

# An IT-LSCD Model For It Deprivation Among Low-Income Urban High School Students

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## ABSTRACT

This study observed the *Information Technology and Life Skills Career Development* (IT-LSCD) model. IT-LSCD addressed three dilemmas urban high school students faced: 1) The digital divide, 2) Functional electronic illiteracy, and 3) Youth unemployment among underrepresented groups in a thriving technological society. The Information Technology 2000 Computer Training (IT 2000) Project utilized IT-LSCD to integrate technology literacy, personal development, and workforce issues. The research examined IT-LSCD and IT 2000 as matrices for youth development. The 20 participants in the study were low-income, at-risk, predominantly minorities. This research investigated students' perceptions about themselves and their experience with IT-LSCD.

## RÉSUMÉ

Cette étude a observé le modèle du *Information Technology and Life Skills Career Development* (IT-LSCD). IT-LSCD a abordé trois dilemmes des étudiant-e-s des lycées urbains auxquels ils/elles se trouvaient face : 1) la division digitale, 2) l'analphabétisme électronique fonctionnel, et 3) le chômage des jeunes parmi les groupes malreprésentés dans une société technologique prospère. Le *Information Technology 2000 Computer Training Projet* (IT 2000) a utilisé IT-LSCD pour intégrer l'alphabétisation technologique, le développement personnel et des problèmes des travailleurs. La recherche a examiné IT-LSCD et IT 2000 comme des matrices du développement des jeunes. Les 20 participant-e-s de cette étude étaient des gens à faibles revenus, en danger, essentiellement minoritaires. Cette recherche a examiné les perceptions des étudiant-e-s au sujet d'eux-mêmes et de leur expérience avec IT-LSC.

## PROLOGUE

This study examined *information technology* (IT)—conjoining computer and telecommunication technologies—deprivation among low-income high school students. The interdisciplinary examination occurred through an innovative approach confronting that social phenomenon. The researcher, as a participant observer, analyzed the *Information Technology Life Skills Career Development* (IT-LSCD) model because it under girded the Information Technology 2000 Computer Training Project (IT 2000). The University of Wisconsin-Milwaukee School of Information Studies (UWM SOIS) housed IT 2000 on campus and collected research data to understand the sociological construct *youth unemployment* regarding its relationship with the *digital divide* and *functional electronic illiteracy* in a thriving technological society.

*Youth unemployment* referred to the condition of people 16 to 19 years without a job. Adolescent unemployment prevented significant experiences for youth that could transition into imminent work roles during adulthood. A prolonged state of social

marginality increased for youth with society's technological advancement and required expertise in the world of work (Petersen and Jeylan 1994, 39). The *digital divide* referred to the disparity between social, ethnic, racial, and economic sectors of society that were fully enabled online versus those that had been systematically neglected by the online revolution (Irving 2000, 1). According to Larry Irving, the Assistant Secretary for Communications and Information Administrator, the digital divide was "one of the [most] critical economic and civil rights issue of this decade" issue (1). Research revealed that the digital divide resulted from a lack of physical access to technology primarily by low-income minority social groups (Becker and Ravitz 1998, 1; Irving 2000, 1; Schiller 1996, 4).

Andy Carvin argued that access would not solve the digital divide (2001, 3). Looking beyond mere access, electronic illiteracy became the next logical step for investigation. *Functional electronic illiteracy* typified the lack of knowledge and competencies general computer, such as inadequate keyboard skills, unfamiliarity with operating systems and inexperience with word processing (Topping 2001, 3). Literacy included activities (such as reading, writing, and spelling) that were deliverable, supportable, accessible, or assessable through computers or other electronic means rather than via paper (Topping 2001, 3). By comparison, functional electronic illiteracy addressed understanding, training, and knowledge transferable to wealth accumulation for sustainable living (Hixon 2001, 2).

Functional electronic illiteracy resulted from the misapplication of technology contingent upon dominant beliefs in a capitalist social system. The historical specter of misapplication still plagued at-risk youth though society transitioned to an informational and technological era. Castells *End of Millennium* warned of a series of "black holes of informational capitalism" that were areas cut off from the flow of wealth and information in the global economy that refused to confine itself to national borders—as likely to appear in the inner city as in sub-Saharan Africa (Castells 1998, 140). Carol Ann Meares and John F. Sargent stated, "Business, government, and educators should work together to provide K-12 students information on technology careers, rewards, and the education and training necessary to pursue them" (Meares and Sargent 2001, 63).

In a unique academy-community collaborative, CEO Gerard Randall, Jr. (Private Industry Council of Milwaukee County) and Dr. Mohammed Aman (Dean of the University of Wisconsin-Milwaukee School of Information Studies and Interim Dean of the School of Education) selected IT-LSCD as a dual-module matrix for guiding IT 2000. Information technology training formed the first module. The second module comprised life skills exploration and career development instruction. The World Health Organization defined *life skills* as "abilities for adaptive and positive behavior that enabled individuals to deal effectively with the demands and challenges of everyday life" (International Children's Institute 2001, 1).

The field of Sociology characterized at-risk as circumstances with fatalistic consequences. Hixson and Tinzmann defined *at-risk* to include infant mortality, undernourishment, child abuse and neglect, poor health, drug abuse, teenage pregnancy,

crime, violence, and academic underachievement from family, community, social, political, and economic conditions outside the victims' control (Hixson and Tinzmann 1999, 1-2). They described *high-risk urban environments* as poverty-stricken communities with concentrated alcoholism, high rates of illiteracy, chemical dependency, physical abuse, and mental illness (2). Three fundamentally detached constructs, IT, life skills, and career development conjoin as a comprehensive approach to threatening social ills in the IT-LSCD model.

### **The IT-LSCD Model**

IT 2000 architects conceived IT-LSCD as an interdisciplinary knowledge and workforce education delivery system. All IT-LSCD instruction occurred through IT 2000 and introduced high school students to university life. Randall and Aman expected IT 2000 to decrease poverty-related ills among at-risk youth who resided in a high-risk urban environment. The IT-LSCD model provided an intense full semester introduction to information technology, life skills, and career development planning. University administrators, faculty, and staff managed and facilitated the IT module. The IT module introduced operating systems and office professional skills training that comprised word processing, database construction, spreadsheet creation, Web development, and slide show presentations. This component also included file transfer protocol and other Internet related training. This module designed a classroom scenario with practical applications for functioning in a corporate environment.

The primary component of the career development module comprised critical thinking activities, the job interview process, résumé writing, decision-making, interpersonal relationships, team building, product design, etc. Life skills consisted of five core concepts that included self-awareness with empathy, communication in conjunction with interpersonal relationships, decision making for problem solving, creative plus critical thinking, in addition to coping with emotions and stress (International Children's Institute 2001, 1). Life skills categories involved violence, delinquency, depression, suicide, substance abuse, nutrition, hygiene, adolescent pregnancy, common social diseases, etc. (Institute 1). Inroads Wisconsin, Inc., a state career development organization, provided soft skills materials, instructors, and professional guest lecturers as special facilitators.

The IT 2000 pilot began in 1999 and adopted the IT-LSCD model. The pilot spanned three nonconsecutive semesters (June – August, 1999; January – March, 2000; and June – August, 2000). The PIC supplied Workforce Investment Act (WIA) certified high school students with competitive training wages, step-by-step training manuals for hands-on applications, and supplemental materials. The UWM SOIS, funded by the Helen Bader Foundation, hired administrators and personnel, provided training wages for minority students slightly above WIA low-income status, hosted professional networking events, and supplied state-of-the-art technology labs. The UWM Information and Media Technology Division (I&MT) conducted pre- and posttests based on the IT-LSCD model. The UWM provided institutional support and encouraged opportunities for IT 2000 graduates to pursue post-secondary education. The Office of the Chancellor provided a

Certificate of Admission to the UWM for each project graduate, redeemable upon successful completion of high school.

### University Setting Versus School Environment

IT 2000 project leaders contended that confronting the IT deprivation among youth required a new commitment from social activists as a matter of collective consciousness. Thus, the conjoining of resources between PIC, the premier Workforce Development Board in Southeastern Wisconsin, and the UWM SOIS to develop a youth work-related project with IT-LSCD underpinnings. Randall and Aman deemed it beneficial to conduct the project on an urban university campus rather than in the Milwaukee Public School system (MPS). They considered that an opportunity for increased minority enrollment at the UWM as IT 2000 students acclimated to the campus. For example, a 1999 IT 2000 completer enrolled in the UWM School of Business' Management Information Systems program during 2000. In January 2001, she became a junior instructor in the IT 2000 project.

Also, university resources outweighed the more limited resources of the MPS. UWM SOIS maintained state-of-the-art IT labs with the most recent types of software applications. IT 2000 students received instruction in well-equipped classrooms. By comparison, the public school infrastructure and buildings were considerably antiquated. The academy provided a larger personnel pool than the public school system. In addition, the university provided access to extended learning and personal opportunities unavailable at the secondary level. That included academic library, research tools, employment opportunities, college scholarships, etc. IT 2000 students received identification badges that allowed them full access to all age appropriate activities on the university campus.

Hixon acknowledged the multitude of efforts, knowledge, examples of solutions, and students involved in the at-risk debate (1-2). However, the problem was framed incorrectly which resulted in looking for solutions in wrong directions. According to Hixon, this occurred because of four erroneous assumptions:

1. The '*It's always been done that way*' syndrome.
2. Schools organization and teacher practice worked before and was good enough for 'us.'
3. Performance pattern changes traced to transformations in student, family, and community characteristics that schools now serve.
4. Statistical analysis (or personal assumptions) provided information necessary to plan needed solutions. (1-2)

While each embodied a grain of truth, overall the results indicated the wrong paths were taken. Reframing how the problem was viewed could reverse that trend. Hixon argued that students were not 'at risk' but placed at risk by adults (2). Additionally, building on student strengths (e.g., knowledge, experiences, skills, talents, interests, etc.) rather than "focusing on remediating real or presumed deficiencies" was the solution. It was the "quality of the complete school experience, rather than the characteristics of the students,

that determined success or failure—both theirs and ours. The two can never be separated,” added (2)

A more appropriate description of the ‘at risk’ phenomenon suggested students were placed ‘at risk’ when they experienced a significant mismatch between their circumstances and needs, and the capacity or willingness of the school to accept, accommodate, and respond to them in a manner that supported and enabled their maximum social, emotional, and intellectual growth and development (Hixon 2). Hixon argued that as the degree of mismatch increased, so did the likelihood of failure to either complete elementary and secondary education, or more importantly, to benefit from it in a manner that ensured they had the knowledge, skills, and dispositions necessary to be successful in the next stage of their lives—that is, to successfully pursue post-secondary education, training, or meaningful employment and to participate in, and contribute to, the social, economic, and political life of their community and society as a whole (2).

## **Procedures**

Though popular methods of evaluation ensued the pilot phase (i.e. mass media tributes and rising public interest), assessing project efficacy through research methods did not occur. Subsequently, this study sought to ascertain project efficacy. The concern was that the influx of new technology widened social divisions according to socioeconomic status and geographic location (Perelman 1998, 160). Low-income learners needed, in addition to technology access, the skills to use tools for information retrieval, manipulation, and knowledge production that increased effectiveness and efficiency in the workplace, home, and community. The ability for poor urban minority students to fully participate in the emerging electronic economy and information-driven job market was at stake (Castells 1997, 352; Irving 2000, 1). Therefore, this case provided a framework for determining whether project recipients perceived benefits from participation that impacted their lives. Theoretically, should recipients evaluate the model and the project favorably, leaders could conclude feasibility for reproduction.

## **Methods**

This inquiry was an interdisciplinary endeavor conjoining information science, urban education, and sociology approaches to understand information affairs at a cognitive, cultural and intellectual level. The theoretical framework examined how at-risk, low-income high school students viewed information technology, career development, the IT-LSCD model, and the IT 2000 project. The study also inquired about how students perceived training on a university campus. Additionally, the researcher questioned how the interviewees perceived themselves before and after their IT 2000 experience, particularly regarding themselves in the workforce.

This evaluation was a case study of a single bounded unit within the IT-LSCD taxonomy that identified categories and constructs for future evaluative research. Gender inequity emerged during this study as a vastly important category. However, gender composition and issues were significant enough to warrant a separate study. The current

study was imperative because it analyzed the IT-LSCD taxonomy and IT 2000 project efficacy. The purpose was to determine whether IT 2000 was adaptable for other urban communities.

## **PROCEDURES**

Two IT 2000 Coordinators visited high schools to recruit potential enrollees. From the recruits, Step-Up Coordinators at respective schools certified qualifying students as workforce development trainees based on income, school records, and counselors' recommendations. Enrollees consisted of predominantly African Americans, Native Americans, Hispanic, and Asian Americans. The female to male ratio of enrollees was five to one. Participants' ages ranged from 16 (by end of the project semester) through 19 years. Socioeconomic status comprised low-income Temporary Assistance for Needy Infants and Families (TANIF) students of non-white and white ancestry.

A staff of eighteen IT instructors, and nine LSCD classroom facilitators provided knowledge education for twelve consecutive Saturdays. The IT 2000 instructor composition comprised five white males, three minority males, six minority females, and two white females. The LSCD team comprised all minorities, seven females and two males. The researcher facilitated twelve group discussions during staff meetings between IT instructors, observed videotapes of classroom sessions, and interviewed two LSCD facilitators, and four recruitment coordinators.

IT 2000 project participants represented twelve Milwaukee Public Schools, two parochial schools, and two alternative establishments. The project also served exceptional education students with mental and physical challenges proportional to the MPS enrollment in the project. The completion class numbered 157 students. The study comprised a sample of twenty high school students from the pool of completers.

## **Data Collection and Analysis**

Demonstrating an understanding of the case was the principal consideration in analyzing data according to the perceptions of urban high school students. Data collection occurred through semi-structured pre- and post-project interviews. Coded identification numbers on interview instruments ensured confidentiality of interviewees. The participants, parents, and researchers mutually agreed to the interview protocol. Field and reflexive notes, videotapes, supporting documents, and notations received coding and tracking numbers. Data analysis identified emerging themes or categories simultaneously with the collection process and incorporated them into the research findings and implications. For example, the gender gap between the number of females and males enrolled raised recruitment issues about gender parity versus reverse equity.

A case record comprised major information, used to make the case analysis and case study that organized the data into a comprehensive primary resource package. Information editing excluded redundancies, rearranged sections, and topically organized the case record in database form for ready access. The data analysis comprised 1)

creating categories, 2) data organizing, 3) identifying themes and patterns, 4) reviewing emergent categories against what was known, 5) searching for alternative explanations of the data, and 6) reporting results.

### **Difficulties of the Study**

Triangulation was a technique to establish credibility since the research participant-observer was also an IT 2000 project coordinator. Transferability of findings depended on profuse description. An inquiry audit—a process examining raw data, data reduction products, and the process for verifying research steps achieved dependability and confirmability. However, the researcher could not control the nature of the partnership governing IT 2000 that may have introduced extraneous artifacts. Researcher bias could have been a factor since the participant observer was an IT 2000 coordinator. Also, the small sample size affected full consideration of the IT 2000 project for replication in other urban environments though the findings were encouraging.

### **FINDINGS AND IMPLICATIONS**

The IT-LSCD approach to confronting the impact of the digital divide and functional electronic illiteracy on urban youth unemployment had broad implications for the IT 2000 project. Providing access to technology for low-income students was important because new technologies potentially influenced the distribution of economic resources and the social organization of society. Overall, at-risk students in urban high-risk environments perceived a strong connection between the model, their training in IT 2000, and an increased quality of life. This implied that IT 2000 creators' consideration of IT-LSCD as essential to students' plans for future success was somewhat defensible.

However, IT training projects without appropriate life skills and career development instruction in general elicited concern. This implied that the LSCD module promoting students' plans for postsecondary education balanced the IT module that circumvented aspirations toward higher education. The students considered functional electronic literacy essential to finding and keeping a job in a technological society. They also thought about how technology influenced their day-to-day living. The students expected technology to integrate more fully into their lives and communities over time. They did not anticipate its immediate entrenchment in high-risk urban environments.

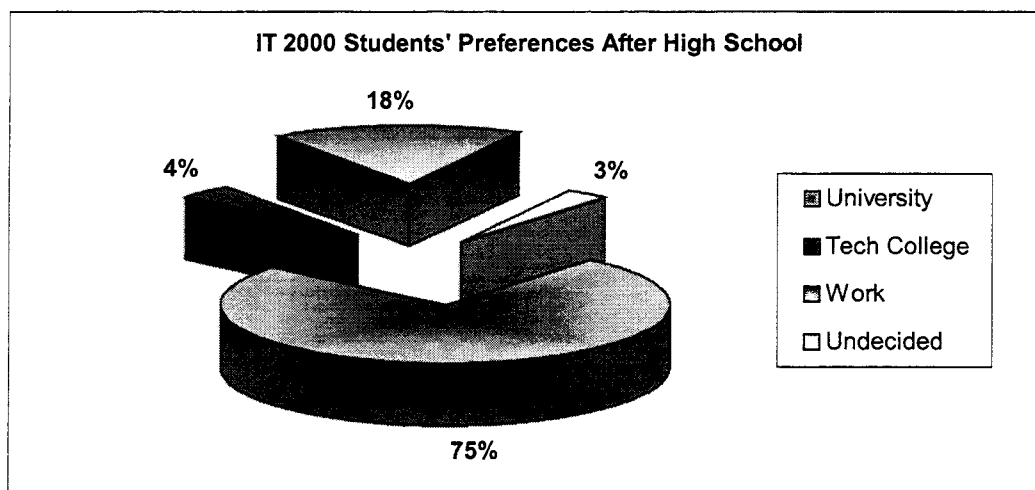
Students' understanding about how the vulnerability of the job market could impact them during downward fluctuations in the marketplace complimented IT skills attainment. The implication was that job readiness required educational experiences transferable across fields when faced with the threat of extraordinary IT salaries directly out of high school. As such, segregated training did not replace the need for students to develop long-range career plans for the general world of work.

Also, the short-term timeframe for training using the IT-LSCD model was not effective for some IT 2000 students. This could potentially influence project retention rates. It also implied a need for reallocated resources that extended training time and

supplemental resources such as tutoring specialists. Additionally, more than 95% of study participants perceived themselves with limited or no access to the job market and the electronic marketplace before their IT 2000 experience. After IT 2000 training, study participants thought completing the project provided a “first step” toward reaching their career goals and being a vital member of the workforce.

The IT-LSCD model proved crucial to students’ perceived success of the IT 2000 project. It addressed access inequity, functional illiteracy, and youth unemployment in a competitive technological society. The digital divide emerged from scholarship as a critical concern (Irving 1, Perelman 160, Petrilli 1-10, Schiller 3). However, functional electronic illiteracy was a more significant concern than access. Physical technology infrastructure, computers, peripherals, and software could not produce electronic literacy. However, access was a major focus of research because it was easier to numerically monitor, measure, and confront the digital divide with a quick yet substantial monetary fix.

All study participants considered training in a university setting rather than another location advantageous. However, nearly 75% of them thought the university had an intimidating environment for minorities before their IT 2000 experience. About 80% of interviewees viewed the university as more friendly than anticipated after completing the project. Most of the students considered UWM in their top three choices for postsecondary education. Though some students elected technical college, more of them preferred employment directly after high school. However, a small number of students remained undecided about their future.



**Figure 1. IT 2000 Student's Preferences After High School**

Several loci of interests for additional research emerged during this study. Considerations included examining local business attitudes and hiring practices regarding IT 2000 completers. The purpose would be to investigate diversity issues in the IT 2000 project and job search experiences for completers. Other research could ascertain the types of jobs completers secured and how that employment relates to their IT 2000



experience and the IT-LSCD model. The purpose would be determining where project completers are find work. All of these issues and others could assist IT 2000 creators in evaluating the project and improving the IT-LSCD model.

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