The W.E.B. Dubois (Doo Boys) Learning Center (DLC) has provided academic tutoring services to elementary and secondary minority students in the metropolitan Kansas City area for 25 years. Students in the Reading, Math, and Science programs are much better off today than they were at their initial registration. The DLC is unique in that struggling students become competent and competent students become proficient. At the same time, ALL students are exposed to black professional men and women, such as doctors, lawyers, engineers, architects, scientists, mathematicians, etc., all of whom provide these disadvantaged and under privileged inner-city youths with POSITIVE role models. Thus, the DLC has a very positive image in the community.

With the recent addition of a Computer Science department, the DLC has begun to make the transition to a computer-technology-driven institution in the 21st Century. The DLC is now prepared to address several problems existing in the community for individuals AND businesses:

- Computer illiteracy in elderly, disadvantaged, and minority homes;
- Shortage of qualified computer technology workers for most companies;
- Little or no access to the Internet for minority businesses, students, and the elderly;
- Lack of jobs for inner-city residents (students and adults);
- Few alternatives for inner-city minority youths to resist gang and drug related activity.

With Sprint's help, the DLC can begin to solve these problems.

Remote Access

The United States department of HUD is looking for answers to solving the problem of under-developed areas being locked out of the information age. Exposure is important to understanding today's technology. They believe that providing computer equipment and access to the Internet at HUD-OWNED and/or HUD-ADMINISTERED facilities, like housing projects, orphans homes, elderly homes, etc. will help to move welfare recipients to employment, improve the quality of life for the elderly, and prepare today's youth for tomorrow's workplace. They also understand that the time commitment and expertise to successfully accomplish these ambitious goals are limited. Computer savvy individuals are at a premium in today's work force. Equipment and administrative costs can be high. To help achieve these goals, the Center would like to provide Servers that can be centrally maintained and administered, thus cutting significantly the amount of expertise and equipment required by supporting multiple sites. At these sites, a simple viewing-station with minimal configuration required (Net Station) would be used as an information access point. This information access point would allow the Center, as a central hub, to be the resource center for such services as:

1. Distance Learning - By using The Center's maintained Servers and data connections to these remote sites, the DLC can extend it's tutorial coverage to the Net Stations at those sites by using streaming technology to broadcast classroom instruction

2. Internet Resources - Net Stations will enable remote access units to tap into the Internet which will allow the end-user to send and receive e-mail, participate in electronic commerce, gather information for conducting academic or commercial research, etc.

3. Computer Training - Through the Net Stations, the Center can provide on-line training in Microsoft Office, Windows 95, basic computer operations, etc.

4. Video Conferencing – Net Stations will allow the users to collaborate with individuals throughout the community and country. Youths can link up with others in different regions of the country to share projects, information, points of view, etc.

Equipment List:

Equipment required to establish the capabilities mentioned depends upon the number of Net stations and the number sites to be connected. Each site needs a data circuit capable of supporting that site's traffic. It is anticipated that these circuits would initially be provided using ISDN circuits. Future trends would be to replace these circuits with the ION technology provided by Sprint. Typical sites would have a room of 5-10 Net Stations connected on an Ethernet LAN.

Assuming the Center would support connections to 25 remote sites, the following equipment would be needed by the DuBois Learning Center.

1. T1 access to the Internet. An Internet class C address space to handle IP addressing for servers, student workstations, and remote location IP addressing needs.

2. Two T1 lines, each capable of handling 24 ISDN circuits are desired. Combining these with a PRI interface will allow the Center to channelize the individual circuits and provide expansion capabilities for future growth. It is anticipated that the ION technology would be used in place of ISDN lines when available.

3. Network equipment to provide call setup and teardown of the data circuits.

4. Servers utilizing Microsoft Terminal Server and the Citrix MetaFrame ICA protocol to control these Net Stations. This type of setup would eliminate the need to have technical resources at each remote site and concentrate limited technical expertise at the Center.

5. Using the number 25, sites with 5-10 computers at each site would provide connectivity for 125 to 250 Net Stations. It is recommended that the minimum monitor size be 17". The total Net Station cost is on the average of one thousand dollars per seat.

Hardware

Servers

Mixture of Unix and NT servers to provide:

1. Rack Mount
2. SMP Capable
3. Raid Storages

Information savvy users are required for toady's work force and market place. The DLC is positioned to help fill the market place shortages from a non-traditional labor pool, and we have established the foundation to provide an Information-driven education to our patrons.

The following equipment will provide the NT Networking environment

	Hardware	Operating Systems	Cost
2	ALR 1xSMP Rack	NT 4.0 Server	10k – 20k
2	ALR 4xSMP Rack Mount Servers 1 GB Ram 40 GB Raid 5 Disk Storage	Windows Terminal Server Citrix MetaFrame	50 - 100k
40	Net Stations Multi-Media	Windows NT Workstation	75 – 100k
1	High Throughput Network Hub		25k – 75k
12	CDDI or FDDI or ATM or GiagaEthernet Ports	Server Ports	10k – 40k
24	Fast Ethernet ports	Power User Ports	5k - 10k
72	Switch Ethernet Ports	Typical Workstation	10k –20k

Art / Computer Graphics / Multi-Media

Previous donations have allowed us to establish art classes where students are allowed to develop their abilities using computer hardware and software. Our staff includes a recent graduate of the UMKC Conservatory of Art versed in Computer graphics.

Currently we have the following hardware and software:

	Hardware	Software
1	NEC 166mhz Multi-Media PC	Adobe Photo Shop
1	HP 233mhz Multi-Media PC	Adobe Illustrator
2	Watcom Drawing Tablets	
1	PC Video Cards	
1	Scanners	
1	Digital Camera	

DLC is staffed to handle an Art class of 9 students. Acquiring the equipment listed below will allow us to provide quality instructions to students. The equipment listed below will allow us to maximize staff resources.

	Hardware	Software
7	Watcom Drawing Tablets	Adobe Photo Shop
7	P233 Multi-Media Computers	Adobe Illustrator
9	19" SVGA Monitors	
4	PC Video Cards	
2	Scanners	
1	Digital Video Camera	

Computer Science

The goal of the computer science program is to introduce students to the world of computer science by utilizing self-paced, user-friendly software and computer literate instructors.

Structure

The program parallels the mathematics program in that it offers a series of courses that build upon each other. There are three specific levels for the computer science program. The first and second level courses will be implemented immediately after obtaining the equipment. The third level will be developed and implemented within 18 months of the start of the first and second level course.

Beginners/Introductory Level 1- will teach students the fundamentals of MS-DOS, the use of peripherals and basic word processing. The course lectures will familiarize students to computer jargon and explore the evolution of computers.

Intermediate Level 2 - will teach students the fundamentals of the four basic computer applications: Data Base Management, Spreadsheets, Word Processing and Communications. The course also teaches students how to use desktop publishing, group project publishing and how to create documents with data-driven graphics.

Advanced Level 3 - will teach students the fundamentals of Basic and various programming languages i.e., (Assembler, Fortran, C, etc.) The objective of this course is to present material on the college level.

Various Kansas City Businesses (AlliedSignal, HealthNet, Sprint) and individuals have donated equipment that our current classes use. Listed is the current equipment:

	Hardware		Operating Systems
1	P90		Linux 5.1
1		486-100	NT Server 4.0
3	486-25		Windows 95
4	486-33		Windows 95
3	486-66		Windows 95
1	P60		Windows 95
2	P90		Windows 95

DLC is staffed to handle 2 classrooms of 12 students each. Multi-media capabilities will allow instructors to take advantage of Computer Based Training (CBT). CBT consists of self-paced learning using modern software and hardware. The equipment listed below will allow us to maximize staff resources.

	Hardware	Operating Systems
2	Rack Mount Intel Based Server	Linux 5.2
3	Rack Mount Intel Based Server	NT Server 4.0
1	P233 Multi-Media Computers	Solaris 7 x86
2		
1	Net Stations Multi-Media Capable	Windows NT
2		Workstation
2	17" SVGA Monitors	Windows NT
4		Workstation
1	Rack Mount Intel Based Servers	Windows Terminal Server
		Citrix MetaFrame

English Program Expansion via Computer Science

Program Objectives

The goal of the computer-aided English Program is to expand our current English program by focusing on the following areas using self-paced, interactive, user-friendly software.

> Dialectical (language) problems of the Black Child. This program will be rare in that it helps youngsters overcome non-standard English usage.
>
> Standard English Acquisition - Helping students to understand speaking and writing Standard English. The program specifically addresses Standard English usage, grammar, and vocabulary development as they relate to oral and written skills. The ability to communicate in Standard English is the foundation for all learning. Those students lacking in Standard English proficiency will have difficulty in reading, writing, and spelling skills.
>
> Social Studies Enhancement - An instructional program that uses social studies as a model. The reading program is useful for enhancing African American Heritage. It is useful for teaching dates, events, famous people, terms, and imparting information in any area where students need to learn Computer Science

Currently the DLC has not implemented this program due to the lack of equipment and software. The DLC does have a Reading program implemented, which serves over seventy-five kids with 7 instructors weekly. Multi-Media equipment would allow a more efficient use of class time by allowing self-paced learning using CBT's.

Implementing Net Stations will allow DLC to cost effectively obtain the equipment to provide these capabilities.

	Hardware	Software
2	Net Stations Multi-Media	Windows NT Workstation
1	HP 233mhz Multi-Media PC	Windows Terminal Server
2	17' Monitors	
5		
1	ALR 4xSMP Rack Mount Server	Windows Terminal Server Citrix MetaFrame

ISP Capabilities

The DLC's goal is to become an ISP for the disadvantaged in the Kansas City community. The Center is not looking to be THE on-line access point for the community. It is anticipated the community will use other service providers to gain access to the Internet from their homes. The Center feels that it can provide the following capabilities in the following areas:

1. Domain Services

Currently the DLC provides as a service to the KC African American community the capability to register and supply unique domain names. Through donations from HealthNet we have configured a primary and secondary name server. Our current equipment consists of:

	Hardware	Operating Systems
2	P90 Mini-Tower Computer	Linux 5.2

In order to increase reliability and capacity, the following equipment is desired.

	Hardware	Operating Systems
2	P200 Rack Mount Server	Solaris 7 x86

2. Hosting Web Sites

Currently the DLC provides as a service to the KC African American community the ability to obtain and register unique domain names. Through donations, we have configured three (3) Web Servers. Our current equipment consists of:

	Hardware	Operating Systems
2	P90 Mini-Tower Computer	Linux 5.2
1	SGI Indigo	IRIS 5.3

In order to increase reliability and capacity, the following equipment is desired.

	Hardware	Operating Systems
2	P200 Rack Mount Server	Solaris 7 x86
2	SGI Origin Server	IRIS 6.2

Our goal is to strengthen the foundation and grow into a World Class Training Center for Kansas City's disadvantaged and under-privileged youths, young adults, and the elderly.