. Department of Education, 2000). Yet many researchers have asserted that education continues to reflect a “digital divide” between the information “haves” and “have nots” in society along racial and socio-economic factors that seems to widen as time passes (e.g., Hage 2005; Harrington-Lueker, 2001; Hoffman & Novak, 1999; Judge, Puckett, & Cabuk, 2004; Kaiser Family Foundation, 2004; Tansley, 2006). This digital divide addresses issues concerning equal educational opportunity and equity that have an effect on the development of disadvantaged students in public schools.

Disadvantaged students are usually the ones who do not have access to computer technology outside of their schools, thereby creating a digital divide. As a result of this digital divide, minority students and the poor living in urban and rural areas become less prepared for the increasingly competitive global market that is emerging in the 21st century. Meanwhile, it has been reported that 8 out of the 10 fastest growing occupations are computer-related (Education Reform Network, 2003; U.S. Department of Labor, 2000; Wilhelm, Carmen, & Reynolds, 2002).

With these statistics at the nexus of public school one pervasive issue that needs to be addressed is whether public schools can serve to bridge the widening gap of the digital divide. According to the Education Reform Network (2003), state governments, non-profit agencies, and private enterprises all continue to make significant contributions to meet the changing needs of students and invest considerable time and money to make sure schools have computers for students. Yet

public schools in the U.S. during the last 20 years continue to be faced with the challenge of a widening digital divide. The digital divide is not limited to the U.S.: It is a global phenomenon that encompasses a widening equity gap in primary, secondary, and higher education (Carvin, 2006; Hage, 2005; Layer, 2005; Levy & Murnane, 2004; McGrath, 2004; Picciano, 2006; Tansley, 2006).

This paper explores the conceptual nature of social justice leadership in urban schools as a way of bridging the digital divide in society. Social justice in education is addressed as it pertains to the use of computers and the Internet in urban public schools. While our focus is on urban schools, we do not undermine the continuing issues of the digital divide that exist in rural and suburban schools. The article does not claim to be reporting from empirical research on social justice and the digital divide but, to support its position, draws on recent literature from these ongoing issues. A defining thread of social justice runs through the research on digital divide that resonates with an ethical paradigm as proposed by Shapiro and Stefkovich (2005). It is this thread that provides the overall conceptual link between the different strands of thought. As a corollary purpose, we explore the ethical paradigm of justice, critique, care, profession, and the community. Based on the work by Shapiro and Stefkovich (2005) this paradigm highlights the ethical leadership practices and behaviors in the “best interests of all students”.

Methodology

This article is conceptual in nature, using the findings from an extant review of literature on the digital divide and social justice leadership. A review of literature was conducted on the current state of educational policy and practice as schools address educational goals in the 21st century. Data were gathered from government documents, internet access, Eric Clearinghouse, WebLuis, Lexis-Nexis databases, professional and academic journals, books, and newspaper articles. The acquisition of relevant research in the field of education using keywords such as “equity”, “access”, “public schools”, “computers”, “internet”, and “digital divide” were used as identifiers. Scholarly journals are cited to support the trends reflected in the literature review (i.e., *Educational Technology*, *Journal of Research on Technology in Education*, *Educational Leadership*, *Learning and Leading with Technology*, *Review of Educational Research*). Statistics regarding U.S. trends were obtained via publications from the U.S. Department of Education (2000) and Education Reform Network (2003). This serves only as a beginning study on the impact of computers and the internet on teaching and learning in urban public schools as it pertains to digital equity.

Literature Review

Over the past two decades, educational leadership scholars have made significant contributions to our understanding of social justice (Adams, Bell, & Griffin, 1997; Applebaum, 2004; Bigelow, Christensen, Karp, Miner, & Peterson, 2002; Delpit, 1988; Giroux, 1994; Marshall & Oliva, 2006; Marshall & Ward, 2004). Important conceptual research suggests that a social justice orientation to educational leadership practice and research can address “how institutionalized theories, norms, and practices in schools and society lead to social, economic, and educational inequities” (Dantley & Tillman, 2005, p. 17). In response to a more equitable practice in urban schools, this research explored social justice leadership and the digital divide, which have both garnered increased attention (Education Reform Network, 2003; Marshall & Oliva, 2006).

According to Marshall and Oliva, (2006), finding conceptual inspiration and guidance in notions of equity and equality, researchers and practitioners have begun to develop a pedagogy of leadership based on an ethic of care. Furthermore, they have embraced the moral imperative of improving “practice and student outcomes for minority, economically disadvantaged, female,

gay/lesbian, and other students who have not traditionally served well in schools” (Marshall & Oliva, 2006, p. 6). As a result, the influence of leadership activity on institutional racism, gender discrimination, inequality of opportunity, inequity of educational processes, and justice has gained currency and attention. According to Rawls (2001) each individual has the same infeasible claim to a fully adequate scheme of equal basic liberties, which scheme is compatible with the same scheme of liberties for all; and social and economic inequalities are to be attached to offices and positions open to all under conditions of fair equality of opportunity. He further asserts that these inequalities are to be the greatest benefit of the least-advantaged members of society (p. 291).

The unjust reality of the world has been explained with concepts such as hegemony (Gramsci, 1975), a culture of power (Delpit, 1988), and an interrelationship of cultural inequalities in cultural politics (Giroux, 1994). In order to understand, promote, and enact social justice, school leaders must first develop a heightened and critical awareness of oppression, exclusion, marginalization, and justice. Awareness of social injustices, however, is not sufficient; school leaders must act when they identify inequity. School leaders are not only uniquely positioned to influence equitable educational practices, their proactive involvement is imperative. As Larson and Murtadha (2002) note, “throughout history, creating greater social justice in society and in its institutions has required the commitment of dedicated leaders” (p. 135).

Defining Social Justice Leadership

The discourse of social justice and leadership appears to be inextricably linked. According to Marshall and Oliva (2006, p. 5) social justice “has generated a great deal of scholarship over the last decade” which in essence capitalizes on the relevance of such a discourse. Recent commemorations of the 50th anniversary of the *Brown v. Board of Education* and the 40th anniversary of the *Civil Rights Act* have emphasized how movements for social justice have helped to define American history. These commemorations continue to serve as catalysts to refocus thinking on how school leaders have become social justice advocates and activists. Further, discussions about social justice in the field of education have typically framed the concept of social justice around several issues including race, diversity, marginalization, morality, heterosexism, anti-semitism, ableism, classism, spirituality, and gender (Adams et al., 1997). Dantley and Tillman (2006, p. 17) add age, ability, and sexual orientation to the discourse.

Some research (e.g., Bogotch, 2005, p. 7) asserts that social justice has no one specific meaning. Rather, “its multiple *a posteriori* meanings emerge[d] differently from experiences and contexts”. Bogotch (2005, p. 8) zeros in on a key component of social justice by stating that “social justice, like education, is a deliberate intervention that requires the moral use of power” and concludes that it is “both much more than what we currently call democratic schooling and community education, and much less than what we hold out as the ideals of progressing toward a just and democratic society and a new humanity worldwide”. Furman and Shields (2005, p. 123) argue the “need for social justice to encompass education that is not only just, democratic, emphatic, and optimistic, but also academically excellent” (as cited in Firestone & Riehl, 2005). The notion of social justice is hard to capture. Tillman (2005, p. 261) asserts that “it is demanding, fraught with controversy, and highly contextualized. Most people believe it is important but far fewer take the time or energy to actively pursue it. Thinking about social justice from a theoretical or historical perspective is a necessary but insufficient condition for actually achieving social justice”.

While a review of the literature on social justice leadership does not present a clear definition of social justice, there is a general framework for delineating it. Lee and McKerrow (2005, p. 1) suggest that social justice is defined “not only by what it is but also by what it is not, namely injustice. By seeking justice, we anticipate the ideal. By questioning injustice, we approach it. Integrating both, we achieve it.” These authors further assert that individuals for social justice

seek to challenge political, economic and social structures that privilege some and disadvantage others. They challenge unequal power relationships based on gender, social class, race, ethnicity, religion, disability, sexual orientation, language, and other systems of oppression.

“Haves” and “Have nots”: Technology

Current literature indicates that poor disenfranchised minority students have limited opportunities to prepare for the economic demands of the 21st century (e.g., Freeman, 2005; Welner & Weitzman, 2005). Over twenty years ago researchers at Johns Hopkins University reported that public schools located in the poorer districts were least likely to own microcomputers (Ascher, 1984). The issue 20 years ago was access to information technology. Access meant actually having the physical components of computers (hardware and software) in the classrooms or somewhere in the schools (e.g. media center). Inequalities in gender, social class, and race in relation to equal access to computer technology were predominant in the 1980's. It may seem that 20 years later there are more students than ever before with access to computers in schools; however, this does not mean that the digital divide may be closing as schools have more computers. Equal access to information technology continues to be a struggle for poor and other minority students in the U.S.

There are differences in the ratio of computers to individuals that cut across socioeconomic lines. For example, the ratio of computers to students in schools with a higher percentage of poor students is 1:16. Contrastingly, the ratio in schools with lower percentage of poor students is 1:7 (Cattagni & Farris, 2001; Picciano, 2006). Interestingly, the gender gap in computer access has been closing faster than the gap measured in terms of race and social class (Hoffman & Novak, 1999). The last ten years have indicated that the digital divide between the technology “haves” and “have nots” may actually be increasing (Hoffman & Novak, 1994; Kaiser Family Foundation, 2004). The digital divide is conceptualized in a way that addresses the issue of equity in students' access and successful utilization of computer technology in schools. An assumption is made that education, and specifically public schooling, can assist in “bridging” the digital divide by incorporating high quality integrated learning systems (ILS) into the curricula.

Integrated Learning Systems. Integrated Learning Systems (ILS) are advanced computer-based instructional systems consisting of a set of computerized courseware covering several grade levels, content areas, and complex classroom management and reporting features (Lawson-Martin & Normore, 2005). According to Picciano (2006), ILS is defined as “systems of hardware, software, curriculum, and management components” (p. 102) that become the technology infrastructure of the school. An ILS built on computer technology is a costly endeavor that requires considerable time and money to develop and sustain in schools. Public schools equipped with the appropriate information technology (IT) components of an ILS would then serve all students, particularly the disadvantaged students, by teaching the necessary specialized skills (i.e., use of computers) to compete in a global economy that increasingly relies on IT (Levy & Murnane, 2004).

ILS is part of a new breed of instructional computer programs that utilize recent developments in computer memory, computational speed capabilities, new computer programming languages, and research in human cognition and learning. An ILS is a computer-based learning system designed to help users develop specific skills, such as literacy and mathematical competency (Becker, 1994; Martin & Normore, 2006). Through expert system technology and artificial intelligence, ILS is able to carry on intelligent “dialogues” with students and flexibly adjust to the knowledge and skill level of individuals. It can also provide a variety of methods of representing and accessing information (Mandle & Lesgold, 1988). Some systems are oriented to discovery-learning, while others are more didactic, or “teaching” oriented. For instance, ILS in mathematics education is currently more adaptive to individual students, and better matched with current goals

in mathematics, than earlier computer-assisted instructional tools (Mandle & Lesgold, 1988, p. 26). Key decision makers in schools responsible for introducing ILS into school programs believe that ILS are effective in raising standardized test scores for high and low achievers, older students, and students who have difficulty in learning from traditional classroom-based methods (Brush, 1997). In recent years, many schools have turned to ILS to facilitate instruction and assist with raising state standardized test scores (Becker, 1994; Picciano, 2006; Rathbun, West & Hausken, 2003; U.S. Dept. of Education, 2000; Wilhelm, Carmen, & Reynolds, 2002).

Digital Access and Equity

Current literature examines equity in terms of curriculum content and how students are taught in schools (Gerstl-Pepin & Woodside-Jiron, 2005; McGrath, 2004; Wilhelm, Carmen, & Reynolds, 2002). Research suggests that public schools with higher percentages of poorer students engaged them in “drill and practice” and “tutorial” exercises (repetition and lower level thinking) instead of other applications involving higher order (critical) thinking (Judge, Puckett, & Cabuk, 2004; McGrath, 2004; Picciano, 2006). Digital equity is defined contextually to address fair access to information technology for children. Moreover, the content and use of the hardware and software are crucial to the optimal use of computer technology in teaching and learning. In its IT Blueprint, Miami-Dade County Public Schools, the 4th largest district in the U.S., addresses equity as the “fair and equitable distribution of those resources” in technology (M-DCPS, *IT Blueprint*, 2006, p. 46). In this sense what is equitable is also just (Beckner, 2004).

Technology in the home is another factor that affects the education of students in school (Fairlie & McNulty, 2005; Kaiser Family Foundation, 2004; Wilhelm, Carmen, & Reynolds, 2002). Poorer students are less prepared as they enter schooling and lag behind other students from higher SES groups. The literature suggests that having a home computer may increase the probability that students will graduate high school (Fairlie & McNulty, 2005). It is estimated that 84% of low-income households in inner-city neighborhoods do not have computers (Wilhelm, Carmen, & Reynolds, 2002). About half of Black and Latino children have access to a home computer, compared to 85.5% of White children (Fairlie & McNulty, 2005).

Public schools can serve as the bridge to close the digital divide for students who do not have access to information technology in their homes. The advent of the internet in the mid 1990s increased the capacity of microcomputers to be used as effective tools to help students learn the necessary skills required in a changing job market. At least 98% of public schools are now connected to the internet compared to 35% of public schools in 1994 (Cattagni & Farris, 2001; Lonergan, 2000). This does not mean that students have direct access to computers or the internet in their classrooms. Other studies have suggested that only 15% of classrooms have internet access (Hoffman & Novak, 1999). On the other hand, the ratio of computers to students in the U.S. public schools is averaged at 1:4 (Picciano, 2006). This ratio is considered “reasonable for effective learning” (Cattagni & Farris, 2001; Lonergan, 2000); however, this figure can be misleading as it misrepresents the access to technology experienced by poorer and disadvantaged students. Those who have more access include teachers, administrators, and office personnel in lieu of students.

The Gap in the Digital Divide

Internet access between whites and minorities (Hispanics, Blacks) differ considerably in homes as well as in schools (Cattagni & Farris, 2001; del Val, 2006; Lonergan, 2000; Parsad, Jones, & Greene, 2005). For example, 83% of non-Hispanic Whites had home computers with 50% connected to the internet, compared to 46% of Black with 25% internet access, and 47% Hispanic with 20% internet access; and Asians surpass Whites in having home computers by 2% (Wilhelm, Carmen, & Reynolds, 2002). Other studies cite that 50.6% of Blacks and 48.7% of Latinos,

compared to 74.6% of Whites, have access to computers at home (Fairlie, 2002; Heim, 2006). The ratio of computers with internet access to students remained greater in schools with poorer students than in schools with the lowest concentration of poverty (1:9 compared to 1:6) (Cattagni & Farris, 2001). Other studies show that there was a disparity between children in highest SES groups having more access to computers and the internet than children in lowest SES groups (Lonergan, 2000; Rathbun, West, & Hausken, 2003). At the same time, 90.2% of private college freshman reported using the internet for research, compared to 77.6% of freshman entering black public colleges (Hoffman & Novak, 1999). Subsequently, 80.1% of private college freshman used e-mail, compared to 41.4% of students in black public colleges (Hoffman & Novak, 1999). Although schools can serve as vehicles of digital equity, the gap in the digital divide may begin to widen as early as first grade (Judge, Puckett, & Cabuk, 2004). The literature indicates that the digital divide appears at all levels of schooling.

The digital divide is a term that entered the collective psyche in the 1990's with national and global implications. It describes the inability to access computer technology and the use of the internet by certain segments of society (i.e. the poorest) from participation "in the global information society" (Hage, 2005). The digital divide affects one-sixth of the world's population – approximately 1 billion people. Low income families face added disadvantages because of lack of access to computers in the home (inability to pay for equipment and services). Moreover, public schools in poorer neighborhoods may not adequately provide an effective infrastructure with the tools that students need to learn computer technology outside of their homes. In 2003, the National Center for Education Statistics of the U.S. Department of Education published a report that indicated 93% of instructional rooms in U.S. public schools had internet access (Parsad, Jones, & Greene, 2005). This may have meant that at least teachers may have had at least a personal computer installed in their classrooms. Notwithstanding, the digital divide seems to have increased over time in the U.S. and all around the world along lines demarcated by race and social class (Carvin, 2006; Harrington-Lueker, 2001; Hoffman & Novak, 1999; Judge, Puckett, & Cabuk, 2004; Kaiser Family Foundation, 2004).

Students have a necessity, and some would say a right, to learn the computer skills demanded by the current job market (Levy & Murnane, 2004). At a time when more computers are made available in schools than ever before, the digital divide continues to widen and fewer people in the lowest SES groups are given the opportunity to join the world of computer technology and the internet. This socioeconomic digital divide is a global phenomenon (Bull & Bull, 2003; Carvin, 2006; Fairlie, 2002; Hage, 2005; Heim, 2006). Digital equity is about the "social justice goal" of "equitable access" and "effective use of technology for teaching and learning, access to content that is of high quality and culturally relevant" (Judge, Puckett, & Cabuk, 2004, p. 383).

Increases in government funding at federal and state levels, investments made by the private sector to provide technology resources to public schools, and advances in computer technology have yet to close the digital divide in education (Bull & Bull, 2003; Cattagni & Farris, 2001; Parsad, Jones, & Greene, 2005; Picciano, 2006). For example, ambitious goals were set by the Clinton administration during the 1990s to guarantee "universal access" to computers and the internet at home and in schools. The 1994 Elementary and Secondary Education Act led to the creation of the E-Rate program in 1996. E-Rate provides discounts to public schools in purchasing the equipment and services needed to develop an appropriate technology infrastructure in schools. In 2001, \$5.8 billion was earmarked to E-rate applicants in the U.S. (Cattagni & Farris, 2001). Interestingly, the No Child Left Behind Act (NCLB) of the Bush Administration addresses the achievement gap in general without increasing overall federal funding for education. However, NCLB contains a section called Enhancing Education through Technology (ED Tech) program. ED Tech is geared to improve the use of technology by students

in schools (NCLB, 2001). ED Tech also focuses on teacher training in the use of computer technology in the classroom.

Using Ethical Paradigms to Address the Digital Divide

A theoretical framework for applying ethics using multiple paradigms is suggested here for the purpose of addressing the issue of equity and social justice in the information age of computers. These paradigms consist of the ethics of justice, critique, care, profession (Shapiro & Stefkovich, 2005), and community (Furman, 2004). The ethic of justice highlights the right of equal educational opportunity that is of high quality available to all students (fairness, equity, equality) whereas the ethic of critique examines the current policies and practices that may perpetuate inequalities inherent in public schools (bureaucracy). As changes in policy and practice lead to digital equity in providing equal access to computer technology and its effective use, then disadvantaged students would not be affected by race/ethnicity or SES in learning computer skills in order to succeed in school and (later on) in the work force. The ethic of care ensures that children are put first and education serves the best interest of students. As these paradigms merge, the ethic of the profession acts as a call to action for educational leaders to plan, implement, and sustain efficient and effective ILS in their schools. The ethic of community addresses the greater good for the greatest number in supporting excellence in education and digital equity for all students in public schools.

These paradigms support social justice education – in particular the work of Freire (1970/2003) and Smith-Maddock and Solórzano (2002) who assert that we must engage in problem-posing methodology in order to identify and name inequities, analyze the cause of the inequities, and find solutions. Gillian and Ward (2004) claim that social justice education is a “belief in our own humanity and the power to assert our moral authority in the face of continuing injustice and intolerance” (p. 69). Moreover, information technology integration in public schools must be relevant and meaningful to students (Hung & Seng Koh, 2004; Eberwein, 2005), contain culturally responsive content (Furman & Shields, 2005) and confront digital inequity (Carvin, 2006; Fairlie, 2002).

According to the Education Reform Network (2003) there are several dimensions of digital equity that must be taken into consideration in order to help bridge the divide: content creation (i.e., opportunities for learners and educators to create their own content), effective use (i.e., educators must be skilled in using these resources effectively for teaching and learning), quality content (i.e., access to high quality digital content), cultural relevance (access to high quality, culturally relevant content), and technology resources. The literature pinpoints the importance of curriculum content in the integration of computer technology in schools (ILS – hardware, software, management, wiring, connectivity, etc.). Moreover professional development of teachers to utilize the latest technology in the classroom is crucial to the success of increased student access to computers in schools. Equity incorporates efficient and effective ILS utilization by teachers and students in schools. High quality, culturally relevant ILS in schools can help ensure that students have access to successful experiences as long as teachers keep pace with the acquisition of new knowledge and skills. Pedagogical content knowledge is essential with respect to integrating technology in the classroom effectively.

To address the issues of digital equity, school leaders are in a position to ensure opportunities are made available for all students in schools. Social justice is constructed in relation to experiential knowledge of social injustice. At a time when criticisms are being voiced about the eroding ethics of society, it becomes vital that decisions and actions for 21st century educational leaders be based on ethical and moral foundations. Successful social justice leadership will involve moral choices with an emphasis on sense and meaning, morality, self-sacrifice, duty, and obligation. Recent research reflects a distinct trend emphasizing that effective school leaders advocate for social

justice and maintain an ethical orientation (Bogotch, 2005; Furman & Shields, 2005; Lee & McKerrow, 2005; Normore & Blanco, 2006). According to Jazzar and Algozzine (2007), in order for school and district leaders to be successful in the new millennium, “the pendulum must swing back to values and moral dimension” (p. 155). When moral authority overcomes bureaucratic leadership in a school, the outcomes can be extraordinary for all students. The multiple paradigm approach as outlined by Shapiro and Stefkovich (2005) may help to revolutionize the field of educational leadership to successfully bridge the achievement gap and meet the challenges of the 21st century.

Case of a Middle School in Florida

Florida has the 10th highest poverty rate in the nation and ranks 16th in home internet access (Wilhelm, Carmen, & Reynolds, 2002). Indeed, educational leaders in Florida face significant challenges in changing the way teaching and learning take place in the classrooms. All educational leaders (federal and state government officials, superintendents, principals, assistant principals, and teachers) are given the charge to advocate for and support the integration of technology (computers and multimedia) in public schools. According to Levy and Murname (2004), these leaders are given the charge to address the need for the most vulnerable students (poor, disadvantaged minority groups) to have a “more equal” educational opportunity to learn the skills necessary to be successful in the job market.

For purposes of our argument, and as an example, we now introduce one of the top six largest urban school districts in the United States. The district faces the challenge of developing an appropriate integrated learning system (ILS) and the supporting technology infrastructure to meet the educational needs of its students. The district has a student population of more than 300,000 students. It has a comprehensive information technology (IT) strategic plan conducted by CELT Corporation (Massachusetts). The strategic plan provides a blueprint for the years 2005-2008 (Miami-Dade County Public Schools, 2006). The plan is to help “all students to be fully prepared to succeed as workers, citizens, and leaders” (p. 1). This blueprint is meant to ensure that “all students have access to current, appropriate, and sufficient information resources” (p. 46) among other goals that address the issue of equity in IT to bridge the digital divide. Best-practices research cited in the blueprint emphasizes project-based learning (McGrath, 2004) in helping students gain information literacy skills in its more than 300 schools. The district is moving toward critical mass in infusing information technology to continue to increase access and raise the standards of curriculum content in the use of computers in schools. The district defines critical mass as computer to student ratios of 1:2 in grades K-5, and 1:1 in grades 6-12 (p. 48). E-Rate, ED-Tech, Title I, and other funding sources are utilized to cover the increasing costs in closing the digital divide in the schools. As stated in the district IT Blueprint, “it is important to recognize that in highly effective learning environments, one-to-one student to computer access is often a requirement” (p. 49). The expansion of internet access in schools is a component of its IT plan and implementation district-wide.

One of its average size middle schools (1,500 students) is located in a rural/suburban area of the county. The school has expanded its IT infrastructure significantly in the last decade. It is a Title I school, with more than 70% of the student population eligible for free or reduced lunch. The majority of students are Hispanic-American (57%), with a smaller percentage of African-American (27%), a diminishing number of White-American (14%), and a small percentage of Asian-American (2%) (Miami-Dade County Public Schools, 2005). In 1997 information technology in the school consisted of 11 computers in a small classroom with drill and practice and tutorial software that was then obsolete and hardly used by the students. Today the school is constructing an ILS that currently has more than 500 computers for administrators, staff, faculty,

and students. Technically, the ratio of computers to students is 1:3, although this does not reflect actual student access to computers (personal communication, December, 2006). Most classrooms have at least two computers (one for the teacher's use), and some have up to 4 computers (classroom size average at 30). A couple of classrooms have multiple computers for student use. Furthermore, all counselors, office staff, and administrators have a PC and are on-line. The school has a full-time IT administrator on staff, working under the principal, who has been developing, implementing, and managing the growing ILS in the school for the past several years. Presently there are three computer labs (40 computers per lab) that are regularly used by students for classroom assignments in math, science, language arts, and social studies. Two labs are actual classrooms wired with multiple PCs, and one lab is in the Media Center. Teachers have been offered training courses in computer technology and curriculum content to infuse IT in their lesson plans. Students use the computers in these labs during classroom time on a rotating basis.

Over the years the school has oscillated between a C and a D grade from the state A+ plan (Florida Comprehensive Assessment Test scores - FCAT). The school recently received a B grade. ILS infusion in this school may have been a significant contributing factor in its acquisition of a higher letter grade as a result of improved FCAT scores. It may be true that FCAT scores may not measure all the gains in student learning that has occurred at this school as a result of increasing student access to computer technology. Nevertheless, many students are poor and do not have computers, let alone internet access, at home. These students are having the opportunity to experience working with computers in school that they would otherwise not have at home. The expanding ILS infrastructure in the school is bridging the digital divide in providing students with the acquisition of computer skills that improves their competitive advantage in school and in the future job market.

An adequate infusion of ILS in the school curricula can facilitate the development of skills in students necessary to succeed in the emerging job market of the 21st century. School leaders now have a moral imperative to not only acquire basic IT competency in order to help develop and implement effective ILS in schools, but also to promote the use of new technology to enhance teaching and learning. Schools and school leaders then can become the equalizing agents in providing educational opportunities to their communities and nation that help bridge the digital divide for equal access and equitable opportunity.

Reflections

At first glance it appears that the inundation of computers in public schools, showing an average of 5 students to every computer counted, has provided the sufficient digital equity to close the digital divide. Upon closer observation, recent literature indicates that the digital divide between extreme SES groups, and the divide between Whites and Blacks, may be widening and not closing in the first decade of the 21st century. The problem is home access to computers and the internet by the poorest students outside of public schools. Of course, there are public libraries that can be utilized to use computers and access the internet across America, yet this is not utilized optimally, or may be inadequate for use for a large number of people. A preliminary literature review of this subject indicates that the overall digital divide is widening in some sectors of society and closing in others in spite of the efforts of public schools to close the digital divide in education. Yet time may be the critical factor to reveal the effect of the trend of implementing and sustaining ILS in schools to improve student learning. The lack of ILS in public schools seems to perpetuate social injustice for disadvantaged students. Therefore educational leaders are challenged to act in ways that help bridge the digital divide for students and help them gain the necessary computer skills to be successful and productive members of society. School leaders

require basic knowledge of ILS and state of the art technology infrastructure to develop a vision of what students need to learn.

Developing a strategic plan is essential in addressing issues of digital equity for efficient and effective utilization of information technology in schools (Picciano, 2006). Implementation of a plan requires constant monitoring and feedback. Sustainability of an efficient and effective ILS in schools requires long term planning including added costs for maintenance, service, and upgrade of equipment to keep the infrastructure running smoothly. It is an integrated effort involving all stakeholders in developing a viable system that works. A balance of professional development (teacher training) and state of the art computer technology for student learning will provide stability in the implementation of the curriculum. The answer is not to stop investing in information technology – computers and multimedia equipments installed and utilized in teaching and learning – but to invest more money and time in the strategic planning, implementation, and sustainability of IT in the curricula of public schools.

Information technology may be the essential tools that need to be made accessible to students in public schools to meet the demands of the 21st century. Non-profit and for-profit private enterprises can benefit from investing in the technology infrastructure in public schools to supplement what government is providing. Moreover, closing the digital divide may require additional financial support. For example, Computers for Youth (CFY) has provided 6,000 computers to low-income families in middle schools throughout New York City (Carvin, 2006). Various organizations, such as Hewlett-Packard and Microsoft, are also investing in the development and support of IT in public schools. These types of collaborative ventures are required to meet the challenges of the 21st century for students in public schools. It requires a collective effort – the “village” concept – of all sectors of society to effectively address the challenge posed by the digital divide. This is where the ethic of community culminates in its effort to bring about a more caring and just society in the education of its children. Providing digital equity in public schools can play a vital role in closing the digital divide in the new millennium if ILS and state of the art technology infrastructure infused in schools continues to be a priority for districts across the country. Special attention must be given to the disadvantaged students in schools to ensure their success in school and a job market that demands a skilled labor force in the 21st century.

Given the demographic shift of the U.S. population which is becoming increasingly more diverse, there is a need to look at practices (i.e. the types of discourse, preparation, training, experiences, processes, and structures) that promote the development and support of educational leaders committed to social justice and principles of access and equity. School leaders have a moral obligation to respond to the changing political, moral, and social landscapes in which they live and work. Such a response might involve a curricular focus in their leadership training and preparation on interrelating social justice, democracy, and equity and values so that school leaders can identify practices that explicitly and implicitly deter social progress. Furthermore, there is a need to develop the knowledge base on how to respond to these injustices in school practices. Leaders’ critical engagement in dialogue and reflective practice about social justice, access and equity can be well-informed about a greater, more robust and inclusive form of democratic schooling, and a substantively egalitarian education system.

Educators and policy makers need to focus on the critical need for students to acquire crucial skills and empower them to obtain their basic educational requirements. These leaders need to create ways of developing balanced programs while still meeting the requirements of legislation. In our “new millennium” generation, this amounts to a high school diploma plus some post-secondary educational experience. The desire to achieve the “American Dream” that includes at least a high school diploma is one that often goes unrealized for many marginalized students.

Public schools can serve to prepare students to live better lives in the future, or can serve to hinder their growth and ultimately that of society. By definition, educational leadership also means addressing the issue of the digital divide that can perpetuate social injustice in education.

District leaders and school-site administrators are in unique positions to make a difference in urban and rural public schools. The crisis of the apparent widening of the digital divide can become the opportunity for public schools throughout the nation to answer the call to prepare students to meet the challenges of the new information age. When developing programs for under-represented students, educators at all levels must create ways of developing balanced programs while still meeting the requirements of legislation and simultaneously serving the needs of all students – as in any teaching and leadership intervention.

References

- Adams, M., Bell, L.A., & Griffin, P. (1997). *Teaching for diversity and social justice*. New York: Routledge.
- Applebaum, B. (2004). Social justice education, moral agency, and the subject of resistance. *Educational Theory*, 54(1), 59-72.
- Ascher, C. (1984). *Microcomputers: Equity and quality in education for urban disadvantaged students*. ED242801. New York, NY: Eric Clearinghouse on Urban Education.
- Becker, H.J. (1994). Mindless or mindful use of integrated learning systems. *International Journal of Educational Research*, 21(1), 65-79.
- Beckner, W. (2004). *Ethics for educational leaders*. Boston, MA: Pearson Education, Inc.
- Bigelow, W., Christensen, L., Karp, S., Miner, B., & Peterson, B. (2000). *Rethinking our classroom: Teaching for equity and justice*. Milwaukee, WI: A Rethinking Schools Publication.
- Bogotch, I. E. (2005). Social justice as an educational construct: Problems and possibilities. Paper presented at the annual meeting of the University Council of Educational Administration, Nashville, TN, November.
- Bull, G., & Bull, G. (2003). The digital disconnect: A recent Pew study. *Learning and Leading with Technology*, 31(4), 28-31.
- Brush, T.A. (1997). The effects on student achievement and attitudes when using integrated learning systems with cooperative pairs. *Educational Technology Research and Development*, 45(2), 51-64.
- Carvin, A. (2006, March). *The gap: The digital divide network*. Reed Business Information, p. 70.
- Cattagni, A., & Farris, E. (2001). *Internet access in U.S. public schools and classrooms: 1994-2000* (NCES 2001-071). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Dantley, M.E., & Tillman, L. C. (2006). Social justice and moral transformative leadership. In Marshall, C. & Oliva, M (Eds.), *Leadership for social justice: Making revolutions in education* (pp. 16-30), Pearson Education: Boston, MA.
- Delpit, L. (1988). The silenced dialogue: Power and pedagogy in educating other people's children. *Harvard Education Review*, 58(3), 280-298.

- del Val, R.E. (2006). Book review: Closing the equity gap, edited by Geoff Layer, 2005. *Adult Education Quarterly*, 57(1), 90-91.
- Eberwein, J. (2005, fall). 10 ways to integrate technology in a meaningful way. *FETC Connections*. Florida Educational Technology Corporation, Inc., 2-3.
- Education Reform Network (2003). The five dimensions of digital equity. <http://digitalequity.edreform.net/>
- Fairlie, R., & McNulty, J. (2005, October). Kids with access to home computer more likely to graduate. *AScribe Newswire*. Santa Cruz, CA: University of California.
- Fairlie, R. (2002). *Race and the digital divide*. Chicago, IL: Joint Center for Poverty Research.
- Freeman, E. (2005). No child left behind and the denigration of race. *Equity and Excellence in Education*, 38(3), 190-199.
- Freire, P. (1970/2003). *Pedagogy of the oppressed*. New York: Continuum.
- Furman, G. C. (2004). The ethic of community.. *Journal of Educational Administration*, 42(2), 215-235.
- Furman, G.C., & Shields, C.M. (2005). How can educational leaders promote and support social justice and democratic community in schools? In Firestone, W.A. & Riehl, C. (Eds.), *A new agenda for educational leadership* (pp. 119-137), New York, NY, Teachers College Press.
- Gerstl-Pepin, C.I., & Woodside-Jiron, H. (2005). Tensions between the “science” of reading and a “love of learning”: One high-poverty school’s struggle with NCLB. *Equity and Excellence in Education*, 38(3), 232-241.
- Gillian, C., Ward, J. (2004). Forward. In V. Siddle Walker & J.R. Snarey (Eds.), *Racing moral formation: African American perspectives on care and justice* (pp. ix-xii). New York: Teachers College Press.
- Giroux, H.A. (1994). Teachers, public life and curriculum reform. *Peabody Journal of Education*, 69(3), 35-47.
- Gramsci, A. (1975). *Selections from the prison notebook*. (Q. Hoare & G. N. Smith, Trans. and Edit.). New York: International Publishers.
- Hage, M. (2005, November). *The digital divide continues to hinder development in rural areas*. Food and agriculture organization of the United Nations: Second world summit on the information society, Available: [on-line]: www.fao.org
- Harrington-Lueker, D. (2001, June). New networks, old problems: Technology in urban schools. *Technology in Urban Schools: EWA Special Report*, 2-7. Washington, DC: Education Writers Association.
- Heim, K. (2006, March). Global digital divide grows. *The Seattle Times*, March 21, 3-5, Seattle, WA.
- Hoffman, D. L., & Novak, T. P. (2000). The growing digital divide: Implications for an open research agenda. In Kahin, B. & Brynjolffson, E.,(Eds.), *Understanding the digital economy: Data, tools and research*. Cambridge, MA: MIT Press. Available:[on-line]: <http://ecommerce.vanderbilt.edu/>
- Hung, D., & Seng Koh, T. (2004, March-April). A social-cultural view of information technology integration in school contexts. *Educational Technology*, 48-54.

- Jazzar, M., & Algozzine, R. (2007). *Keys to 21st century educational leadership*. Boston, MA: Pearson Education/Allyn & Bacon.
- Judge, S., Puckett, K., & Cabuk, B. (2004). Digital equity: New findings from the early childhood longitudinal study. *Journal of Research on Technology in Education*, 36(4), 383-396.
- Kaiser Family Foundation (2004, September). Children, the digital divide, and federal policy. *Issue Brief*. 2-4, Washington, DC: Kaiser Family Foundation.
- Kaiser Family Foundation (2004). The digital divide. *Survey Snapshot*, August. Washington, DC: Kaiser Family Foundation. Available:[on-line]: www.kff.org
- Layer, G. (2005). *Closing the equity gap: The impact of widening participation strategies in the UK and the USA*. Leicester, England: National Institute of Adult Continuing Education.
- Martin, R., & Normore, A.H. (2005, April). Effects of cooperative and individual integrated learning system on attitudes and achievement in mathematics. Paper presented at the fifth annual College of Education Research Conference, Miami, Florida, April 26.
- Lee, S. S., & McKerrow, K. (2005). Advancing social justice: Women's work. *Advancing Women in Leadership*, 19, 1-2.
- Levy, F., & Murnane, R. J. (2004). Education and the changing job market. *Educational Leadership*, 62(2), 80-83.
- Lonergan, J. M. (2000). *Internet access and content for urban schools and communities*. New York, NY: Eric Clearinghouse on Urban Education.
- Mandle, H., & Lesgold, A. (1988). *Learning issues for intelligent tutoring systems*. New York, NY: Springer-Verlag.
- Marshall, C., & Oliva, O. (2006), *Leadership for social justice: Making revolutions in education*. Pearson Education: Boston, MA.
- Marshall, C., & Gerstl-Pepin, C. (2005), *Reframing educational politics for social justice*. Allyn & Bacon, Boston, MA.
- Marshall, C., & Ward, M. (2004), "Yes, but...": Educational leaders discuss social Justice, *Journal of School Leadership*, 14(5), 530-563.
- Martin, R.L., & Normore, A.H. (2006, April). Effects of cooperative and individual instructional learning system on attitudes and achievement in mathematics. In M. Cleary, S. Nielson, & M. Plakhotnik (Eds.), *Supporting interdisciplinary inquiry: Proceedings of the Fifth Annual College of Education Conference* (pp. 64-69). Miami, FL: Florida International University.
- McCleary, M.(2006, February). Bridging the digital divide. *The Washington Times*, February 2, A18.
- McGrath, D. (2004). Equity revisited: PBL and the digital divide. *Learning and Leading with Technology*, 32(9), 36-39.
- Miami-Dade County Public Schools (2005). *District and school profiles 2004-2005*. M-DCPS assessment and data analysis, Miami, FL.
- Miami-Dade County Public Schools (2006). *Information technology blueprint*. <http://itblueprint.dadeschools.net/>

- No Child Left Behind Act of 2001, P.L. No. 107-110, 115 Stat. 1425 (2002).
- Normore, A.H. & Blanco, R. (2006, Dec. 20, 2006). Leadership for social justice and morality: Collaborative partnerships, school-linked services and the plight of the poor. *International Electronic Journal for Leadership in Learning*, (10), Special issue. Available [On-line]: <http://www.ucalgary.ca/~iejll/>
- Parsad, B., Jones, J., & Greene, B. (2005). *Internet Access in U.S. Public Schools and Classrooms: 1994-2003* (NCES 2005-015). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Picciano, A.G. (2006). *Educational leadership and planning for technology*, 4th ed.. Upper Saddle River, NJ: Pearson Education, Inc.
- Rathbun, A., West, J., & Hausken, E.G. (2003). *Young children's access to computers in the home and at school in 1999 and 2000* (NCES 2003-03-00). Washington, DC: National Center for Education Statistics.
- Rawls, J. (2001). *Justice as fairness: A restatement*. Cambridge, Mass.: The Belnap Press of Harvard University Press.
- Shapiro, J. P., & Stefkovich, J.A. (2005). *Ethical leadership and decision making in education: Applying theoretical perspectives to complex dilemmas*, 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Smith-Maddock, R., & Solórzano, D.G. (2002). Using critical race theory, Paulo-Freire's problem-posing method, and case study research to confront race and racism in education. *Qualitative Inquiry*, 8(1), 66-84.
- Sutton, R. E. (1991). Equity and computers in the schools: A decade of research. *Review of Educational Research*, 61(4), 475-503.
- Tansley, D. (2006, February). Mind the gap: 2006 will witness the deepening of the digital divide. London, England: *The Financial Times*, February 13, 21
- U.S. Department of Education (2000). *Teacher use of computers and the internet in public schools* (NCES 2000-090). Washington, DC: National Center for Education Statistics.
- U.S. Department of Labor (2000). *2000-2010 employment projections*. Washington, DC: U.S. Bureau of Labor Statistics. Available:[on-line]: www.bls.gov/emp.
- Welner, K.G., & Weitzman, D.Q. (2005). The soft bigotry of low expenditures. *Equity and Excellence in Education*, 38(3), 242-248.
- Wilhelm, T., Carmen, D., & Reynolds, M.(2002, June). Connecting kids to technology: Challenges and opportunities. *Kids Count Snapshot*. Available[online]: <http://www.kidscount.org>.

Raúl E. del Val has been working as a T.R.U.S.T. Counselor in Miami-Dade County Public Schools for ten years. He is a psychotherapist in private practice in South Florida with over twenty five years of experience as a counselor, social worker, and family therapist. Additionally, Mr. del Val is an adjunct instructor at Miami Dade College in the department of Community Education. He also facilitates an on-going support group for parents of children with special

needs in consultation with Parent to Parent of Miami, Inc. A recent graduate of Florida International University with an Educational Specialist degree in Educational Leadership, Mr. del Val is currently researching in the areas of social justice, equity, and the change process in education as well as the socialization of students in urban public schools.

Anthony H. Normore is Associate Professor of Educational Leadership in the Graduate Education Division at the College of Education, California State University-Dominguez Hills in Los Angeles County. A former K-12 teacher, school administrator, and district language implementation specialist, Dr. Normore has conducted keynote addresses for Principal Leadership Academy [Southeastern Consortium for Minorities in Engineering/Education, Houston, TX] and Student Leadership Academy at Ransom Everglades Upper School Division in Miami Florida. He regularly presents at various local, state, provincial, national and international conferences in Canada and United States. His current research focuses on leadership development and preparation in the context of ethics and social justice.