High Technology in Legal Education at Suffolk University

An Interactive Qualifying Project Report
submitted to the Faculty of
WORCESTER POLYTECHNIC INSTITUTE
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by

Todd Blain

Marc Bullio

Dan Tromp

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Approved:
Professor Fabio Carrera , Major Advisor
Professor James P. Hanlan, Co-Advisor

Abstract

This project involved the study of educational technology at Suffolk University Law School (SULS). Research was done through the cataloging of existing hardware and through interviews of students, faculty, and key administrators. SULS is one of the nation's most technologically advanced law schools. In order for SULS' to remain on the leading edge of technology in legal education, a three-phase recommendation plan was proposed. This plan made recommendations for short-term improvements, mid-range projects, and long-term undertakings relating to the use of technology.

Executive Summary

This project was intended to help strengthen the relationship between Worcester Polytechnic Institute (WPI) and Suffolk University Law School (SULS) by evaluating the ongoing WPI-SULS Agreement, studying the use of technology at SULS, identifying possible improvements with technology, and proposing possible future projects between WPI and SULS.

Suffolk University Law School is a part of Suffolk University, which was founded in 1906. The Suffolk campus is located in the Beacon Hill area of Boston, Massachusetts. Suffolk University Law School offers a variety of programs for students, including concentrations in High Technology Law, Health and Biomedical Law, Financial Services and Civil Litigation as well as a variety of Clinical Legal Internship programs. In September of 1999, Suffolk University opened the doors of its newest building, David J. Sargent Hall; a $70 million effort resulting in the nations most technologically advanced law school. The variety of technology available in the building includes a courtroom that is equipped with digital cameras, plasma screen monitors, and a witness stand with elevator floor. Throughout the building, there are over 2800 nodes to connect a laptop to both a power source and an Ethernet connection. The classrooms are equipped with digital overhead projectors, touch screen control pads, and surround sound speakers for multi-media presentations. After putting all this technology into place, Suffolk University Law School needed a means to evaluate to what extent the technology was being used. Knowing of Worcester Polytechnic Institute's reputation for producing

technically proficient engineers and an existing admissions agreement between the two schools, Suffolk tasked three WPI undergraduate students with the evaluation of the law school's use of technology.

In order to begin our research, we first needed to familiarize ourselves with the United States legal system and how the law is commonly practiced. This was done to ensure that we had a clear picture of how technology can be used in the legal profession. To better understand how Suffolk University Law School's technology functions, we researched technology in education and how it is used in legal education. We looked at both the use of technology in the courtroom and outside of the courtroom through an attorney's preparation of a case. There are some U.S. courts that provide for multimedia presentations, while others are more traditionally equipped with an easel and chalk. We intended our recommendations to push just beyond the envelope of the technology being used today.

Worcester Polytechnic Institute and Suffolk University Law School have an admissions agreement, which will admit an applying WPI graduate pending certain conditions. These conditions include maintaining a 3.25 GPA and achieving a score in the top 25th percentile on the LSAT exam. Upon graduation from the WPI undergraduate program, and fulfillment of previously the stated conditions, the student is guaranteed admittance to Suffolk. This agreement is unique to Suffolk in that you cannot find a guarantee of admittance to a law school, pending certain conditions, elsewhere.

One of our goals was to evaluate the admissions agreement and strengthen the relationship between the Suffolk University Law School (SULS) and Worcester Polytechnic Institute (WPI). The strengthening of the relationship would be dependant

on the quality of the work done for SULS. To investigate the agreement we performed a student survey.

In the earliest part of this project, we surveyed WPI students to calculate, among other things, their knowledge of the existing agreement. We determined that only 2% of the WPI student body was aware that an admissions agreement exists between the two schools. This was what we expected. Many students at WPI focus solely on traditional applications of engineering and/or technical degrees. Few students are interested in any degrees separate from engineering or the sciences.

The next area of research needed was documentation and a catalog of existing technology at Suffolk Law. We created a database that can be linked to the school's web page. This allowed us to make suggestions on a room-by-room basis that grouped similarly equipped rooms together. After completing the database, we could now begin to start new research.

We began by gathering information via one-on-one interviews of the SULS department heads, knowledgeable staff, and employees with expertise in the areas of the building where we will be working. From this, we obtained information on where we worked and what each department was responsible for. This also gave us a quick overview of the workings of Sargent Hall.

Next we conducted Suffolk student surveys to solicit the students' opinions on the current technology in Sargent Hall. These surveys were conducted over four days and nights in common areas to obtain a diverse sample of day and night students. Questions asked ranged from classroom laptop use to network preference. All of the answers were entered into a database and the open-ended questions were coded and correlated. From

this database, MS Excel files were formed and tables and charts were created to visually show our data.

Another method of gathering information was classroom observation. We observed fourteen different classes to view how teachers and students used the technology in the classroom. The sample was selected controlled by the professor's number of years teaching and the subject matter of the course. This was done to ensure a well-rounded sampling.

The final method we used was a series of semi-structured interviews of SULS faculty members. The goal of interviewing SULS' faculty was to find out what areas of technology the professors used in the classroom, why they use certain technologies, and what opportunities for other utilization exist. The analysis consisted of coding and analyzing responses for patterns.

After all of the data was collected we began to analyze it and draw conclusions and form recommendations. The first recommendation we make comes from the student surveys. Approximately 20% of the students surveyed stated that the wanted more network connections in the cafeteria. We also suggested there be email terminals in the common areas so that computer lab space is not occupied for email purposes.

Mid-range projects came from professor and staff interviews. Many of the professors interviewed stated that they would like more training on the technology available to them, but did not have the time during the school year to learn a new software program. Our solution was to offer workshops throughout the year. Starting with a summer seminar, the added training would allow more faculty to attend and have time to become familiar with using technology to supplement their teaching methods.

The long-term undertakings came more from ideas prompted by all of the data collection methods employed since we have been at SULS. The most urgent long-term suggestion we had was to create an Academic Technology Department. The Academic Technology Department would be in charge of overseeing technology at SULS and the training of faculty and staff. Many of the previous suggestions would fall into the domain of this department. This department would employ at least two full-time positions along with the director and possibly a part-time intern.

We recommended instituting a policy to implement a school wide upgrade plan. This plan would include each department submitting an annual report that contains an explanation of exactly what hardware and software is currently in that department. The Academic Technology Department would then set up a plan to insure that nothing becomes outdated.

In conclusion, Suffolk University Law School is a technologically advanced law school that is dedicated to providing the best education possible to its students. In order to stay technologically advanced, they must constantly push themselves to find new ways to integrate technology into education.

Acknowledgements

We would like to thank everyone at SULS, faculty and students alike. The time and patience that everyone had with us was greatly appreciated. We would also like to make a special thank you to all the professors and department heads that gave us time for the interview. Their input and ideas were a big help.

We would also like to wish a very special thank you to Gina Doherty and everyone in Computer Service, to Jim Barrett and everyone working in the library and web, and to George Comeau and everyone in Media Services. They were all more help than we could imagine.

We would like to thank our WPI advisors, Prof. James Hanlan and Prof. Fabio Carrera. We could not have done as well as we did without their ideas and suggestion.

Finally the biggest thank you to our project liaison, Dean John Deliso. The time and patience he showed us is much appreciated, not to mention, all his ideas and suggestions that were so helpful in the development of our project. For everything he gave us, THANK YOU.

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Authorship Page

Todd Blain, Marc Bullio, and Dan Tromp completed this project as a group effort. Even though we all worked evenly on this project, we each had our own tasks in completing this project. Todd Blain worked with Computer Services and organized most of the project. Marc Bullio worked with the Library/ Web and concentrated on the surveying. Finally, Dan Tromp worked with Media Services and specialized in the database for all the information gathered.

1 Project Introduction

Suffolk University Law School is a part of Suffolk University, which was founded in 1906. The Suffolk campus is located in the Beacon Hill area of Boston, Massachusetts. Suffolk University Law School offers a variety of programs for students, including concentrations in High Technology Law, Health and Biomedical Law, Financial Services and Law Civil Litigation as well as a variety of clinical legal internship programs. In September of 1999, Suffolk University opened the doors of its newest building, David J. Sargent Hall a $70 million effort resulting in the nation's most technologically advanced law school. The variety of technology available in the building includes a courtroom that is equipped with digital cameras, plasma screen monitors, and a witness stand with an elevator floor. Throughout the building, there are over 2,800 nodes to connect a laptop to both a power source and an Ethernet connection. The classrooms are equipped with digital overhead projectors, touch screen control pads, and surround sound speakers for multi-media presentations. After making this technology available, Suffolk University Law School needed a means to evaluate to what extent the technology was being used.

Worcester Polytechnic Institute and Suffolk University Law School have an admissions agreement, which will admit a WPI graduate pending certain conditions. These conditions include maintaining a 3.25 GPA and scoring in the top 25th percentile on the LSAT exam. Upon graduation from the WPI undergraduate program, and fulfillment of previously the stated conditions, the student is guaranteed admittance to

Suffolk. This agreement is unique to Suffolk in that you cannot find a guarantee of admittance to a law school, pending certain conditions, elsewhere.

The Interdisciplinary and Global Studies Division of Worcester Polytechnic Institute developed this Interactive Qualifying Project (IQP), sponsored by Suffolk University Law School. This project is intended to help strengthen the relationship between Worcester Polytechnic Institute (WPI) and Suffolk University Law School (SULS) by studying the use of technology at SULS, identifying potential improvements in the way technology is employed at SULS, and proposing possible future projects between WPI and SULS. The project advisors from WPI are Professors James Hanlan and Fabio Carrera. The liaison from SULS is Associate Dean John C. Deliso.

After interviewing Dean Deliso, we identified three areas of technology in Sargent Hall to focus on. The first area is Media Services, which records lectures and controls electronic functions in the classroom. The second area is the Computer Center, which gives students access to computers, databases, and printing capabilities. The final area of Sargent Hall to be studied is the Web Services and Library. In the chapters that follow, you will read the background information collected on the legal field, our methods of study, and our results and analysis.

2 Background

In order to understand the use of technology at Suffolk University Law School, we must have a general knowledge of what is being taught at the institution. To do this, we will first examine and become familiar with the United States legal system and how it functions. Since our job is to work amongst lawyers and law students, it is best to educate ourselves on the material that they study. In essence we want to know our audience. Since the legal field, as it applies to intellectual property, is growing at a rapid rate, we have researched aspects of law which deal with this area. The first three aspects dealt with are patent, trademark, and copyright laws, since these areas of the law deal most explicitly with intellectual property. Many of the patents applied for today deal with tangible items rather than Internet or software patents, which protect thoughts, ideas, and concepts. We then chose to study tort liability or liability dealing with civil litigation and environmental law, since they are traditionally less technologically related than the previous three areas. By gaining background knowledge about the law, we will be able to better understand SULS's use of technology when teaching law.

To better understand how Suffolk University Law School's technology functions, we researched technology in education and how it is used in legal education. We chose to research how technology is used in the legal profession. We looked at both the use of technology in the courtroom and outside of the courtroom through an attorney's preparation of a case. There are some Courts that provide the opportunity for multi-media presentations, while others may only require a legal pad, a microphone, and an

easel. Likewise, some attorneys may be more accepting of technology in order to present their clients case, while others may be resistant to change. SULS students are given the opportunity to be on the cutting edge of the ever-changing law-technology curve.

To understand technology at Suffolk University Law School, research about the actual institution is needed. This research includes history about Suffolk University and specifically, its law school. Details are needed about the law school's programs and its facilities. The facilities to be researched include the Media Services, the Computer Center, and the Library. We looked into the hardware that was installed in the classrooms and courtrooms so that we may make recommendations on existing technology and suggest new ways to employ that technology in legal education.

Along with the physical plant of SULS, we collected data on technology used in legal education in general. This would help us evaluate where SULS ranks among others in legal education as well as allow us to suggest improvements on existing resources. The spectrum of electronic learning tools ranged from commonly used email to cutting edge video conferencing.

The WPI-SULS agreement was the final aspect researched before our immersion into the Boston Project Center. One of our goals was to improve the relationship between WPI and SULS. To do that, we needed to assess the relationship between the two institutions, as it currently exists.

2.1 United States Legal System

The legal system in the United States stems from the three branches of government established by the Constitution. The first branch is the Executive Branch.

The office of the president of the United States symbolizes this branch. The duties of this branch are two-fold; the first duty is to enforce the law, the second is to implement the policies of the legislative branch. The Legislative Branch is the branch of government that is responsible for making the laws that govern this country. It is made up of both the Senate and the House of Representatives. The third and final branch of the Government is the Judicial Branch. Its main duty is to interpret the laws that are made and decide if they are in keeping with the U. S. Constitution. This branch is organized in a pyramid fashion. At the top of this pyramid is the Supreme Court. On the next level are the 13 United States Courts of Appeals and the U.S. Court of Appeals for the Armed Forces. On the following level are the 94 U.S. district courts and the specialized courts, such as the Tax Court, the Court of Federal Claims, the Court of Veterans Appeals, and the Court of International Trade.

There are various routes a case may take to a federal court. Some cases may originate in a U.S. district court, while others will come from a state court or federal agency. Some states have variations from the federal plan of the judicial branch. Massachusetts has followed the federal plan almost exactly. There is a State Supreme Court followed by a Court of Appeals. Below that, there are district courts and specialty courts as there are in the Federal system.

2.2 Areas of Law Effected by Technology

Patent, copyright, and intellectual property laws directly relate to current technology. These laws are important because they deal with technology in law, which is a factor that will be reviewed at SULS.

The First United States patent and copyright laws were approved in 1790. They were enacted at this time to promote the progress of science by giving inventors exclusive rights to their writings and inventions for a limited amount of time. Patents do not give the right to make, use, or sell a product, rather they exclude others from making, using or selling the patented product.

Since the inception of the U.S. Patent and Trademark Office, the first laws have changed very little. What has changed, however, is the interpretation of these laws. In the beginning, patents were to offer protection to the inventor of tangible items. With the evolution of technology and the sciences, patents began to offer less protection to the patent holder. As computers and software began to develop, so did the need for the patent laws to change. These laws have now been expanded to include intellectual property. Now, not only are the inventor's products protected, but his ideas as well.[1]

2.2.1 U.S. Patents

Three kinds of patents exist in the United States today. They are utility patents, design patents, and plant patents. A utility patent protects the owner from others copying the actual structure of the patented object. It also protects the owner from the copying of new and useful utilitarian features. If one invents or discovers any process, machine, manufacture, or composition of matter, or any improvements of the same, a utility patent may protect the invention or discovery. A utility patent does not protect appearance features, but instead protects structure or utilitarian features that are both new and useful. If an inventor wants the appearance of his or her invention protected they must apply for a design patent. If one is a designer of manufactured articles, a design patent may protect

the unique ornamental nature of your designs. A design patent, unlike a utility patent, does not protect the structure or utilitarian features of an article. Instead, this patent protects the appearance of an article. The last type of patent is called a plant patent. This is a relatively new type of patent. It came about due to the increase in technology in the biology and biotechnology fields. A plant patent protects asexually reproduced plants including cultivated hybrids, mutants, sports and seedlings not found in an uncultivated state.

2.2.2 Trademarks

A trademark relates to the identification of a product by means of a name or symbol that is not descriptive of the product, and which is used in commerce to identify the source or manufacturer of the product. Trademark rights are based on first use in commerce and will prevent others from selling similar products using the same name or symbol, or any confusingly similar name or symbol. A trademark will not prevent others from making the same goods or products. Trademarks may be registered with the Secretary of State when used in intrastate commerce and with the United States Patent and Trademark Office when used in interstate commerce.

To obtain a trademark there are three major steps that one must go through. The first is to come up with a non-descriptive name or symbol for the company or service. If the name or symbol chosen is descriptive, there is no need to register it. Trademarks were developed to protect a company's advertising power. If a company begins to advertise under a particular name or symbol, customers begin to identify that symbol with that company. If another company begins to market their services under the same

[1] U.S. Patent and Trademark Office http://www.uspto.gov/web/offices/ac/ahrpa/opa/kids/kidprimer.html

symbol, they may be breaking a trademark law. The second step in establishing a trademark is to research the symbol or name the company wants to use. Usually a patent attorney will research the symbol in question. When a favorable report comes back, meaning that no one else is using the symbol, the company seeks to register the mark with the proper government agency.

2.2.3 Copyright

A copyright protects writings and artistic works against copying. Several classifications of works are specified under the copyright statutes and include, but are not limited to, literary works, dramatic works, musical works, including music and lyrics, computer programs, video recordings, and artistic expressions. Copyrights are directed to forms of expression rather than subject matter. For example, the description of an article of manufacture or a process could be copyrighted as a writing for preventing others from copying such a description. However, the copyright will not prevent others from making the article or using the process.

A copyright should be obtained the moment the expression is created so that it may be preserved either directly through the aid of a printing press or another form of multiple replications. After creation of the copyrighted work, it may be registered by filing an appropriate copyright registration form with the United States Copyright Office in the Library of Congress. The owner of such a copyright has the authority to distribute or display his or her material, as they want to. They may reproduce their work by copying or recording it. The author may distribute the work to the public by selling or leasing ownership for a given period of time. The author may also perform the work publicly in

the form of a concert if the work is performable. If the copyright is audio in nature, then performance includes digital audio transmissions.

During the creation process, if the author is hired by another company to produce a work, it is the employer and not the employee who holds the copyright. Work for hire is considered to be either work prepared by an employee during the normal scope of his or her employment or prepared work specifically ordered or commissioned. Commissioned work is to include: contribution to a collective work, part of a translation or complimentary work, parts of or whole text books, tests and/or answers to them, parts of a motion picture or other audiovisual works.

There are certain exceptions on ownership of commissioned work. If an agreement is signed before the work's conception that the work done for hire remains the authors then the employer relinquishes ownership. A similar agreement can be made in the case of a joint-work. Normally ownership is given to both authors unless an agreement is signed before stating hand otherwise.

2.2.4 Tort Liability Law

A large portion of litigation in today's courts is due to the increase in civil litigation suits. Most of these liability suits fall under the category of products liability. Product liability refers to the liability of any or all parties along the chain of manufacture of any product for damage caused by that product. This includes the manufacturer of component parts, an assembling manufacturer, the wholesaler, and the retail storeowner. Products containing inherent defects that cause harm to a consumer of the product, or someone to whom the product was loaned, are the subjects of products liability suits.

While products are generally thought of as tangible personal property, products liability has stretched that definition to include intangibles such as gas, naturals such as pets, real estate such as houses, and writings such as navigational charts. Product liability claims can be based on negligence, strict liability, or breach of warranty of fitness depending on the jurisdiction within which the claim is based.[2]

Strict liability is a theory of law that applies to a product that causes harm to the consumer when it is used normally and properly. The seller and manufacturer are held strictly liable if certain factors defined under state law are met. It is the duty of a manufacturer to use reasonable care to design the product to make it safe for its intended use.

Many states have enacted comprehensive products liability statutes. These statutory provisions can be very diverse such that the United States Department of Commerce has promulgated a Model Uniform Products Liability Act (MUPLA) for voluntary use by the states. There is no federal products liability law. In any jurisdiction, one must prove that the product is defective.

There are three types of product defects that incur liability in manufacturers and suppliers: design defects, manufacturing defects, and defects in marketing. Design defects are inherent; they exist before the product is manufactured. While the item might serve its purpose well, it can be unreasonably dangerous to use due to a design flaw. On the other hand, manufacturing defects occur during the construction or production of the item. Only a few out of many products of the same type are flawed in this case. Defects

[2] Free Advice (website).

in marketing deal with improper instructions and failures to warn consumers of latent dangers in the product.

Construction law is very similar to liability law. Most cases filed concerning construction are in regard to some type of liability. If a building or bridge falls down or suddenly collapses, someone must be found liable. Somewhere along the construction process there was a mistake or oversight. The mistake may be back in the planning and engineering phase or in the construction phase. There may be a physical defect in the material used to construct the project. Determining the source of the fault is the daunting task a construction lawyer is faced with.

2.2.5 Environmental Law

Environmental law consists of the interpretation of the many constantly changing laws and regulations enforced by the Environmental Protection Agency (EPA). The EPA was founded in 1970 as a federal organization established to assure that the environment is protected against both public and private actions that failed to take account of costs or harms inflicted on the eco-system. Currently there exists seventeen hundred parts to the EPA code. Within these parts there are on average twenty-five subsections of each part. The budget for the EPA in fiscal year 2001 is approximately 7.257 billion dollars. [3] Law governs every aspect of the environment that one can think. Everywhere a law exists, there will be infractions and different interpretations.

[3] http://www.epa.gov/ocfo/budget/2001/2001bib.pdf

2.3 Technology in the Legal Profession

The legal profession has progressed through the years to revolve around changes in laws and technology. Technology in the legal profession can be separated in two main sections, the technology used by lawyers and technology used in courtrooms. Technology is changing the libraries of law firms. Law libraries were known for housing countless volumes of legal books and documents. With the introduction of the personal computer, legal databases, and the Internet law firms, technology is able to provide resources on single CD-ROMs and provide countless web pages on law.

Lawyers and law firms are extensively using the Internet for promotion. Advertising through conventional means such as radio, periodicals, and television is costly and there is a limit to information that can be conveyed to the target audience. Through the use of the Internet, lawyers are able to reach a huge population base while keeping promotional costs down. The use of the Internet after a base cost of setting up a web page is much cheaper in comparison to other media and allows a firm to put as much information as it wishes on that web page.

The Internet is being used for reasons other than promotion by law firms. Individuals can use legal search engines such as Find Law[4] and The Law Search Engine[5] to search for specific laws online. National legal organizations such as the American Bar Association (ABA) use the Internet to convey information about the legal profession and what is required to become a lawyer.

[4] http://www.findlaw.com/
[5] http://alllaw.com

Technology is being used to change how U.S. courtrooms operate. Courtrooms traditionally were set up with a prosecution table, defendant table, witness stand, jury booth, and a judge's bench. Technology is adding to the courtroom set up with computers, monitors, and other electronic devices to make the legal system more efficient and easier to understand. In the future all courtrooms will contain computers to help display evidence and to document court proceedings.

The displaying of evidence is a vital part of the case process. Previously, to display evidence, lawyers were confined to using blackboards and easels. With improving technology, lawyers are able to make computerized presentations and display visual evidence rather than tangible evidence. Lawyers are able to create videos to display evidence that previously would have been difficult to photograph. For easier interpretation of events, computers can be used to recreate events and scenes through animation.

2.3.1 Information on Technological Lawyers

The legal profession employed 681,000 lawyers in 1998; judges, magistrates and other judicial workers employ another 71,000.[6] The overall demand for lawyers is expected to decrease as "the number of law school graduates is expected to continue to strain the economy's capacity to absorb them."[7] Since technology is developing so rapidly, laws regarding this new technology struggle to keep up. It is expected that law will focus heavily towards technology and especially intellectual property, causing a demand for lawyers specifically in the technical fields. According to Prof. Kent

[6] http://stats.bls.gov/oco/oco2001.htm#emply
[7] http://stats.bls.gov/oco/oco2001.htm#outlook

Rissmiller, about ten percent of lawyers have science degrees with about 5 percent having engineering degrees, which is clearly not enough for an increasingly technological society.[8]

2.4 Information on U.S. Law Schools

The United States has a wide variety of law schools that offer programs specializing in many areas, and each school has their own criteria for admission. In general, law schools expect potential students to have a pre-legal education, take the LSAT (Law School Admission Test) and have had a good GPA. As Dr. Gerald Wilson believes[9], students should follow four basic guidelines for enrolling in their pre-legal education including courses that:

- Teach students to think both synthetically and analytically.
- Enhance ones ability to communicate clearly and precisely in both oral and written form.
- Develop an understanding of the human experience and human institutions.
- Assist in values clarification.

The LSAT "provides a standard measure of acquired reading and verbal reasoning skills that law schools can use as one of several factors in assessing applicants. The test is administered four times a year at hundreds of locations around the world."[10] Individuals taking the LSAT can obtain a score ranging from 120 to 180, where the

[8] Rissmiller interview, p. 1. (Appendix A)
[9] Munneke, p. 7
[10] http://www.lsat.org/LSAC.asp?url=lsac/about-the-lsat.asp

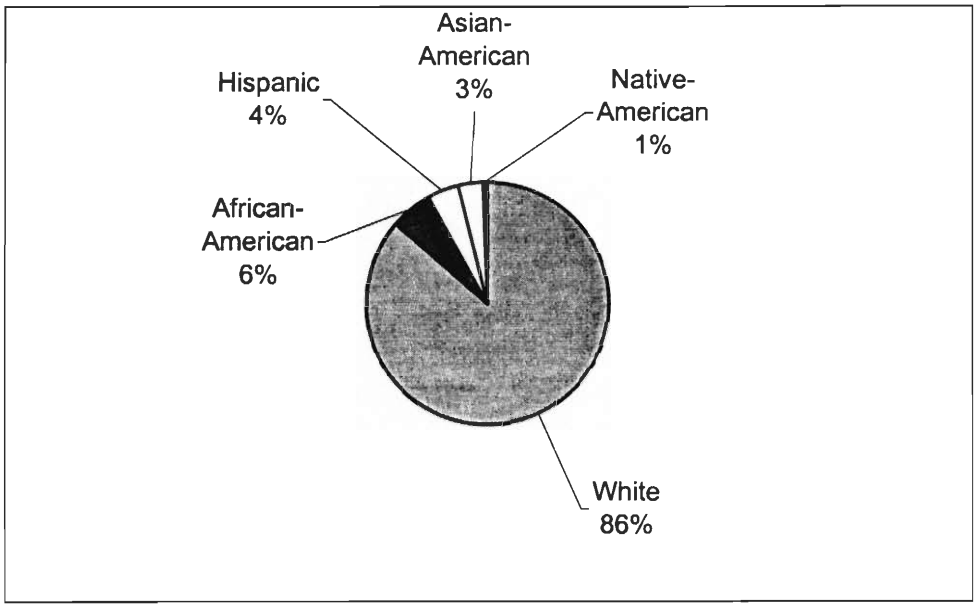
approximate percent of right answers are 0-25% is a score of 120-129, 25-50 % is a score of 130-144, 50-75% is a score of 145-159, and 75-100% is a score of 160-180.

The Association of American Law Schools (AALS) serves the purpose of "improving the legal profession through legal education. It serves as the learned society for law teachers and is legal education's principal representative to the federal government and to other national higher education organizations and learned societies."[11] Since 1870, American Law schools have used the Socratic method for casebooks and rigorous exams. Christopher Columbus Langdell developed the Socratic method and it entails directed questioning and limited lecturing. Langdell also introduced the case method to the law school curriculum. The case method is where texts are casebooks- "collections of written judicial decisions in actual court cases."[12]

The racial and gender make-up of United States Law Schools in 1992 was "86.2 % of U.S. law students white, 5.7% African-American, 4.1% Hispanic, 3.4% Asian-American, and .5% Native American (see figure 1). In terms of sex, women make up 42% of law students (see figure 2)."

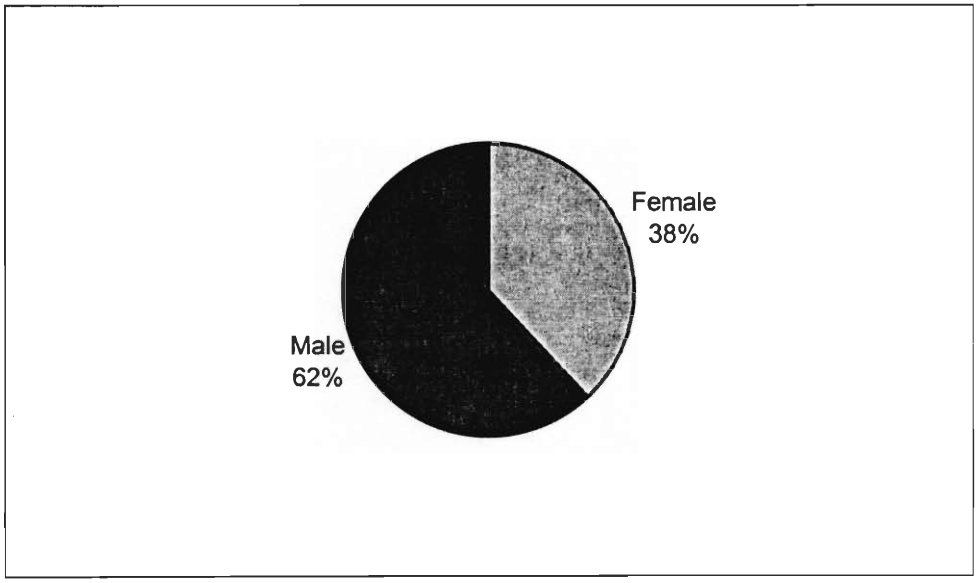
[11] AALS http://www.aals.org/about.html
[12] Tuyl, p.19

Figure 1: Racial Make Up of U.S. Law School Students



Source i: Tuyl, p.29

Figure 2 Gender Make Up of W.S. Law School Students



Source ii: Tuyl, p.29

2.5 Suffolk University Law School

Gleason L. Archer founded Suffolk University in 1906 as Suffolk Law School.[13] In 1920 the school moved from a law school to university standing building their first university building. At present day, Suffolk University consists of the College of Arts and Sciences, the Frank Sawyer School of Management, and the Suffolk University Law School. The breakdown of the Suffolk University population can be viewed in the table below.

Table 1: Suffolk University Population

# of Students	College	Percent of Total Population
2,815	College of Arts and Sciences	40.1%
2,561	Sawyer School of Management	36.5%
1,650	Law School	23.5%
7,026	total students	

Source iii: http://www.suffolk.edu/profile.html

From this table you can see that the law school is the smallest percentage of the population of Suffolk University. The College of Arts and Sciences is the largest section due to the broadness of classes it offers.

The tuition for the law school is $23,270 and for the undergraduate $15,538. The campus is spread across the Beacon Hill section of Boston with a total of thirteen buildings.

[13] http://www.suffolk.edu/profile.html

2.5.1 Suffolk University Law School Programs

Suffolk University Law School (SULS) offers a wide variety of programs for students including High Technology Law, Health and Biomedical, Financial Services, Civil Litigation, and a Legal Internship Program. The High Technology Law Program was founded in 1996, and focuses on the fields of patent law, biotechnology law, information technology, and the licensing of intellectual property law. "The program offers more than twenty courses and SULS is continually developing new courses as technology progresses."[14] The SULS faculty advises companies on issues ranging from intellectual property to technological licenses. Under the High Technology program, students complete a thesis showing their specialized technological knowledge and experience.

The Health and Biomedical program is for students who are interested in studying legal issues related to the Biomedical, Bio-technical, and Healthcare areas. Many SULS students involved in the program have backgrounds in the field of medicine, including physicians, nurses, social workers, hospital administrators, emergency medical technicians, and clinical researchers.[15] Within the program, students take courses in Biomedical Law and Health Law and may take electives in AIDS Legal Internship, Biotechnology Patent Law, and e-Healthcare Privacy and technology. SULS also has an externship program, which supplements coursework as "students participate, under

[14] High Technology Law, p.1
[15] Health and Biomedical, p. 1

faculty supervision, in the ongoing work of the general counsel offices of area hospitals, biotechnology companies, and independent research facilities and laboratories."[16]

The Financial Services concentration provides students "an opportunity to pursue advanced course work focusing on the legal aspects of financial services within the Law School's general curriculum, leading to a Juris Doctor (JD) degree."[17] The concentration focuses around a curriculum of courses in Banking and Financial Law.

The Civil Litigation program at SULS is enriched with history as it prepares students to be litigation attorneys. Webster's Dictionary defines "litigates" as a legal contest by judicial process, and civil is defined as of or relating to citizens. Thus "civil litigates" are individuals who carry on the legal contest in the judicial process for the public. Within the program, an honors concentration is "designed to recognize those exceptional students who have not only focused their course of law school study in the civil litigation area, but also have excelled in these courses."[18] The curriculum of the program involves core courses as well as electives and clinical programs related to litigation. The core courses enable students to learn and practice their litigation skills. Electives serve the purpose of allowing students to learn areas of law that are of interest to them. The clinical program lets students take clinical courses or an internship in clinical work.

Within the Suffolk University Law School, students are allowed to participate in a legal internship program. This internship program provides many second and third year law students "opportunities to apply their newly developed analytical skills and

[16] Health and Biomedical, p.3
[17] Financial Services, p.1

knowledge to real world problems in every sector of the legal profession."[19] Three main components of the internship involve skill development, service, and self-reflection. The Legal Internship pamphlet indicates that students, through working and practice, develop their skills such as client interviewing, counseling and litigation. The service component involves students examining "his or her calling to the law." Self-reflection has weekly seminars taught by faculty members, "encouraging students to reflect upon their field experience for lessons about themselves and the legal profession." The field placements for students participating in the internship program include federal and state courts, public interest groups, healthcare as well as others.

2.5.2 Integration of technology at SULS

In 1997 ground was broken for a new Suffolk law school building. In September of 1999 the new state-of-the-art David J. Sargent Hall was born. The goal of constructing a state-of-the-art law school was to keep up with the changing technical market for lawyers. The three main technical branches in Sargent Hall are Library/Web Page, Media Services, and Computer Services. All of the departments act to maintain the high-tech workings of Suffolk Law.[20]

2.5.2.1 Library/Web Page

The John Joseph Moakley Library at Suffolk University Law School was dedicated to Representative Moakley on January 13, 2000. It is a 96,000 square-foot library located on the fifth, sixth, and seventh floors of David Sargent Hall. Most libraries are placed on the ground floors or below the grade of the building because of the

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[18] Civil Litigation, p.1
[19] Legal Internship Program, p.1

difficulty of designing a high load capacity that is not directly supported by the ground. The library at SULS is uniquely placed on the top floors of the building to avoid, street noise in Boston. This noise can be distracting, especially on the ground level. For this reason, and for esthetic factors such as view, it was decided to place the library on the top floors of the building.

The Moakley Library contains 880 seats, including 440 carrels which all have Internet nodes. The library has a collection of more than 300,000 bound volumes, microform volumes that are augmented by two computer labs, a computerized classroom, twenty-two study rooms with state-of-the-art video facilities, and CD-ROM technology. The fifth floor contains a reading room, student lounges, a special collections room, and general collections. The main reading room is located on the sixth floor as is the reference department, federal reports, and two library computer labs. The seventh floor consists mostly of library staff areas as well as student lounges, and other materials. Access in and out of the library is only allowed on the sixth floor. The three main elevators in the school will not stop on either the fifth or seventh floors. This feature forces students to pass through the book scanner, which regulates the books that flow out of the library. If a book passes through the doors and has not been checked out properly, an alarm will sound and campus security is notified.

The library uses an online library catalog (http://library.suffolk.edu/) that is connected with online databases and other online legal sources. The two primary databases used at SULS are Lexis-Nexis and Westlaw. These databases enable students

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[20] David Sargent Hall, p.3

to research and review past cases and previous precedents that have been set in similar cases to the one that they may be attempting to build. A student preparing for a case concerning patent law can download a copy of the actual legal patent document. By knowing the language of the legal document, the student can better interpret exactly what the patent protects. Both databases have a multi-tiered search engine. A user may search by case number, keyword, category, and statute, along with other methods.

In order to keep the library and all of its facilities up to date, a three-year rolling technology plan exists. Every year, one-third of the library's inventory is replaced or upgraded including the software used on the computers. With the greater use of technology and wider range of material in electronic format, the reference librarian's job has significantly changed. As opposed to directing the students to printed material, the librarian now acts as a filter when finding electronic research material. Many times students use search engines and come up with hits that number in the thousands. Only a few of these hits may be useful. A skilled research librarian will narrow the results to only pertinent information. Much of the electronic research material used can be accessed through the library's web page.

The law school's web site (http://www.law.suffolk.edu) is also maintained through the library. The site is updated, as new information needs to be posted. The library's own website is updated approximately once a month. With a plan in place, the library is well prepared for future upgrades in the field of technology.

2.5.2.2 Media Services

Media Services are in charge of the technology at Suffolk University Law School's new state of the art David Sargent Hall. Services offered through Media

Services include taping classes and events for faculty. Media Services also allow faculty members to incorporate teleconferencing and web-based instruction into any curriculum.

One of Media Services' responsibilities is maintaining equipment in classrooms. On the second and third floors, there are 17 classrooms and 12 meeting rooms.[21] These classrooms are divided into 24, 45, 60, 90, 110, and 130 seats (Appendices I and J). All of these classrooms are equipped with AMX LCD panels, which allow the window shades to be adjusted, lights dimmed, and a video screen to lower to control the rooms. The professor's desk is equipped with its own computer and flat screen monitor. There are visual Samsung presenters, which are document cameras with capability of optical zoom to magnify documents for clarity. The classrooms are designed for acoustic excellence as well allowing students to have a great line of sight wherever they are located. At each seat, there are AC outlets with an Ethernet outlet allowing connectivity to the campus LAN-Network.

Suffolk University Law School houses three mock or "moot" courtrooms with some of the most up-to-date technology. These courtrooms have "plaintiff and defendant tables, judges' benches and bailiff's boxes [that] are wired to Internet and multimedia access. The courtrooms also contain flat panel plasma monitors and high-definition video recording capabilities."[22] The Suffolk Law School Academic book notes media services includes a television studio with the capability of satellite downlink programming. Satellite downlink programming allows SULS to broadcast and receive

[21] David Sargent Hall, p.9
[22] David Sargent Hall, p.15

anything it wants. All media center classes and moot court sessions can be recorded in video and audio formats.

2.5.2.3 Computer Services

The Suffolk University Law School has seven labs with 300 installed computers, 2,700 data ports with power and gigabit Ethernet capability on a fiber optic cable backbone, which links the seven floors of Sargent Hall.[23] SULS Computer Center provides the services of "referencing material, training, general information, and trouble-shooting to students and alumni. The equipment available consists of IBM-compatible personal computers, Macintosh computers and HP laser printers."[24] All the PCs run on a Novell network, software available includes WordPerfect, Word for Windows, and Computer-Assisted Legal Instruction (CALI).

All the computers in the computer lab are accessible to any law student. The computers all have a common login with no password. For security on the systems Computer Services uses Fortress. Fortress is a program, which allows the administration to restricts access to what programs are used. The current programs that students are allowed to use are Microsoft Office 97, Corel WordPerfect 8, Lexis, and free-range access to the web.

All the computers in the Computer Services labs and in Sargent Hall are connected through to the network at one hundred megabits per second, which in-tern is connected to the Internet through the university at a rate of over two gigabits per second. The university has two connections to their Internet Service Provider (ISP). One of the

[23]David Sargent Hall, p.17
[24] Suffolk Academic Year Book, p.12

ISP is newer and can handle most of the computers need and one older ISP that is redundant and slower. Both ISPs work together to meet the needs of the university and law school.

The computers in the computer labs also allow the students to check their email. The students email accounts are setup on a university mail server. The university gives students his or her individual email account with thirty megabytes of hard disk space to save their emails and personal files. The university supports about 8000 email accounts throughout the university.

Computer Services also supports in educating the faculty on software run on the computers in their offices and in the classroom. They held roughly two main class seminars a year on info that the faculty is interested in learning. Computer Service mainly teaches the Microsoft Office 97 package, but also goes into Netscape and other web-based programs.

2.6 WPI

John Boynton and Ichabod Washburn founded Worcester Polytechnic Institute in 1865. WPI is located blocks away from downtown Worcester, the second largest city in New England. "The goals of the undergraduate program are to lead students to develop an excellent grasp of fundamental concepts in their principal areas of study; to lay a foundation for life-long renewal of knowledge; to gain a mature understanding of themselves; and, most importantly, to form a deep appreciation of the interrelationships among basic knowledge, technological advance, and human need."[25] The WPI plan consists of three major projects students perform as undergraduates including a

Sufficiency, Interactive Qualifying Project (IQP), and a Major Qualifying Project (MQP). Below you can see the WPI population of students.

Table 2: WPI Student Population

	Undergraduate	Graduate
Full-time	2,701	431
Part-time	55	344
Non degree	20	282
Total	2,776	1,057
Men	77%	
Women	23%	

Source iv: http://www.wpi.edu/About/Intro/introsta.html

As you can see the full-time undergraduates comprise the vast majority of the WPI student body.

The top 10 departments by undergraduate enrollment can be seen in the table below.

[25] http://www.wpi.edu/About/statements.html

Table 3: WPI top 10 departments by Undergraduate Enrollment

1. Computer Science
2. Electrical and Computer Engineering
3. Mechanical Engineering
4. Biology and Biotechnology
5. Civil and Environmental Engineering
6. Management
7. Chemical Engineering
8. Biomedical Engineering
9. Chemistry and Biochemistry
10. Physics

Source v: http://www.wpi.edu/About/Intro/introsta.html

Computer science and electrical engineering at WPI are by far the leading majors due to WPI advanced courses in these majors. A student can obtain a Bachelor of Science (BS) in all majors offered at WPI through four years of study.

2.7 WPI and SULS Agreement

Suffolk University Law School and Worcester Polytechnic Institute offer an early admissions program. The program was established in 1997 and allows high school seniors to attend WPI for their undergraduate degree and then go to SULS for graduate studies. The high school student must complete the "Bachelor of Science degree from WPI with a minimum final GPA of at least 3.25 and have an LSAT score above the 75th percentile. Candidates for the program must submit an updated application to Suffolk

University Law School during their senior year at WPI. Students not admitted as high school seniors to this program are eligible to reapply during their freshman or sophomore years at WPI." [26]

The WPI-SULS agreement is being marketed to high school students through the admissions department and on Suffolk University Law School's web page. The WPI Admissions Office puts out a brochure on WPI- Pre Law. SULS has information on their web page on the program explaining its particulars. The participation thus far is typically one or two students each year.

2.8 Background Summary

We are now familiar with the United States legal system and many of the current rules and laws where technology comes into play. We also have a good background on current technologies being used at many schools throughout the United Stats and specifically at SULS. We finish with the WPI-SULS Agreement to get a good understanding where the two school tie together. We now have plenty of background information to integrate ourselves into the SULS and begin with our methodology.

[26] http://www.law.suffolk.edu/academic/wpi.html

3 Methodology

This project was intended to help strengthen the relationship between Worcester Polytechnic Institute (WPI) and Suffolk University Law School (SULS) by evaluating the ongoing WPI-SULS Agreement, studying the use of technology at SULS, identifying possible improvements with technology, and proposing possible future projects between WPI and SULS.

The general objectives of the methods discussed here within are as follows:

- Evaluate the current WPI-SULS Agreement.
- Assess the current technology at SULS by:
    - Studying the technology the students are currently using;
    - Identifying why they do not use other aspects of the technology;
    - Studying the teaching styles and techniques used by the faculty in relation to the technology available to them.

The structure of this chapter is straightforward. First, we establish the domain of our study, identifying the general topics we are studying. Next, we talk about existing data available to us. We needed this information to better understand the current situation of the technology at SULS. We then talk about information we needed to obtain to fill in the holes of the existing data to satisfy our objectives as stated above. After discussing generally, we then move into how and when our study took place, and finish with an in-depth explanation of each one of our techniques: a survey of WPI students; one on one interviews with key faculty and staff; construction of a hardware database; classroom observations; a survey of SULS students.

The domain of our project included the WPI students, the SULS Students, the SULS faculty, and technology of SULS. We measured the utilization of technology at SULS through our surveys, interviews of students and faculty, and through our own observation. Based upon our results, we made recommendations on the usefulness of the technology at SULS.

3.1 Overview of Surveys and Interviews

This section is an overview of the way in which we gathered the necessary information. We gathered our data through conducting multiple surveys, observations, and interviews. The first survey involved WPI students. The survey of WPI students gave us information on what WPI students know about the agreement with SULS and the aspect to which WPI students are interested in the study of law. The analysis section will show the specific numbers of students who are familiar with the agreement.

The second method of gathering information was via one-on-one interviews of the SULS department heads, knowledgeable staff, and employees with expertise in the areas of the building where we will be working. From this, we obtained information on where we worked and what each department was responsible for. This also gave us a quick overview of the workings of Sargent Hall.

The next method we used involved the construction of a database that contained information about the hardware contained in the SULS classrooms. This database served as an inventory list for Media Services at SULS as well as showing us what type of hardware was housed in each classroom.

The next method used in our methodology was the observation of classes at SULS. We observed fourteen different classes to view how teachers and students used the technology in the classroom.

The next method we used was a series of semi-structured interviews of SULS faculty members. The goal of interviewing SULS' faculty was to find out what areas of technology the professors used in the classroom, why they use certain technologies, and what opportunities for other utilization exist. The analysis consisted of coding and analyzing responses for patterns.

The final method implemented was a survey of SULS students. The goal for the SULS student survey was to find out how technology was being used and what improvements students saw as being needed. The analysis gave specific numbers and tables showing the use of technology by SULS students.

3.2 Assessing the WPI-SULS Agreement

To assess the WPI-SULS Agreement we used a survey of WPI students. The main goals of the WPI Student Survey were as follows:

- To find out if WPI students were aware of the WPI and SULS Agreement;
- To see whether there was in interest in graduate school among the WPI students;
- To see whether there was an interest in the graduate study of law among the WPI students;
- To discover if WPI students had an interest in further information about law schools.

The short survey consisted of a few simple "yes or no" questions. (See Appendix B) It simply gets straight to the point and only leaves a few open-ended questions that take up little of the student's time. Notice that the simplicity allowed us to survey more WPI students for a broader sample. The average survey took about 45 seconds to a minute.

The WPI study area consisted of the Worcester campus. Getting a large and broad sample size was our main interest on the WPI campus. We conducted our survey in the main two dinning areas, Founders Hall and Morgan Commons. We chose Founders Hall because it is an upperclassmen residence hall that would increase the upperclassmen in the survey. Morgan Commons was chosen for two main reasons. First, it serves as the main cafeteria on campus and most students with a meal plan visit it. Second, Morgan Commons is located adjacent to the main student dining area, which sees a high inflow of traffic. We set up a booth in the Morgan Commons location with an incentive to take our survey. The incentive was a free twelve-ounce can of Schweppes Diet Grape soda.

To assure a broad sample of WPI students, we tried to our best ability to make sure that our survey was not just limited to certain sub-populations, such as freshmen or just computer science majors. The student sample included members of each class and almost every major. When picking our location times and dates, we knew there might have been a possible bias for our surveys. Due to the fact that many first year students are in the dorm and on campus more than other students, there may have been a possibility that we received a portion of incorrect sampling of the upperclassmen.

The sample included graduate, transfer, and undergraduate students. The one limitation of the sample frame was that the individual must have been a WPI student. Our sample size was approximately 150 students, which was a large enough sample size to get a good representation of the WPI population. No selection procedure was needed, as it was a random sample of students on campus.

The data was entered into MS Access as we administered the survey to the students. The first five fields of background information we obtained were gender, age, graduation year at WPI, major and concentration if there was one. The next fields were the bulk of our study. The first question indicated whether there was an interest or lack of interest in pursuing a legal degree. The following question asked whether or not the student was possibly looking in going to graduate school. If so we asked them to list their top three schools, why they considered that institution, and how they heard of that institution. Our next question asked students whether they had heard of SULS. The next question asked whether students knew about the WPI and SULS Agreement. The final question was to see if students wanted to receive more information about SULS or WPI's pre-law program.

3.3 Assessing Technology at SULS

We assessed technology of SULS, specifically dealing with Media Services, the law library catalog and web page, and the SULS computer center. Through our analysis of how technology was applied in these departments, we made recommendations on how to make improvements. The group separated so that one individual worked within the specified technological sections. Dan Tromp worked with Media Services. Todd Blain

worked with the SULS computer center, and Marc Bullio worked with the librarian and Webmaster. The Media Services Department is located on the third floor of the Sargent Hall, and classrooms can be found on the second and third floors. On the fifth floor a seminar room is used for classes as well. The SULS computer center is located on the sixth floor of Sargent Hall. The library is spread between the fifth and seventh floors, and the library staff and web master are primarily located on the seventh floor.

3.3.1 Department work

During our time at SULS our group separated into three departments: the Media Services, SULS Computer Services, and the SULS library. The main goals of our department work were as follows:

- Allowed us to gain a hands on feel for each department operations;
- Through our observations of each department, areas of technology that needed improvement were more visible;
- To solve any immediate problems dealing with technology.

As seen in Appendix C, our daily schedule consisted of working in each department, Monday through Friday from one in the afternoon to four-thirty. This schedule was flexible due to other interviews and surveys conflicting with this time slot.

To complete our goal of listing improvements in technology, we first noted problems in a designated notebook. Afterwards each problem was further reviewed and possible solutions were drafted.

3.3.2 One-on-One Interview with select Department heads

We conducted one-on-one interviews with the department heads of Media Services, SULS Computer Services, the SULS library, the Registrar, Career Services, and Admissions. The one-on-one interviews were chosen to provide our group with the most information about each department in the easiest possible manner. The main goals for our interviews were as follows:

- Determine how each department operated through the use of technology;
- Determine what each of the department heads sees as needed improvement in technology.

This method was chosen to expand knowledge and ideas about SULS technology in the education process. It also serves as an area where we can ask questions about the surveys and interviews that we are going to conduct with students and faculty.

We conducted the interviews in the offices of each of the department heads inside SULS. The interviews were conducted throughout our seven-week period to facilitate the busy schedules of the department heads.

We setup a general questionnaire, which we could use to meet our goal and also be used for each department. (See Appendix D) The interview was intended to very short and to the point, so that our interview were quick and don't waste any of the department heads important time.

The questionnaire in Appendix D starts by asking about how long they have been working at SULS. This question is directed to the department head, to determine whether

technology was a part of their job prior to moving the Law School to Sargent Hall. This first question served as a guide for the rest of the questionnaire.

The second question is, "What is the goal of your department in terms of technology and use of technology?" Depending on what department we were interviewing, we phrased the question accordingly. In Computer Services we geared it to the computers in the computer lab, but in Admissions we pointed the question in terms of the Web page. This question served as a good introduction and helps us realize exactly what each department functions as.

The third question asks how the department uses the current technology. We used this question to see if the department was utilizing the available technology to its fullest. This question also began to reveal some of the problems that the departments were having and opened dialog on possible solutions.

The next two questions are asked to get a feel for how the department keeps up with the changing technology. We tried to determine if there was an upgrading plan to accommodate the needs of the each department. We also tried to see if and how the department received training on new technology. Keeping the hardware up-to-date is only useful if you can keep the people that use the hardware informed.

The last question of questionnaire is the one question that is omni present. Do you see any further problems with technology? This question does many things for us, since one of our goals is to find any problems with the current technology. This question let the department heads speak freely about what is concerning them, and allow for some open discussion.

After each interview was conducted, the team member who conducted the interview drafted an interview summary. The summary was then presented to the interviewee for correctness, questions, and comments.

The interview summary also served as our tool for analyzing the data. Since all of our questions are open ended and opinionated, it makes it very difficult to quantify. Also since we only have 5 interviews of this type, a database was not need. The interview summary worked as a list of suggestions for us.

3.3.3 Classroom Hardware Database/Website

During our department work in Media Services, it was suggested that a database be created. The database contained information about each classroom ranging from size to the number of nodes. The database was then converted into several Web pages that included the data of each classroom as well as pictures of the classroom. The reason for the database was two fold. First, we used this database in our assessment of the technology in SULS classrooms. Second, Media Services and the rest of SULS now can easily see the hardware in each classroom. The database serves as an inventory list. Faculty can see what hardware is in each room and can determine which rooms would be appropriate for their classes.

To create the database, MS Access was used. MS Access was chosen because it was easy to use, easy to maintain, and it took little space. To database was run through a general switchboard as can be seen below in Figure 3.

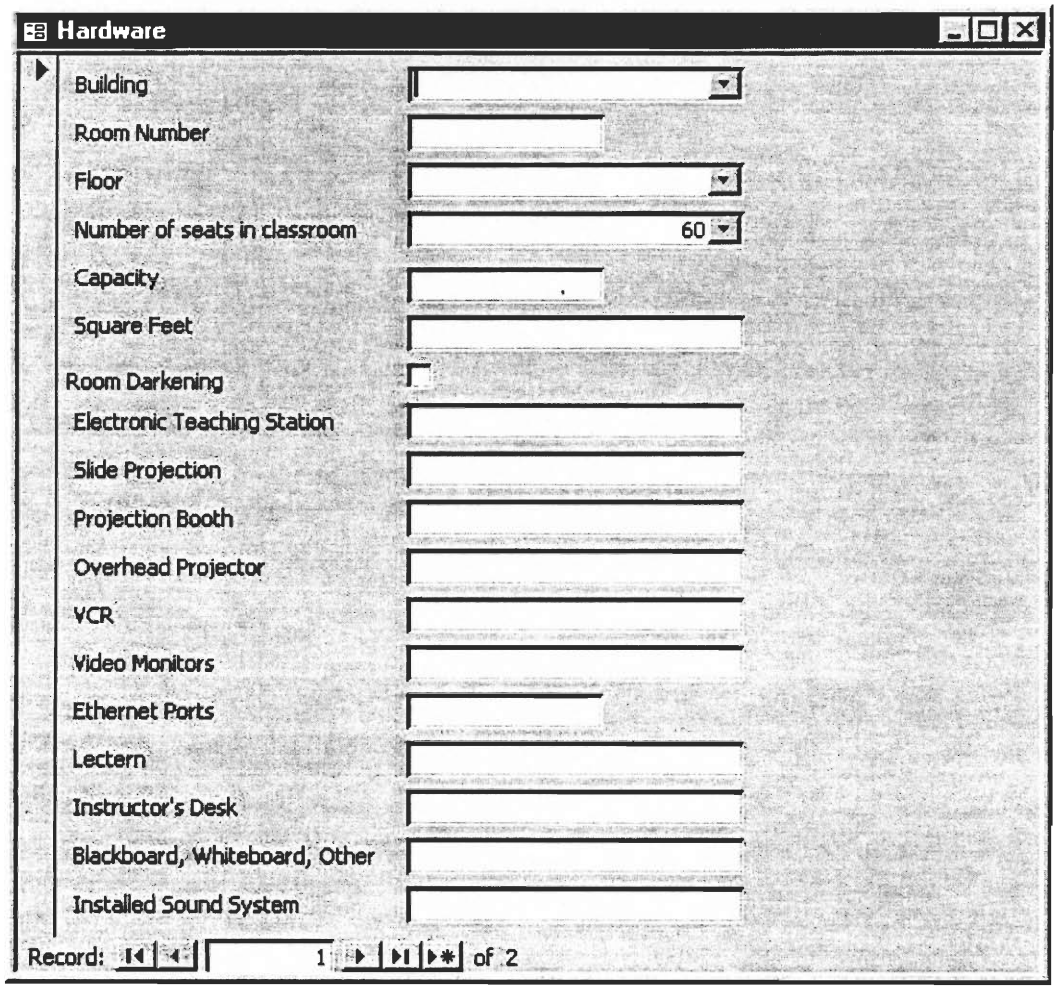

Figure 3: Form for Hardware Database

This form makes it easy to update any of the class information when new hardware is added or upgraded.

3.4 Assessing the use of Technology at SULS

After the assessment of technology at SULS, we then assessed how the professors and students were using this technology. To accomplish this we implemented three methodologies. The first was observation of law classes. The second was interviews with select professors. Finally, we conducted surveys of the SULS students.

3.4.1 Classroom Observations

To understand how the professors and students use technology at SULS, we decided to observe classes. Through our interview of the Registrar, we obtained a list of classes. From this list we determined which class to observe by concentration. The goal was to sit on at least one class from each concentration in order to have a well-rounded set of observations. Also we tried to our best ability to sit on classes, which were for first, second, and third year law students. The observation of classes occurred from the week of March 25 to March 29. In total, we sat on 12 separate courses. The specific titles are not listed in our report to keep anonymity.

We choose these classes from a list of the 159 classes offered. We choose one third of the classes to be first year courses, and the remainder of the courses to the second and third year upper-level courses. From Table 4 you can see which class we choose to sit in on.

Class Title	Course Type	Concentration	Time
Advanced Topics Banking	Elective	Financial Services	Evening
Civil Procedure	Required	Core	Day
Commercial Law Sales	Elective	Financial Services	Day
Constitutional Law	Required	Core	Evening
Copyrights	Elective	High Technology	Evening
Corporate Finance	Elective	Financial Services	Evening
Federal Courts	Elective	Civil Litigation	Evening
Individual Rights	Elective	General	Day
Mediation	Elective	Civil Litigation	Day
Property	Required	Core	Day
Secured Transactions	Elective	General	Day
Securities Regulation	Elective	Financial Services	Day

Table 4: Classes Observed

To take good notes on how professors and students used technology, an observation form was created (see Appendix E). The upper section of the observation

form contained information about the class such as the room used and the number of students in class. The lower section of the observation form consisted of a checklist of items such as use of touch screen, use of MS PowerPoint, and use of the Internet. Also within the checklist was an item for laptop use. The number of students using laptops was counted as well as the number who used their laptops for personal, non-class related use during class time.

After we observed the classes at SULS, we entered the results of our observation sheets into MS Access. With MS Access, we can create tables to see common problems.

3.4.2 Survey of SULS Students

To assess the use of technology by the SULS students, we conducted a survey. The main goals behind the face-to-face SULS Student Survey are as follows:

- To find out to what extent the SULS students use the technology in the classroom, library, web and computer lab;
- To find the opinion of the SULS students regarding the technology in the classrooms, library, and computer center;
- To solicit recommendations from the students on improvements in the use of technology that could be made.

A survey of this type was chosen to find out what the students of SULS want to see improved in terms of technology. The survey method was picked instead of interviewing, because surveys are quicker for students to take and greatly increased their participation. Also, with a survey containing many closed-ended questions, the data is relatively easy to assemble and interpret.

We conducted the surveys in David Sargent Hall at Suffolk University. The survey was conducted during the week, Monday through Friday, from ten in the morning until seven at night. We set up tables on the first and fourth floor lobbies because these areas saw the most influx of people. Individuals were asked if they would be willing to participate in a short survey to help improve technology at SULS. To lure students into taking the surveys, we provided candy as an incentive. Once the individuals filled out surveys, they were thanked and the completed surveys were stored in binders. We also provided the option for students to take the survey with them and then drop it off.

The SULS student survey consisted of four pages as seen in Appendix F. The first page was a title page that identified the purpose and goal of our survey as well as who we are. This page also allowed us to stress that the survey was totally confidential.

The second page of our survey included a top portion used for identification purposes. The top portion requested the gender, age, type of enrollment, year and concentration of the participant. We wanted to know the type of enrollment as either full-time day or full-time night. The reason for this information was to receive a proper ratio of full-time day to full-time night SULS students in accordance with the registrar's enrollment figures. SULS has approximately 1700 students, of which 1000 are day and 700 are night. In conducting our survey, one goal was to receive at least ten percent of SULS enrollment. We obtained this goal and had surveyed 100 full-time day students and 70 full-time night students.

The first question of the SULS student survey was used to evaluate the students' computer skills. The question asked whether the student skills had improved since being at SULS. If the student answered "no," they moved on to question two. If the student

answered "yes," they were asked specifically in what areas they had improved. We listed commonly used programs such as Microsoft Word, Microsoft Access, and Lexis-Nexis for a student to check off. There also was another space provided where a student could list another program. The next set of listed areas included computer skills such as Internet Search as well as space for a student to list an area. The last set of listed areas consisted of computer networks and computer hardware. Space was provided for the student to fill in any other areas where their computer skills had improved. The second half of the question asked where students had learned these computer skills. We listed a few items such as class assignments and Legal Practice Skills (LPS) course. We also provided space for a student to fill any other place where their computer skills had improved.

The second question dealt with laptops. It first asked students whether they owned a laptop, and if they answered "no," they moved to question 2c. If students answered "yes," we asked how often they used their laptop in class. Students had three options: always, sometimes, and never. If a student checked "always," they were asked what they saw as the main benefits. If a student checked "sometimes," we asked why in some classes and not others. If a student checked "never," we asked why not. Part 2b asked in what areas of the building, other than the classrooms, did students use their laptops. We first listed the first and fourth lobbies, library, computer center, and provided a space for a student to fill in any other areas. We then listed areas where students might want to have more connectivity. Part 2c asked whether students owned a desktop. The purpose of this question was to see if people who didn't own a laptop had a desktop. The last part of question 2 asked students who didn't own a laptop why not.

We listed a few responses such as price and also left space for a student to fill in another reason.

The third question asked whether students had used Media Services and for what reason. We listed reasons such as recorded classes, video conferencing, and we provided space for another reason. The purpose for this question was to satisfy the goal of quantifying usage of Media Services by SULS students. The next question asked for what purposes students had used Computer Services. We listed reasons such as printing, computer labs, and we provided space for another reason. Our goal was to quantify usage of Computer Services by SULS students. The fifth question asked what the preference would be of students in terms of computer setup. The first option was the current state, which meant no logins but restricted access to programs and no personal hard-drive space. The second option was to have logins with username and passwords but have full access to programs and have personal hard-drive space.

Our next set of questions dealt with the SULS web page. We first asked if SULS students had the ability to have their own personal web page, would students utilize it. The purpose for this question was to make sure before making a recommendation for personal web pages to see if there was an interest. The next question asked for what reasons students used the SULS web page. We listed reasons such as none, Administration, Registrar, and we provided space for another reason. The purpose was to help us quantify usage of the SULS web page by SULS students. The next question was to find out what technique students preferred in terms of teaching by professors. The purpose was to establish whether use of technology by professors seemed to be useful.

We provided a list of teaching techniques such as Socratic method, using solely the whiteboard, the Internet, and we provided space for another technique.

The last sets of questions were all open-ended and served the purpose of obtaining opinions of the SULS students. We first asked students to list any classroom techniques involving technology that they found distracting. The reason for this question was to find where technology was not serving a useful purpose. The next question asked whether they felt the professor should be able to disconnect student access to the Internet in the classroom. The main reason for this question was to ascertain opinions of SULS students on such a policy. We needed their feedback to help establish our recommendation. The final question asked students to list any improvements they would like to see made to the technology and/ or physical plant of Sargent Hall. The purpose of this question was to determine what SULS students want to be improved and thus helping us in formulating our recommendations.

3.4.3 Interview of Select SULS Professors

These interviews were designed to explore:

- How the faculty feels technology helps to educate students;
- What motivates the faculty to learn to use this new technology;
- How professors are using the technologies in the classroom and with their assignments;
- Problems that professors encounter in using various technology;
- Faculty suggestions for improvements.

Semi-structured, face-to-face interviews were chosen because they permit investigation of complex issues with a significant proportion of professors at Suffolk. The main strength of this method is that we will obtain a broad view of technology usage at Suffolk and insight from professors. From a population of 60 tenure track professors, the sample was ten. We first chose professors to interview from the classroom observations. We selected four whom we observed used technology extensively in class. By having some background on what the professors actually do in their class, we could examine the professor in further detail to get more out of the interview. For the remaining six professors we selected, we viewed a list of all 60 professors, how long they have been teaching, and what classes they taught. From this information, we selected other professors who would give us a well-rounded sample.

We sent formal emails to the selected professors as seen in Appendix G. It informs them that they have been chosen to participate in our study and asks them where and when we could interview them. We did not want to set up a default location and time for the interviews because we wanted then professors to be in a convenient place at a convenient time. We allowed a one-week time block for the professors to schedule their interviews with us. The reason we limited this time block was to meet our deadlines to accomplish all of our tasks.

We used an interview plan, as seen in Appendix G. We gathered background information about each of the professors and the classes they taught. We obtained background information prior to the interview to stimulate an efficient quality interview.

The first two questions of our interview with the SULS professors served as a good introduction. We asked if the professors think that the technology helps in

educating the students and if they think technology is dependent on course material. These questions also gave us the professor's general opinion on technology. If the professor said "not at all," or "you just can't teach the law with technology," then we knew not to be too technical with our questioning.

The next three questions were simple yes-or-no type question that were left open for the professors to add any comments they had on the question. These questions focused on what motivates the professor to use, or not use, the teaching technology. We looked at three possible motivations: the new technology in Sargent Hall, the faculty, or the students.

The next set of questions dealt with technology in the classroom. The first two questions asked specifically what technologies are used and when the faculty uses these technologies in the class. The next question asked why faculty members use some technologies and not others. From these questions we got a good understanding of how the professor taught, with or without technology.

We then asked the professors about laptops and their role in education. We asked what they allow the students to use in class as far as laptop and Internet access. We even asked if the professors owned a laptop, to make sure that the professors know the potential of a laptop potential is. We then finished this section by asking if the professors assign any homework that specifically involves technology such as legal web searches or MS Word usage.

The next two questions were to see if the professors find web pages useful. One question asked the opinion of the professor to see if he or she believes it's a reasonable

tool. We then asked why (or why not) they use a personal web page, to get some background of the professor's experience using a web page.

Our final question asked if they had any suggestions for changes in the technology at SULS and was a good closer. We also left time for any further question or comments to be made.

We created a database in MS Access to analyze the data. Since all of the questions were close-ended with comments, we set up two fields per question. The first field for each question was for the close-ended part of the question, which was a simple check box. We then created a text field for each question for the comments.

4 Results and Analysis

Through our intensive surveying and interviewing, we have collected a data set that we further investigate throughout this section. All of our results were entered in MS Access and MS Excel to interpret the data to its fullest. We examined the WPI student survey, classroom observations, SULS student survey, and the professor interviews.

4.1 WPI Student Survey

In our investigation of the Worcester Polytechnic Institute (WPI) and Suffolk University Law School (SULS) Agreement, we conducted a survey of WPI students to see if they were aware of the agreement. Assuming they did not know of the agreement, our secondary goal of the survey was to find out why they were unaware of the agreement. Our main suspicions were that either the students were not well informed about the agreement or that they had no interest in law and therefore did not pursue their own investigation to see the options available to them.

We set our sample limits of the WPI students to include all of the students at WPI including freshmen, sophomores, juniors, seniors, graduate, and transfer students. We included graduate students only to get their opinion of graduate schools. However, our main focus was the undergraduates, because, from them, we would obtain the most insight on the interest in pursuing legal education. From Figure 4 you can see our sample broken-down by year.

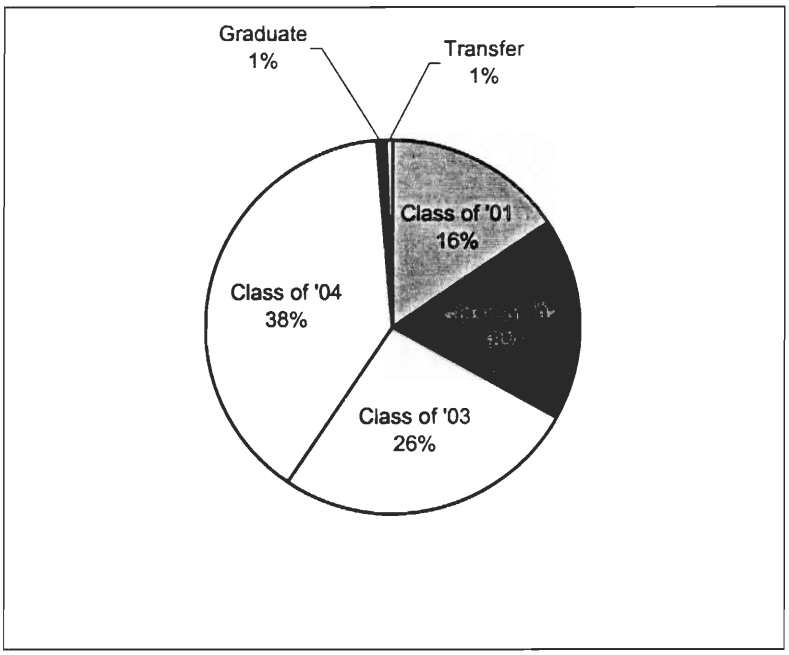

Figure 4: WPI students surveyed broken-down by year

(Total Students Survey = 149)

From this graph you can see that the years follow the pattern of the first year being the largest, and then the next years decreasing due to students dropping out and transferring to different schools. Our grad population was small because we tried not to focus on the graduates seeing they are currently in grad school and would offer little to the survey other than why the choose WPI. You can see that there is a slight increase between our survey size of freshmen and the rest our sample. This is due to our survey method of doing the surveys on campus. Since most freshmen live on campus, we expected to get a large percentage of this class.

As far as majors are concerned, we did a fair job getting a good representation of all the WPI majors. We were able to cover almost all of the majors offered. From Figure 5 you can see the distribution of students in each major surveyed.

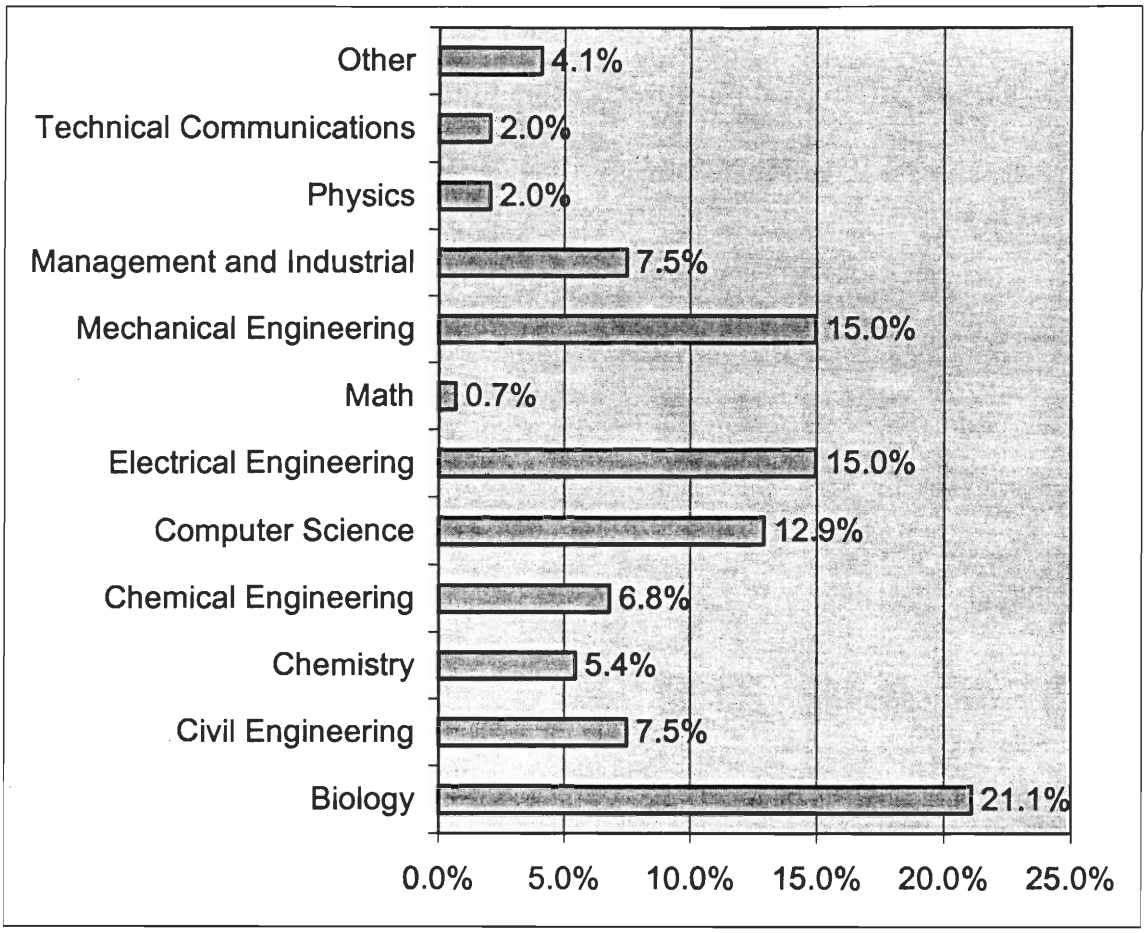

Figure 5: Breakdown of WPI students by major

(Total Students Surveyed = 149)

The table above shows the percentage of WPI students broken down by major. Our sample holds true to the top five majors at WPI, computer science, electrical engineering, mechanical engineering, biology tech, and civil engineering. The biology section is abnormally large. We coded the majors, through combining biology, biotech, bio-medical, and bioengineering into one category. We also combined all the management majors into one section for a simpler data set.

The first question we asked was to understand what the students thought of legal education by asking if they were even interested in further education after their undergraduate studies before we asked about a legal education. We expected to see a large number of students considering grad school. From Figure 6, you can see that two-thirds of the students we sampled are considering grad school.

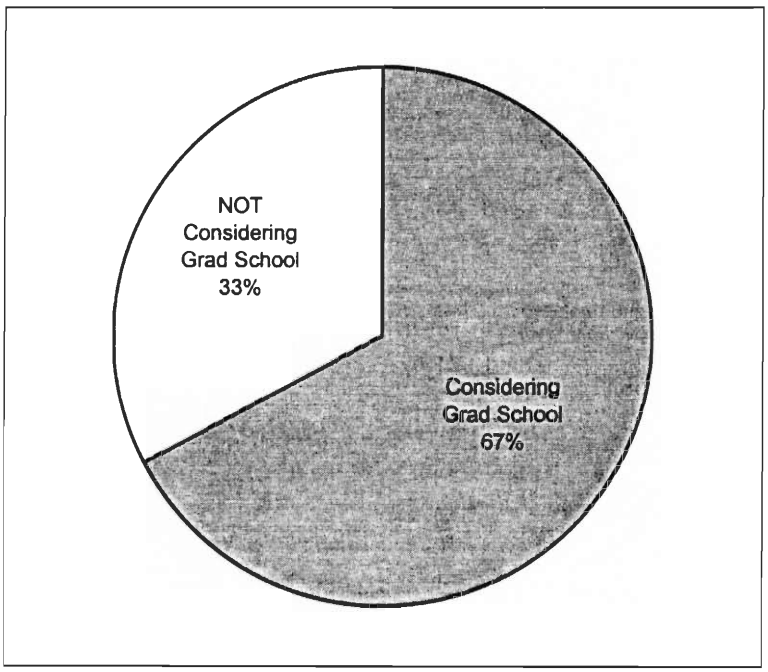

Figure 6: Percent of WPI students considering grad school

(Total Students Surveyed = 149)

Two out of every three graduates from WPI don't actually go to grad school immediately following graduation. The number is close to 10% of students who actually go on to grad school.[27] This 57% difference is large, because when it comes down to deciding to go to grad school, there are hundreds of considerations to make involving factors, such as money, applying, which school, etc. So, in total, with about a WPI

[27] Career Development Center: 1998-1999 Annual Report, p.29

undergrad population of 2,776 students, 1,860 students are considering going on to grad school. Of those 1,860, only roughly 186 students go on to grad school.

We then asked the students their interest in legal study and law. This question helps us get a feeling of just how many students who are attending a technical school are even interested in law. From Figure 7, you can see just how low the interest in law is from technical WPI students.

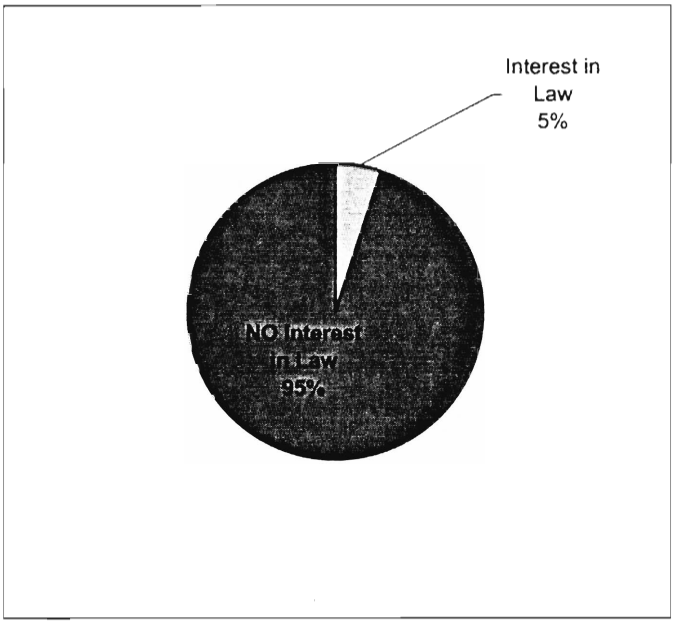

Figure 7: Percent of WPI students considering grad school with an interest in legal studies (Total Students Surveyed Considering Grad School = 100)

This graph shows that there is littlr interest in law by the WPI students. Of the 186 students who will go to grad school (calculated above), only about nine of them have interest in law. Since this is a sample of the entire population of WPI, and not just one year of students, you can only expect to see about two students per year who are interested law and will actually go to grad school.

Our WPI survey moves from the general to the specific by focusing on how many WPI students have heard about SULS and how many know about the agreement between WPI and SULS. The WPI/SULS Agreement has only existed for four years, therefore this year's graduating class (class of 2001) were seniors in high school when the program opened up to them, therefore a sample of the entire school is appropriate. Figure 8 shows how many have heard of SULS.

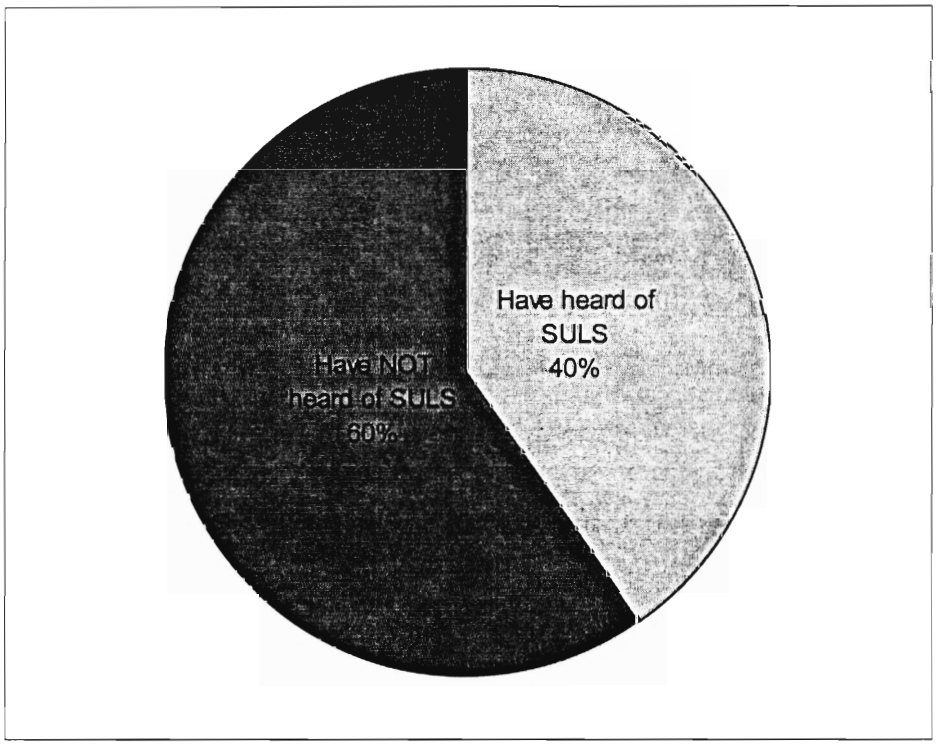

Figure 8: Percent of WPI students that have heard of SULS

(Total Students Surveyed = 149)

From this graph, it is evident that, of the WPI students, a good portion knows about the law school. Since the WPI students are aware of SULS, but have no interest in legal studies, it is safe to say that students are not applying to SULS because of their lack of interest for the law.

Finally, at the end of our survey we asked if WPI students know of the WPI/SULS Agreement. Since this program has been in affect for only four years we did not expect to see many students who know of the program. In Figure 9, you can see the response we received from this question.

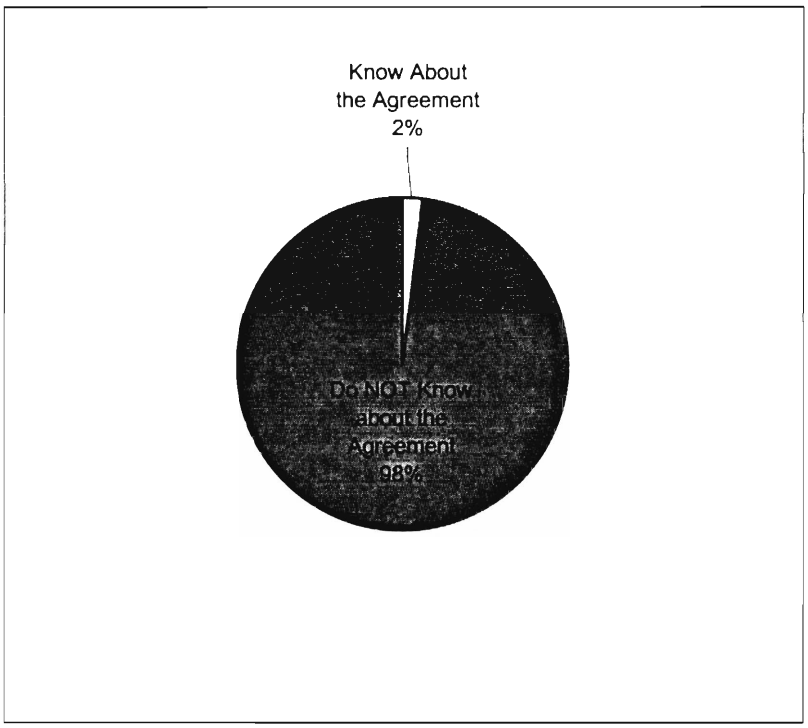

Figure 9: Percent of WPI students that know about the WPI/SULS Agreement (Total Students Surveyed = 149)

As expected the knowledge of the WPI/SULS Agreement was low. The knowledge of the WPI/SULS Agreement does follow the interest of law by the students. If there was a higher percentage of students' that knew about the agreement but had no interest in law, you could conclude that somehow the students were finding out about the WPI/SULS Agreement. Since the knowledge of the WPI/SULS Agreement and the interest in legal education are so low, it is clear that WPI students are not well informed

about the career possibilities of combining a technical undergraduate background with a career in law.

4.2 Classroom Observations

During the week of March 25, 2001, we attended 12 classes, which we selected as a broad representation of the 159 classes offered this semester. The classes were selected to balance first-year versus, second, and third-year classes. We also selected classes based on the subject matter as it related to technology. After determining the number of people in the classroom, we counted the number of laptops in use in the class. For calculation purposes, the total number of students when determining percentages was 564. The graph below shows the number of students per class who use laptops.

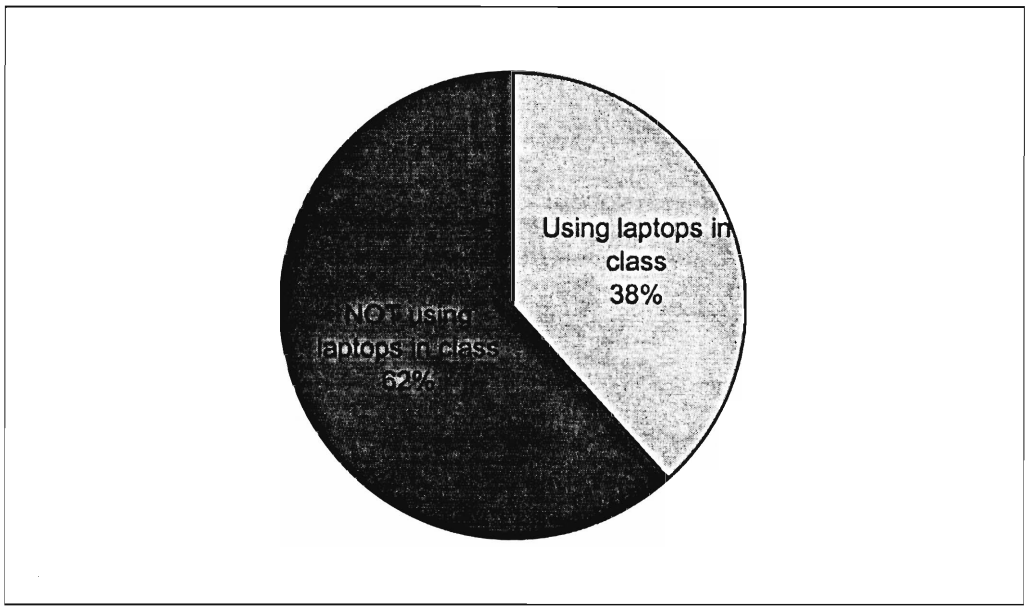

Figure 10: Percentage of SULS students using laptops in class

(Total of Students Observed= 564)

We used this graph to determine a reference point of the technology use at SULS. All of the following charts involving laptop use were compared to this data to verify their validity.

After we determined the number of students using laptops in class, we began to observe the types of applications for which they were used. The main academic use of the laptop was note-taking on a word processing program. However, laptops were not only used for academic purposes. Over 25% of the students observed used their laptop for applications that included games such as solitaire and minesweeper, checking e-mail, web browsing and Instant Messaging. For our observation purposes, we considered these applications, "personal use during class time."

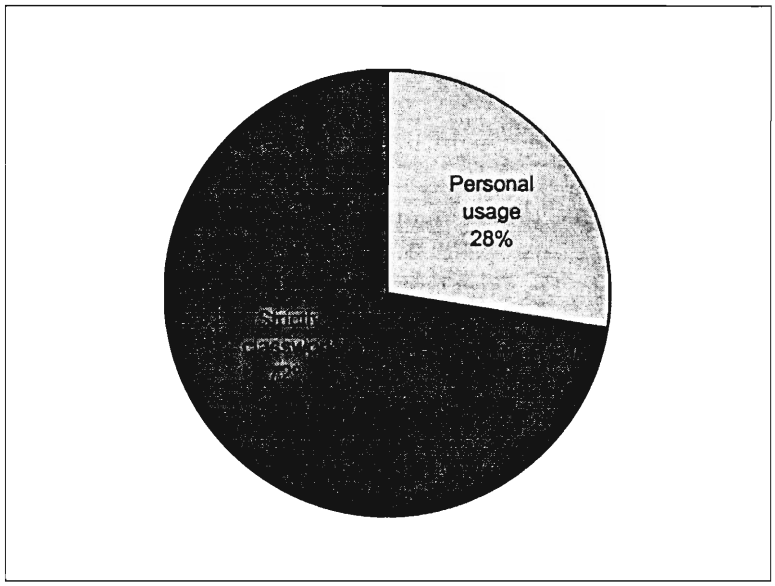

Figure 11: Percent of SULS students using their laptops for personal use during class time (Total Number of Students Using Laptops = 208)

If a student was observed using one of these applications at least once during class for personal use and not class purposes, we counted them for personal usage of laptops.

No single student was counted twice during a particular class period. Instant Messaging was an application that required a subjective method of observation. After speaking with some students, we discovered that Instant Messaging was used in class for more that just chatting. Students within the same classroom would send explanations of the professor's lecture to another student who may have had trouble comprehending a given concept. The adjustment was made to our observations and our forms were tallied. Depicted in Figure 11 chart is the percentage of students who own laptops that were using them for personal applications in the classroom, having made allowance for the legitimate use of Instant Messaging.

Along with observing students while we were in class, we also observed the professors' use of technology. For the purpose of this data collection, high technology was considered to be the use of MS Power Point, document cameras, video conferencing, and use of the Internet in the lecture. If, throughout the class, the professor used any of these technologies, he or she was considered to have used high technology in the classroom. Any errors in our data would come from the professor not using technology as he normally would or the subject matter being non-conducive to technology on the day that we observed. Figure 12 presents our findings of teaching methods and techniques.

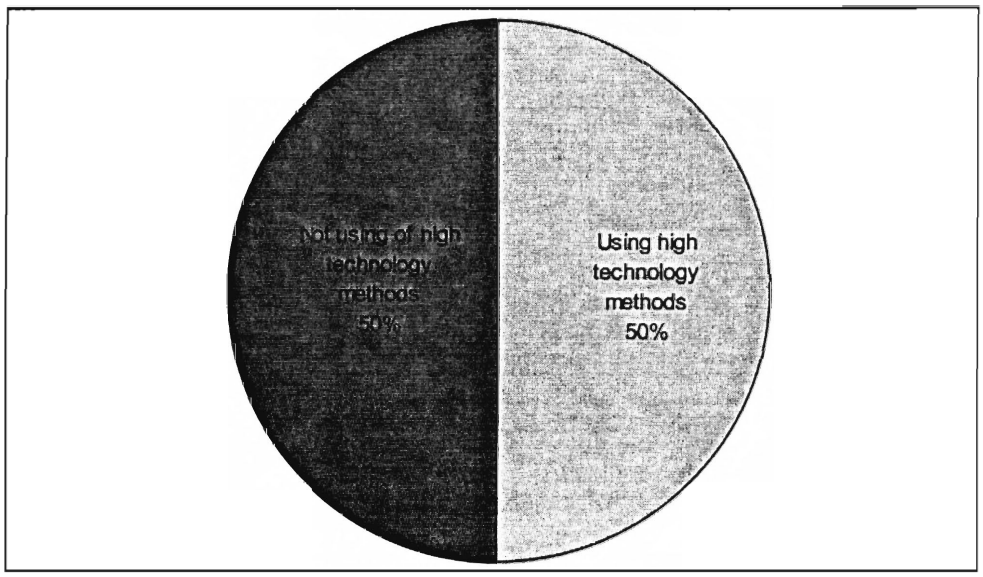

Figure 12: Percent of professors using high technology devices or methods

(Total Number of Professors Observed = 12)

From Figure 12 you can see that 6 out of the 12 professors we observed used some sort of high technology methods in their class. Given that some professors might not use the technology at all and we might have caught the class on a day were no technology was used, we feel that this number is still low. We allowed for the professor to use PowerPoint, the document camera, the Internet, or even a movie clip. Out of these four methods, all teachers should be able to find at least one of these methods to help benefit their education of the given course material.

4.3 Survey of SULS Students

In the assessment of technology at SULS, we conducted a survey of SULS students to find out how they use technology at David J. Sargent Hall. We wanted to find out to what extent the SULS students use the technology in the classroom, library, and computer labs. The survey also served the purpose of finding the opinions of SULS

students regarding technology and soliciting ideas for any improvements the students would like to see made.

In our SULS student survey we wanted to obtain an accurate representation of the student population. We received an average age of 26 years old. We consider this fairly accurate at SULS, because the students can range from 21 to any age. To accomplish this we took into consideration the ratio of day to night students. SULS has a student population of approximately 1,000 day students and 600 night students. Figure 13 shows the ratio of day to night students who participated in our survey.

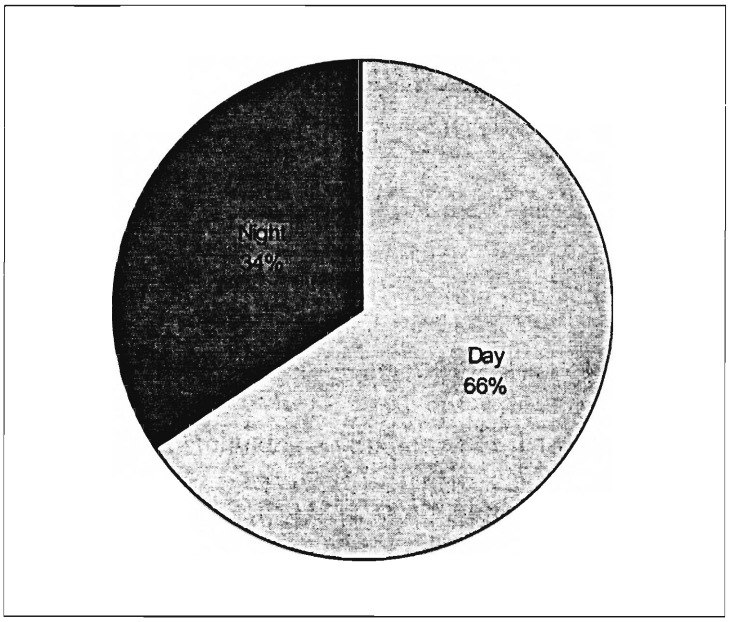

Figure 13: SULS Student Survey Broken Down by Day or Evening Students

(Total Number of Students Surveyed = 154)

The figure shows that, of our sample population, 66% are day students and 34% are night students. SULS has a student population of approximately 63% day students and 37% are night students, therefore our survey closely reflects SULS' day-evening ratio.

Once again, to achieve an accurate representation of the SULS student body, we maintained an equal distribution of survey participants between first, second, and third year students. By keeping the percentage of the first, second, and third year students fairly close we could control our sample. We wanted to make sure that no one class would sway our survey results by unequal participation. Figure 14 shows the student participation by class year.

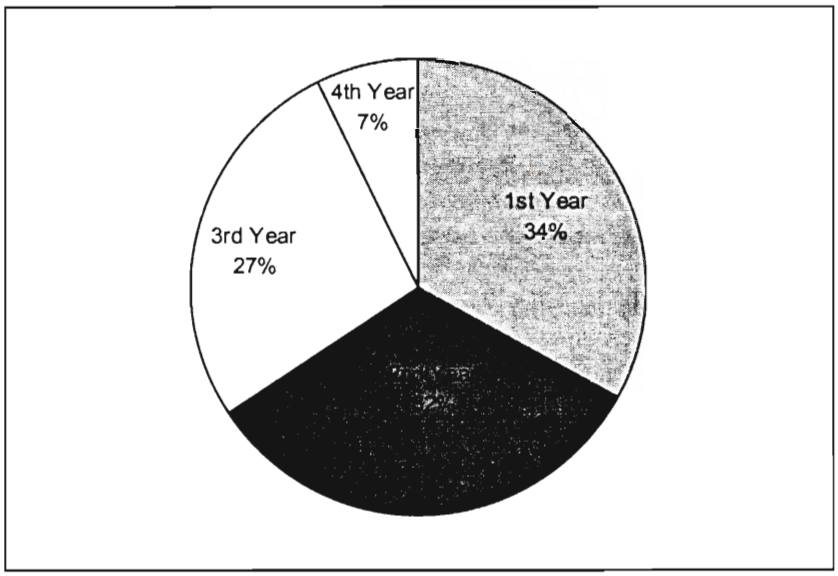

Figure 14: SULS Student Survey Broken Down by Year

(Total Number of Students Surveyed = 154)

You can see from Figure 14 that the first year is the largest portion of sample students, then second year, then third year, and finally fourth year is very small. The sample sizes are not exactly the same for a few reasons. First year through third year are all just slightly smaller than each other due to the fact that more schools loose students that drop out or transfer. This does not explain the huge difference in the fourth year though. The fourth year is small, because SULS is only a three-year school. It does,

however, have an evening program that goes into a fourth year. This fact explains why the fourth year sample is so small.

Through Figure 13 and Figure 14 you can see our survey broken down by day, evening, and year. We feel that our survey was accurately portrays the entire SULS population.

4.3.1 Do Students Improve Their Technical Skills at SULS

The first question we asked the students was whether or not their computer and technical skills had improved since they have been at SULS. Of the 154 students surveyed, 81% reported an improvement. The SULS students who wrote that their skills had improved were provided a list of software programs and instructed to check off the computer areas where their skills improved. The Figure 15 lists the areas where SULS students had improved.

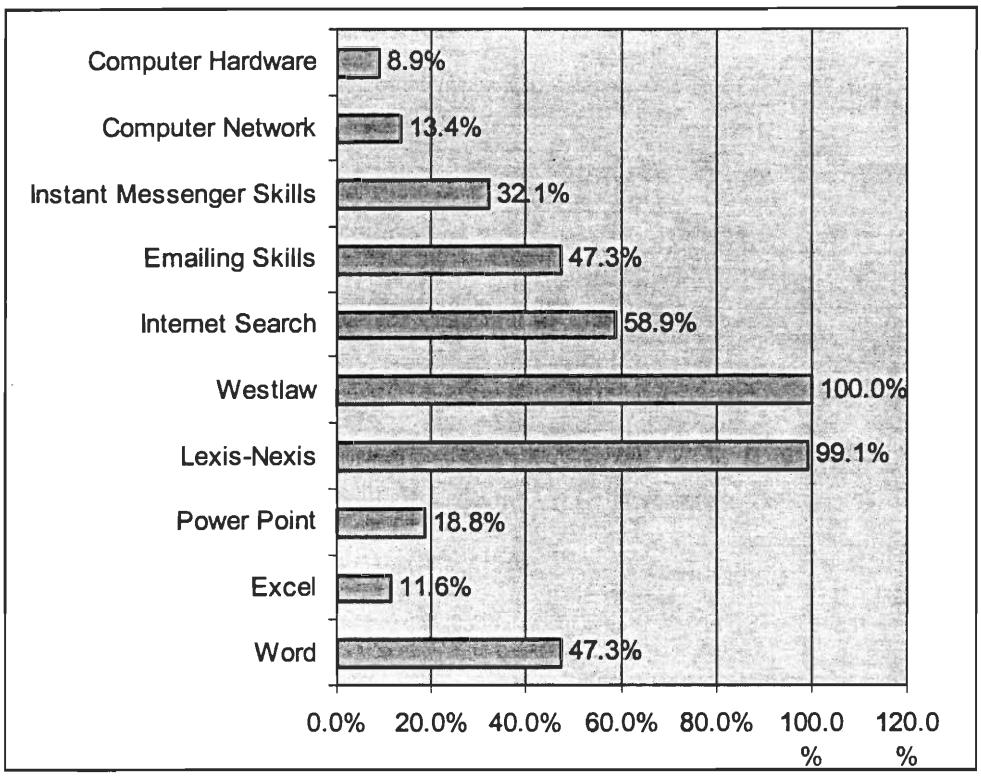

Figure 15: Percent of what areas SULS Students have improved

(Total Number of Students that said they improved = 112)

As can be seen almost every SULS student had their skills improve in Westlaw and Lexis-Nexis. SULS student next common response was Internet Search skills with 58.9%. The fact that Internet Search skills are a skill where students have improved shows the embrace of new technology by students. Students are using the Internet for school purposes.

We have established what skills SULS students have improved, so we want to find out where these skills have improved. A list of common places in and outside of SULS was provided and the responses can be seen below in Figure 16.

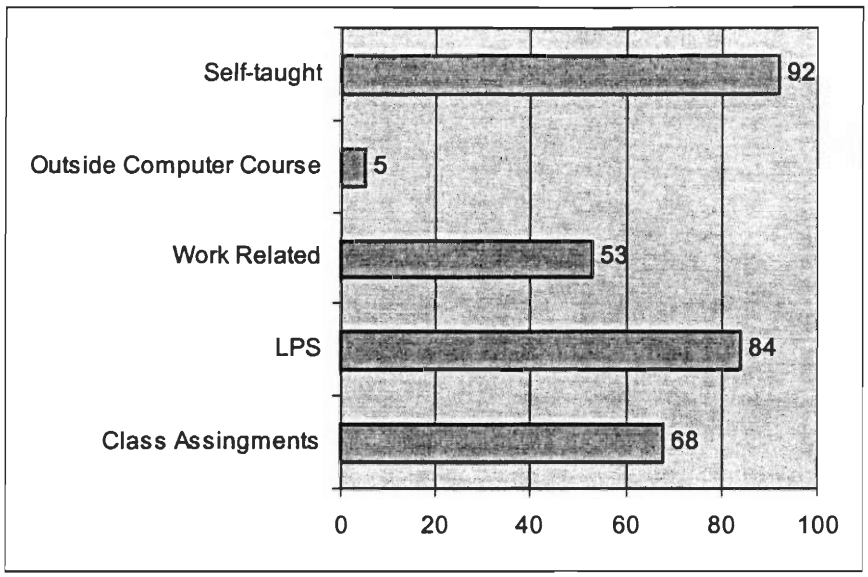

Figure 16: Number of SULS Students and how they improved their skill

(Total Number of Students that said they improved = 112)

The figure above shows that SULS students skills were improved greatly due teaching themselves as well as LPS. LPS or Legal Practice Skills is a course required that teaches students how to use Lexis-Nexis and Westlaw. To further see how these skill improvements were caused we compared solely SULS related improvements verse solely non-related improvements verse the combination of related and non-related SULS improvements. This comparison can be seen in our Figure 17.

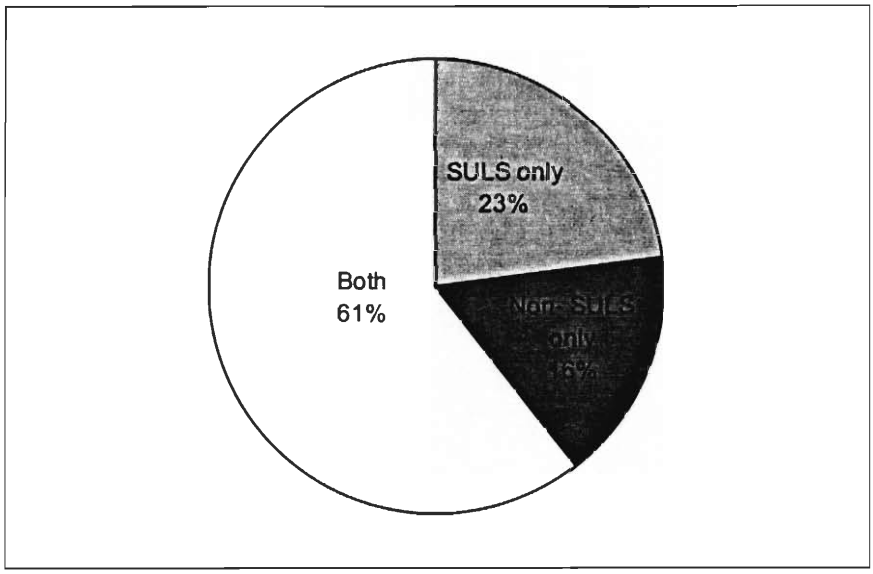

Figure 17: Percentage of where the SULS Students learn these skills

(Total Number of Students that said they improved = 112)

As you can see 61% of SULS students improved their skills through using SULS and non-SULS areas. This graph is a good representation of where these students are improving their computer skills and SULS has served an area for 84%. This graph also shows that only 16% of the students do not improve their computer skills from SULS. This is a low percentage if you consider that some students have a good background of computers. It is also possible that some of the SULS students do not try to improve their computer skill and get by on what they already know.

Our next step was to understand how much SULS played a role in improving the individual computer skills of its students. We looked at the overall improvements of the SULS students. Then, we looked at the percentage of the students that said SULS had so involvement in their learning of this material. Figure 18 shows which skills students improved through SULS.

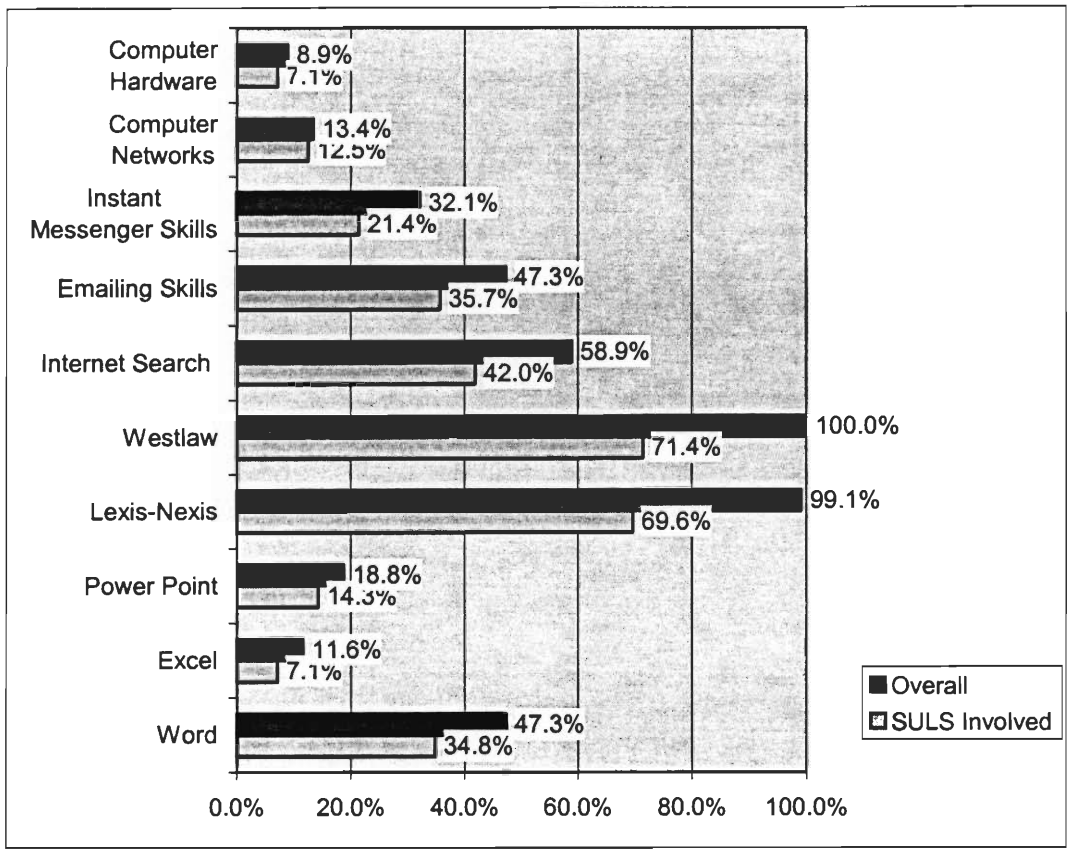

Figure 18: What areas the SULS Students improve

(Total Number of Students that said they improved at SULS = 112)

The above figure shows that SULS is responsible for improving student's computer skills greatly in Westlaw and Lexis-Nexis. This graph also shows that while at SULS the students are learning a variety of computer skills. Out of all individual computer skills that were improved on an average, about 70% of the students learned them from SULS, either from class assignments or other school related tasks. Therefore, SULS must continue to influence a large portion of the computer information passed to these future lawyers.

4.3.2 Students Laptop Use

To help us understand the use of technology at SULS by students we asked questions concerning laptop use. We asked whether the student owned a laptop and we found that of the 154 participants 82% or 127 participants owned a laptop. With the students who didn't own a laptop we wanted to know why and if they had a desktop. We found that of the twenty-five students who didn't own a laptop only two students don't own a desktop. In terms of finding out why students didn't own a laptop we discovered that twenty-two out of twenty-five students wrote price.

Of the students who did own a laptop we wanted to where they used them. We found that 127 students used their laptops in class. The students who used their laptops in class were asked how often they use it in class. The Figure 19 breaks down the responses as either always, sometimes, and never.

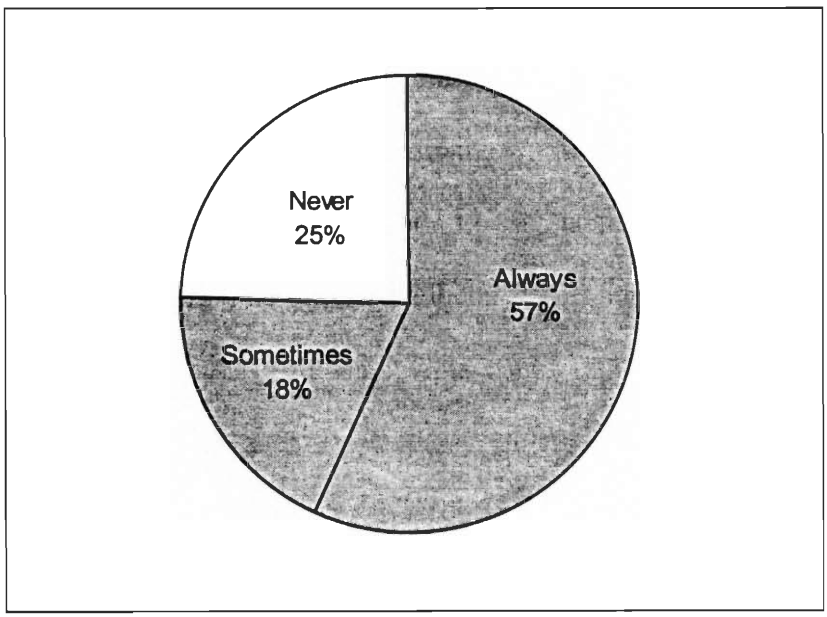

Figure 19: How often SULS Students use Laptops in Class

(Total Number of SULS Students that said they owned laptops = 112)

The above figured showed that 57% of students always use their laptops in class. There were 18% of students who sometimes use their laptop in class, and 25% use their laptops never in class. Once we determined how many people use their laptops in class and how often, we wanted to know why. Of the students who always used their laptop in class 63% wrote better note taking and 13% wrote Internet as the main benefits. Better note taking was coded as taking notes easier, faster, and better organized. Internet included using the Instant Messenger program and surfing the web. The students who responded that they sometimes use their laptop in class we asked why they use it in some classes and not others. The Table 5 lists the common responses of the students for using their laptops sometimes in class.

Responses:
Subject matter
Too slow typing
Only at end of semester
Some connections do not work
Too Heavy to Carry
When class is boring
The laptop is distracting

Table 5: Why SULS students use a laptop in some classes and not others

The table above shows a variety of responses, where 26% of the students wrote subject matter. Twelve percent wrote that they typed to slow and that's why they only used it sometimes. The students who listed that they never used their laptop in class were asked simply why. Table 6 lists the responses sorted by the most common response first.

Common Responses
Type too slow
Having the laptop in class is too distracting
Prefer handwriting
Too time consuming
Too bulky to carry with books as well
Inconvenient
Don't want to risk theft
Too much work for nothing

Table 6: Why SULS students do not use a laptop in class

The above table shows that the most common response for never using their laptop in class is typing too slowly. Typing slowly responses also included students who wrote that the professor moves to quickly to type. Another common response was having the laptop in class is too distracting, as it will cause them not to pay attention. Students also wrote that they preferred to handwrite their class notes.

After finding out how many students used their laptops in class we wanted to know how many used their laptops used them outside of class. We found that 113 students or 89% use their laptops outside of class. The Figure 20 includes the places inside Sargent Hall where students use their laptops outside the classroom.

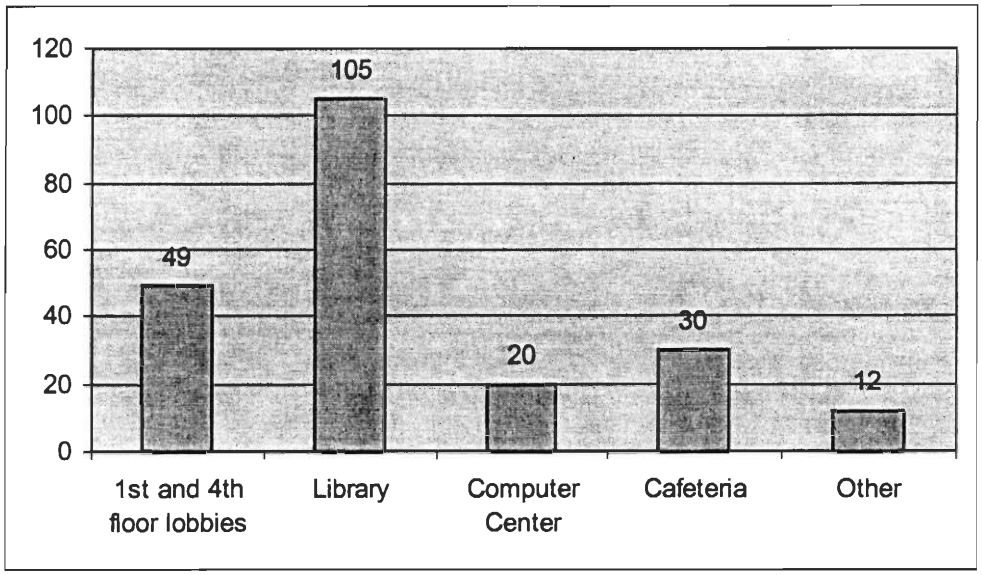

Figure 20: Number of students and where they use their laptops

(Total Number of Students that own laptops = 127)

The figure above showed the most common area for students to use their laptops was outside the library, followed by the lobbies of the first and fourth floor libraries. This data was useful because it showed where students use their laptops. We could then observe these areas to see if improvements were needed. We also asked students where they thought more nodes should be placed. The most common response was the cafeteria and then the student organization lounges.

4.3.3 Student Use of Media Services, Computer Services, and Web Page

To investigate for what the SULS students were using Media Services, Computer Service and the SULS web page, we asked them a series of questions (see Appendix F). The Media Service question was to the point and asked what they used in that

department. We gave them four choices: recorded classes, video conferencing, presentations, and other. If they did not answer the question, we knew that they did not use Media Services for anything. Figure 21 shows the response we received from the SULS students.

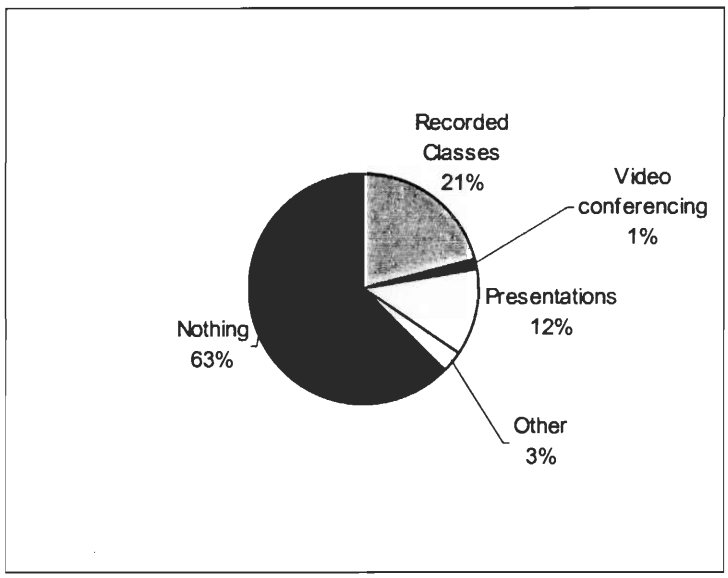

Figure 21: For what SULS students use Media Services

(Total Number of SULS Students surveyed = 154)

For this graph you can see that an overwhelming majority of the students do not use Media Services at all. This response brings up the question of why the students are not using Media Services. We saw two main responses from talking with the students that do not use Media Services. One is that they do not need to use Media Services, and they do not know what Media Services can do for them. This makes sense because Media Services goal is more geared toward helping out the faculty and any difficulty they have with the classroom hardware. From Table 7 you can see some of the small things SULS students use Media Services for.

Other responses
Moot court activities
Meetings
Poster making
Creating/Burning CD's
Organization events

Table 7: Other services the SULS students use Media Services

From this table you can see the rest of the responses form the 3% that responded with another response. This table is a good representation of the many services that Media Services offers.

Computer Service controls the computer lab in Sargent Hall and is geared more to helping the students more than professors. In our search to understand what the students think about Computer Service, we asked them a few questions. The first question we asked was for what they used Computer Services. From Figure 22 you can see that many of the students use Computer Services for a variety of reasons.

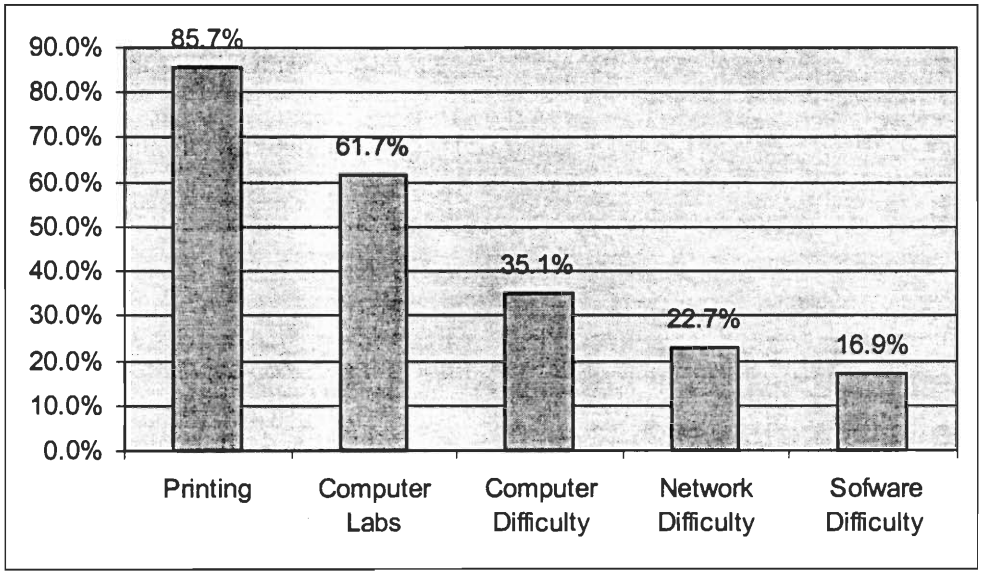

Figure 22: Percent of what SULS students use Computer Services for

(Total Number of Students that said they improved = 154)

From this bar graph you can see that students use Computer Service much more than Media Services. We expected to see that Computer Service gets more use by the students from our observations of the two departments. Just by spending a little time in both departments, you can see that there is a greater flow of students in the computer lab and hardly any flow of students through Media Services. This is because Computer Services is design to benefit the students whereas Media Services is more for the use of professors.

One of the main attractions for students to Computer Service is their computer facility. The computer labs are designed for the students to do research, work on papers, and print. As of now there is no login for the computers. We asked the students if they would mind login to the computers. We explained that by logging in would allow them to have access to private hard drive space on the network. The alternative was to leave the current setup of no login with public hard drive space. From Figure 23 you can see their response.

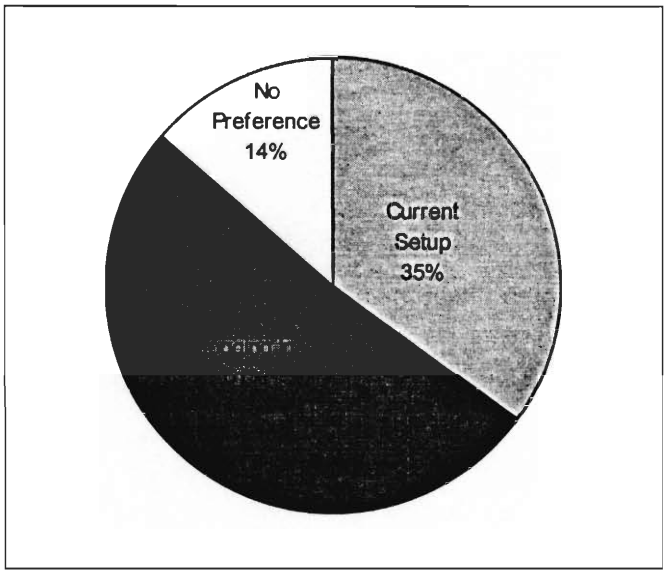

Figure 23: What the students think about logging in to computers

(Total Number of SULS Students surveyed = 154)

This graph shows that the majority, only by 1%, of the students would not mind logging on to the network. The students that did not answer the question were classified into the "no preference" section. This graph also shows that the students would appreciate the network space to save their files.

All the computers in the labs load up the Suffolk University Law Schools homepage when you start a web browser. The school takes great pride in their homepage, so we set out to discover what the students are actually using the SULS web pages for. From Figure 24 you can see what percentages of the pages get used.

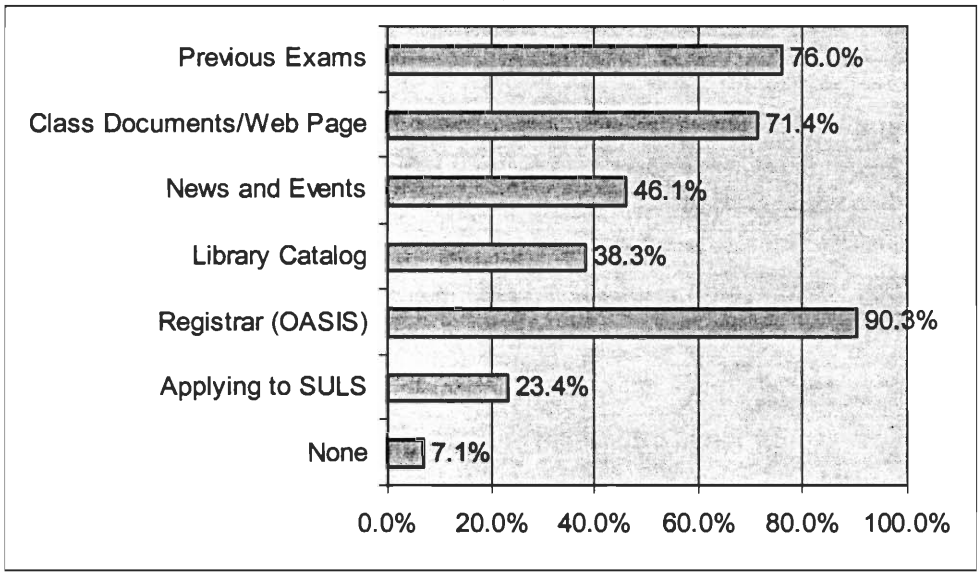

Figure 24: For what SULS students use the web page

(Total Number of SULS Students surveyed = 154)

From this graph there are two major numbers that stand out. The first is that 90.3% of the students use the OASIS and the Registrar's web page. This is due to the simple fact that the students want to know their grades and change their class. The other stat that sticks out on this graph is the 7.1% of the students that said they do not use the

web page at all. This means that only about 120 students of 1,700 are not using the SULS web page at all. Since over 1,500 of the students are using the SULS web page, it is important to keep the web page up-to-date, user-friendly, and accessible.

Personal web pages are an easy way for students to post information on the web that can be accessible to anyone. Many schools offer students some space on ability to post a web page of their own. We asked the students their opinion on whether they would use a resource like this. From Figure 25 you can see the student's responses.

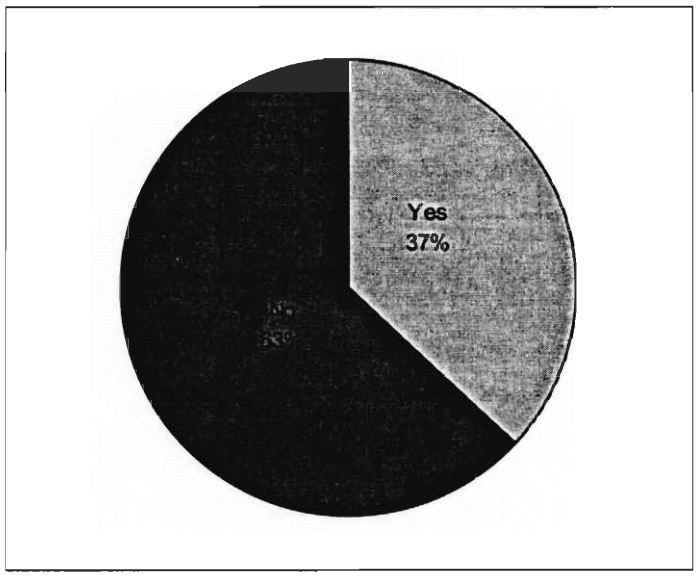

Figure 25: Would the students use a personal web page

(Total Number of Students surveyed = 154)

To our surprise a majority of the students said that they would not use a web page. If you do think about it, 40% of the students at SULS are night students and probably would not have time to set up a web page. The other percent of the students probably responded with "no," because of their lack of knowledge of web pages. They probably do not feel that a web page will help them in any way or they do not have enough experience to know how to create a web page.

4.3.4 Student Teaching Preferences

To determine the teaching styles of professors that the students preferred, we simply gave them a list and asked them to choose all of the methods that applied to them. The reason for gathering this information was to determine make a correlation between the students' preferences and the methods that the professors actually use in class. In the graph below you can see the responses we received by percentage.

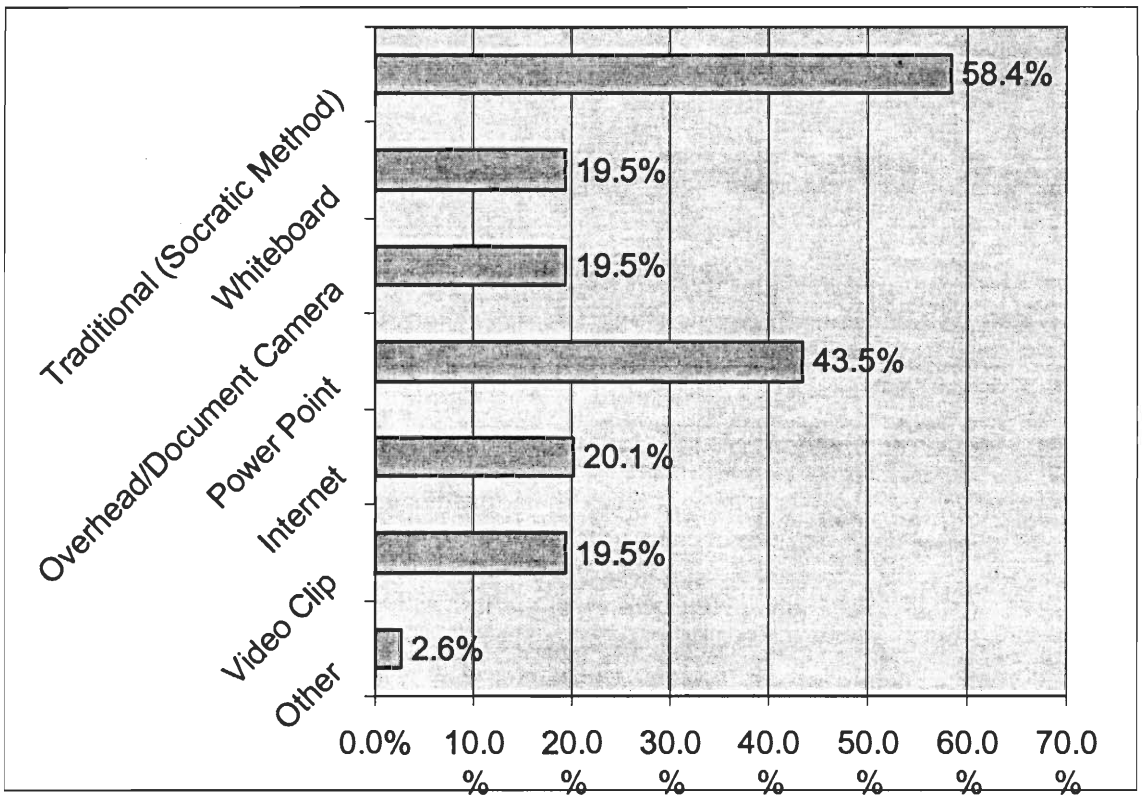

Figure 26: What teaching styles the SULS students prefer

(Total Number of SULS Students surveyed = 154)

Clearly, the favored method by students is the Socratic method. This has been the traditional method of teaching law for many years. This method consists of the professor

calling on a student in an interactive setting and involves the student with the subject matter intimately. The next favored method is PowerPoint, which is just trailing the top answer. PowerPoint is a teaching style preferred by students that is being used more frequently by professors. Overhead document camera, Internet, video clips, and the whiteboard are all equally the least favorite. The other suggestions made were classroom debates and moot courtroom exercises.

If you break down this graph by what year, you can see some trends. As students take more classes, they get more of a preference of what they learn from the best. From FIGURE you can see how the learning preference changes over the years.

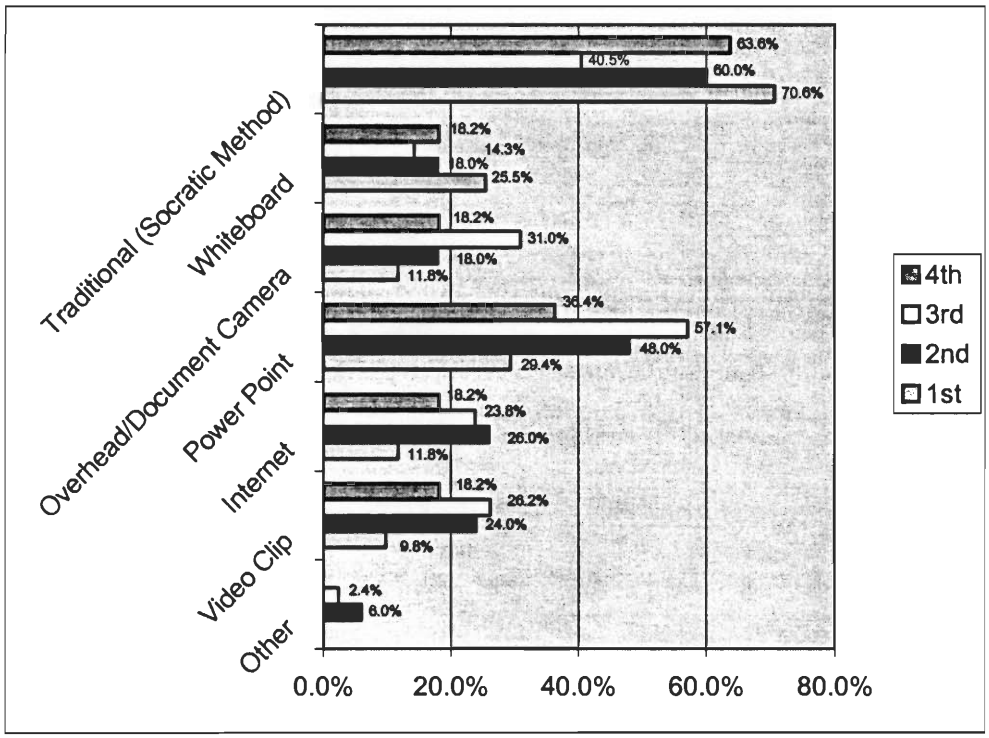

Figure 27: What teaching styles the SULS students prefer broken down by year

(Total Number of SULS Students surveyed = 154)

From this graph you can see that as the student take more classes, their preference for technology increases. The third year students actually prefer PowerPoint to the Socratic method. The fourth year students, however, seem to prefer the Socratic method like the rest of the other years. This might be due to the fact that fourth year students are night students and tend not to have the time do deal with the technology, and all the hassle that comes with technology.

In our quests to understand how the students prefer to learn, we also looked at what the students dislike in the classroom. Most of the responses were PowerPoint is sometimes distracting, turning the lights out gives a sleepy atmosphere, and malfunctioning hardware frustrates their learning.

The students still prefer the traditional Socratic method, but PowerPoint is defiantly a teaching style that all professors should consider for their classes. They must understand that they have to use PowerPoint not to entertain the students but aid in educating them.

4.4 Interview of Select SULS Professors

During the week of April 8th, we conducted ten interviews of Suffolk University Law School professors, which we selected as a representation of 59 tenure track professors. From the ten professors we interviewed, we had observed four of theses professor's classes. The remaining six professors were chosen by how long they had been teaching, and what classes they taught.

During our classroom observations and student survey we began to see a pattern of laptop misuse. The pattern was that students seemed more incline to use their laptops

for personal use if the class was more passive. This passivity can be caused through the teaching style of the professor as well as the course material. We asked professors whether they felt the use of technology was dependent on course material. The Figure 28 shows what the professors thought by percentage.

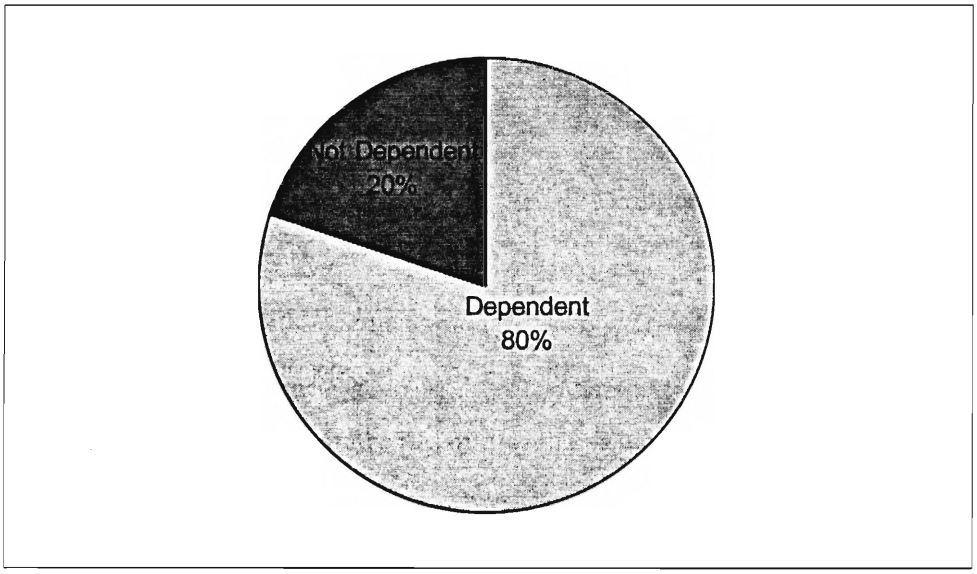

Figure 28: Do professors feel the use of technology is dependent on course material?

(Total Professors Interviewed = 10)

The figure above shows that eighty percent of SULS professors feel that technology is dependent on the course. Professors clarified this through examples of how they use technology is some classes but not others due to material. It was also noted that in the manner professors' use technology to present course material is important. Technology should be used as a tool to help illustrate an idea or concept and some courses simply lend themselves more towards it.

Since we established that the use of technology was dependent on course material, we asked professors sets of questions dealing with motivation. We asked

whether the technology in Sargent Hall motivated professors to use or not use new teaching technologies. The responses of the professors can be seen below in Figure 29.

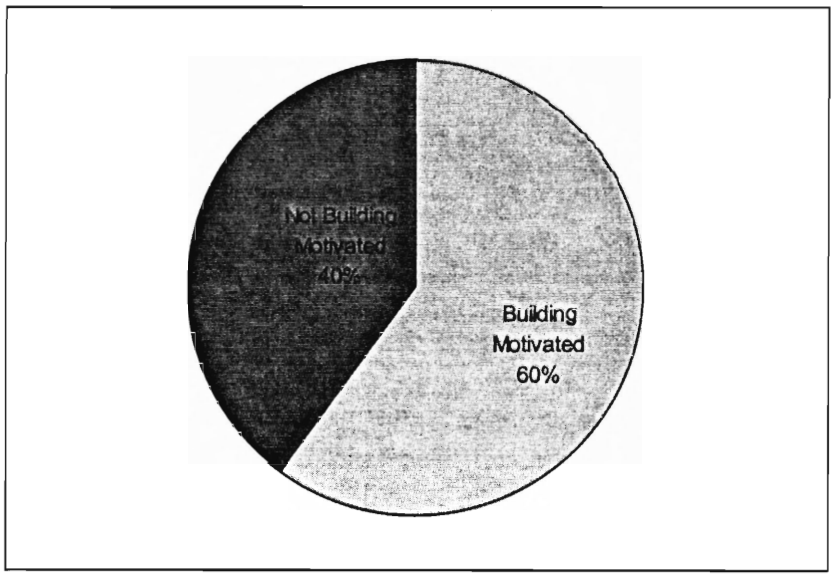

Figure 29: Sargent Hall motivated Professors to use the technology in the classroom

(Total Professors Interviewed = 10)

Figure 29 shows that sixty percent of professors feel motivated to use new technologies because of Sargent Hall. A common response from professors was that they had decided once moving to Sargent Hall using technology would be a priority. Another response was that since at first they did not know how to use the new technology it stimulated interest on wanting to know how it works. The common thread through the professors' responses was that they felt technology would make their teaching more effective.

As well as wanting to know whether professors felt motivated through Sargent Hall, we asked whether student use of technology had motivated professors to use technology. Figure 30 below shows the results.

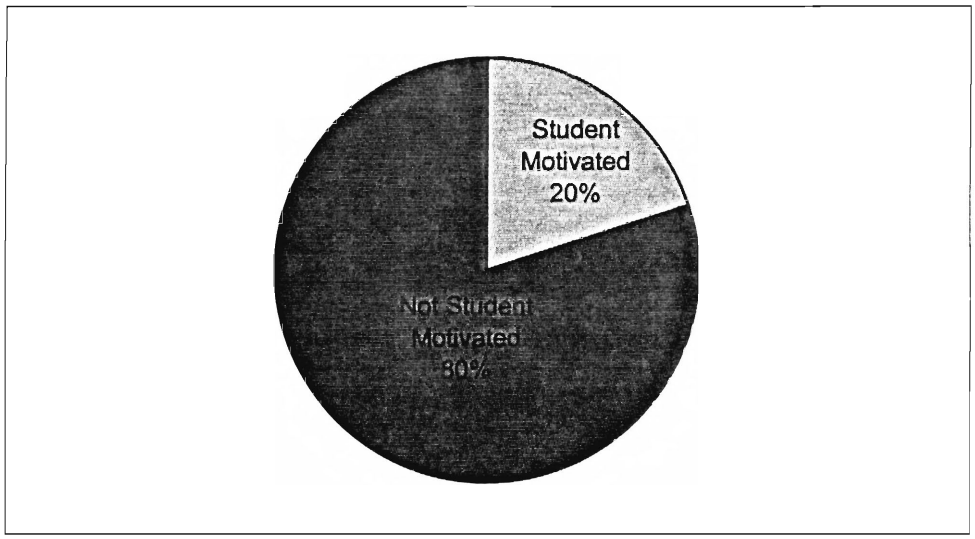

Figure 30: Students motivated Professors to use the technology in the classroom

(Total Professors Interviewed = 10)

Figure 30 shows that twenty percent of professors felt that students were a form of motivation to use technology. One professor that felt motivated made note that some of the students' technical undergraduate background was a large factor for using technology. The professor didn't want to let down the expectations of their students for not using technology. Another professor made note that they would have expected more feedback from students on using technology. They said they had used technology such as a web page, but not enough students used it.

Since SULS had invested so much into the technology at Sargent Hall, we thought it would be appropriate to ask the professors whether they were informed of any changes to technology. Ninety percent of professors said that they were informed of changes made to technology. A common response was that SULS did a really good job of informing any changes done to technology.

The second half of our interview dealt with how the professor specifically used technology. We had a list of technical devices and we noted any devices that the professors used. The breakdown of the devices used by professors can be seen in Figure 31.

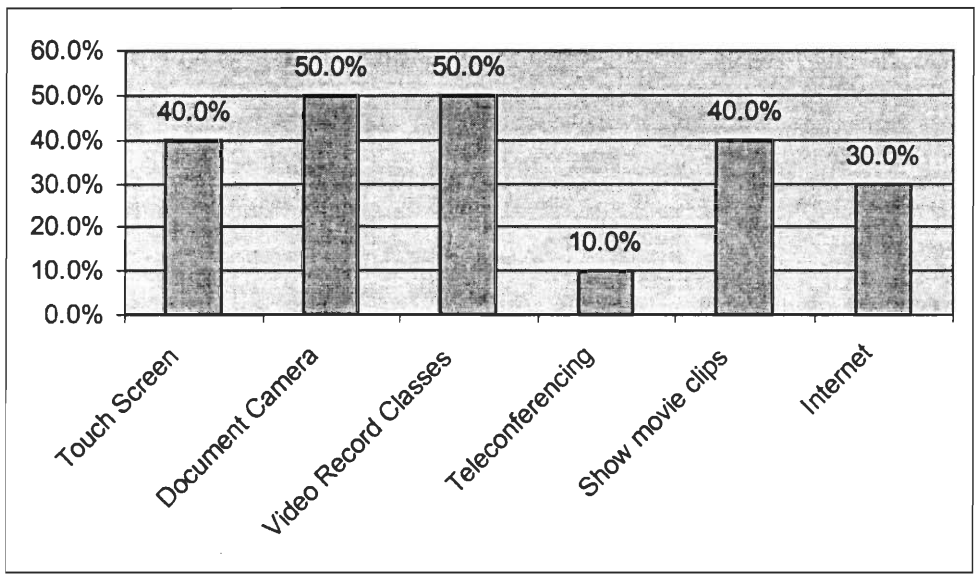

Figure 31: What professors' say they use in class

(Total Professors Interviewed = 10)

As you can see from the figure below half of the professors use the document camera. Fifty percent of the professors also video record their classes. The devices least used by professors were teleconferencing and Internet use in class. Since we found out what devices professors used we wanted to know why they used some and not others. There were a few commons patterns in the professors' answers. First, was that a particular device is not applicable in courses professors teach. Second was the combination of lack of time and knowledge. Professors didn't know how to use certain equipment and they didn't seem to have the time or patience to learn how to use some technical devices. The third pattern was that equipment did not work properly.

Professors who tried to use the Internet in class complained that it was unreliable and that it crashed. Other aspects of technology seemed to have problems. The professors' common complaint was that if they had to show a movie clip in class they had to bring the clip to Media Services a few days before. Professors could not bring a movie clip to class to show it. The main problem with bringing the movie clip to Media Services was that if the professor during class wanted to fast-forward a section of a movie that option was not available.

The next set of questions dealt with laptop use in class. We asked professors whether they allowed students to use laptops in class. The response by all the professors was yes. We then asked whether they owned a laptop themselves. The response was split half and half. Professors were then asked whether they allowed their students to use the web in class. The common response was either yes or the professors were indifferent. We wanted to know from the professors whether they gave any assignments to students that specifically use technology. Examples were given such as legal searches, and asking students to make Power Point presentations. Half of the professors replied that they did. The professors who said they didn't give assignments using technology was because it was not related to the courses they taught. Our next question asked professors whether they felt a Web page could be an effective tool in legal instruction. Seventy percent of professors thought so. Professors mentioned that it was valuable for giving out information to students. We then asked professors whether they had a Web page and why or why not. Forty percent of professors had web pages. Professors who had web pages said they were helpful to display information such as their syllabus and any pertinent articles. The common reason professors gave us for not having a web page was

lack of time and knowledge. Professors felt they did not know where to begin, and if they tried it would take too much of their time.

Our final question for the professors asked them for any comments or questions regarding technology at SULS. One professor complemented on the new document cameras stating they were a great improvement. A common response from professors was lack of training to use the equipment. They felt they needed more help, some professor's suggested "how-to" sheets to be made available. These sheets would give simple step-by-step instruction on how to use equipment. Also professors wanted a specific person to help them make web pages and convert their documents on to the Internet. As well as training professors wanted to see distance learning, more reliability of equipment, and more conversation within teachers discussing the use and abuse of technology.

5 Conclusion

During our seven weeks working in Sargent Hall, we intergrated ourselves into the workings of the building. We came to see how the students, professors, and departments functioned together in the education process. Through this understanding of Suffolk University Law School (SULS), we have assessed the technology and the usage of technology and now offer suggestions on improvements.

Our suggestions range from short to long-term. Some of our suggestions are simple improvements that can be implemented now by the staff and students. On the other hand, some suggestions involve possible future SULS projects that will take a large-scale plan to accomplish. Some of our suggestions may seem improbable to implement regarding cost concerns or timing issues, but they are proposed only to show the technological learning capacity that SULS can provide.

5.1 Short-term Improvements

Suffolk University Law School currently employs a wide range of staff and technical personnel. This staff includes people in the Media Services, Computer Services, and Library as well as other departments. Many of the suggestions we intend to list can be dealt with "in house." Some other minor improvements will just take some adjustment by the faculty and staff to work towards a more technologically literate Suffolk. These improvements will cost little money and can be implemented almost immediately.

5.1.1 Improving Communications

In order to maintain a school that is on or ahead of the cutting edge of technology, it is imperative that there is an effective and efficient means of communication between all of the members of that academic community. The academic community includes students as well as the faculty and staff. Some of the changes that need to be made involve a small hardware upgrade, while other changes only require faculty and staff to make use of existing technology.

In terms of communication, our recommendations can be broken into two categories, technical devices and the use of technology. Through our talking with students and conducting SULS student surveys, we created a list of areas in Sargent Hall where more nodes should be added. The first area is the café; currently for every booth there is only one node. We were told that new nodes were going to be added this summer but we thought it was a good idea to confirm these plans. The second area for additional nodes was in the library, specifically the study rooms. To reserve a study room in the library, four SULS IDs are needed. The problem is that the study rooms only have two nodes, with some study rooms having one node. Students complained that it's imperative to have more nodes so files, such as outlines, could be exchanged between group members. The third area was in the fourth floor lounge. In each couch and table area there is only one ac outlet and node. This means only one student can connect to the campus network. If additional nodes were added in the fourth floor lounge, students would be able to connect to the network and decrease traffic in the computer labs. One

drawback with the addition of nodes is that traffic in the fourth floor lounge may increase.

To enhance communication at SULS, we recommend the addition of email terminals. Email terminals are simple computers with the capability of only accessing email. If email terminals were placed on each floor, it would allow easy access for students. Also traffic in the computer labs would decrease. Location for these email terminals could be in the phone booth areas of each floor. One drawback with placing the terminals in the phone booth area is the deletion of space used for cell phones.

Our next set of recommendations has to do with the use of technology. We found, through our observations, student surveys, faculty interviews, and department interviews, that everyone does not use email. For the whole SULS community to have good communication, it's essential for everyone to have a SULS email account and use it. It should be required for all students, staff, and faculty to own a SULS email account. To get people to use email, class lists should be created for every class. Email would be useful at SULS because it is a commuter school. Whenever an important announcement about class has to be made, it should be done through email. With email there might be drawbacks such as abuse. The appropriate use of email should be made clear to everyone. With extended use of email the SULS community will better kept up to date, and be able to communicate better.

Course web pages can be a valuable resource. During our professor interviews we asked professors whether they felt that a Web page could be an effective tool in legal instruction. Seventy percent of professors thought Web pages could serve this function. We thought it would be a good idea to encourage professors to create and maintain

classroom web pages. Through our professor interviews we found that forty percent of professors had web pages. The reason more professors didn't have them was the lack of knowledge and time. To address this problem, we discuss training as can be seen in 5.1.2. Though training is definitely a great help, we feel SULS needs to use a program that makes it easy for professors to create and update web pages. Currently professors can use programs "Twin" and "Web Page In a Box". The problem with these programs is that, for some professors they are difficult to use. Computer Services stated that the vendors are in the process of upgrading and making them easier to use. We felt that this is a move in the right direction. We also wanted to reinforce the idea for SULS to use a Web Page creating program. Whatever program is used should make the process of creating and updating Web pages fast and easy to use.

Related to course web pages are chat rooms. A chat room allows individuals to type to each other in real time over the Internet. We feel that chat rooms could be used for professors to communicate to students. Professors hold office hours and within those hours, the professor could login to his or her course chat room. One benefit of these course chat rooms is the ability for multiple students to communicate with a professor at the same time. In some cases, professors have students waiting to see them. Some of these students may have the same question. If a chat room was utilized it would save time for both the professor and student. Course chat rooms could also be used for general class discussion. Suffolk Law students could debate and go over the merits of a case. The additions of chat rooms are not to eliminate office hours but to save time and add to the learning experience. In addition to chat rooms, SULS could implement discussion boards. A discussion board is similar to email. Individuals send a message with a subject

line. All messages sent are posted onto a web page to be viewed by everyone. Chat rooms also could be used for inter-department discussions. Through our professor interviews a suggestion was made to have department discussion boards. Each department could have a discussion board to discuss any relevant topics. There also is the option of having security for the department discussion boards. A username and password could be implemented to allow only the appropriate people to read and post messages on the discussion board. Through the addition of technical devices and further use of technology, SULS communication will improve.

5.1.2 Technology Training

After interviewing professors, a common thread appeared relating to technology. We noticed the need for more training on the technology in the building and training on the use of technology in class. Some professors felt overwhelmed by the technology, while others did not know of upgrades that facilitate better teaching methods. We feel that an increase in the variety of training will help.

Through our professor interviews, a common issue discussed was training. Professors felt they needed more training on how to use technological devices in class. Professors also wanted more training on how to incorporate technology in their classes. We believe that a series of workshops would aid professors. Each workshop would focus on a particular technical issue. One workshop would concentrate on demonstrating the technical devices in class. Each technical device would be explained and participants would be shown how it functions. Another workshop would show professors how to use

PowerPoint. The workshop would also deal with how to incorporate PowerPoint presentations in class. Professors would be shown how to make PowerPoint presentations that are effective in educating as well as entertaining. Other workshops may deal with incorporating the Internet or legal searches within class. Professors would be shown and given examples of how the Internet and legal searches can be useful tools in educating law students. A factor to be considered when offering workshops is date and physical size. Currently training programs are offered year round. Professors can individually make appointments with Media Services at any time. In the past during the beginning of the school year Media Services would make a presentation to faculty on how to use equipment. To increase professor participation, workshops should be offered at multiple times throughout the year. A possible time is the summer. We feel that, through workshops, professors will gain more knowledge on how to use technology in class. Through this increased functionality, professors will be more inclined to use technology.

Another aspect of training that would be beneficial to professors would be handouts on hardware and software. Each handout would discuss how to use a device or program in an easy step-by-step manner. An example would be a handout on a document camera. The handout would begin by showing how to turn the document camera on and then describing how to perform basic functions. The handouts goal is to refresh professors on how to use technical devices and programs.

Since handouts are a quick reference a large manual should be created. The manual would be similar to handouts but go in depth on how to use the technical devices. We created a catalog of the hardware devices in each classroom (see Appendix J), which

could serve as an outline for the manual. A key factor in the manual is easiness to understand. Since the manual is intended for practical use by professors, technical jargon should be avoided.

5.2 Mid-range Improvement

Worcester Polytechnic Institute is a project oriented, technical and engineering based college that currently has a working relationship with SULS. Before graduation, a WPI student must complete three substantial projects, two of which are usually technology based. SULS is a school that is trying to stay on the cutting edge of technology as it relates to legal education. In order to accomplish this, SULS must employ engineers and information management specialists to service their computer hardware infrastructure. With the relationship between the two institutions in place, some of our recommended solutions include further investigation by WPI students working as interns or technology consultants at Suffolk University Law School. The immediate benefit to SULS is having research done and work accomplished by future engineers for a minimal investment. The long-term benefit is the forging of a relationship between an engineering school and a law school. With the amount of technology entering into the field of law, this could prove invaluable to SULS.

5.2.1 Upgrade/ Updating Plans

After interviewing different department heads, we found that there were not too many departments with written, scheduled upgrade plans. Many of the departments upgraded solely on a visual basis. When something looked outdated, it was replaced.

While this can be an effective upgrade method, it should be a supplementary approach to a defined plan with a possible oversight. Problems tend to arise not within a specific department, but when newly created files are sent to a department with outdated equipment or software. This problem can be fixed through research and then creating a school-wide policy for an upgrade plan.

Each department has to write an annual report for the dean. We feel that the annual report should have to include an upgrade plan for technology. Each department should follow a similar upgrade format. The upgrade format should require each department to state how they use technology. This includes stating which applications each department uses, for what purposes certain applications are used, as well as how much each application is used. Departments should also include what applications will be needed in the future. Through requiring an upgrade plan, departments, on an annual basis, will judge the extent to which technology is being used and see what needs improvement.

5.2.2 Analog to Digital Upgrade

The ability to show future law students how a practicing lawyer resolves disputes can be a valuable one. There is only so much one can learn about courtroom etiquette and mannerisms from reading a book or listening to a lecture. Supplementary video clips can reinforce the techniques that are learned in a book. To be effective during class, a professor must be able to control where the clip starts and stops. In order to do this, videos must be converted into a digital format.

The current setup in Media Services allows the professor to bring in a VHS tape and they will set it up to play in class. This process makes it difficult to control playback. Using VHS tapes make it extremely difficult for a professor to fast-forward to another section of the tape to show a different clip. With digital video, a professor can use a counter or a scroll bar to move directly to the section needed. Right now, Media Services has the ability to convert any analog tape in to digital. They can store the digital video clip on a CD and a professor can just cue up this Video CD (V-CD) on the classroom PC with a video player like Window Media Player.

There are two problems with V-CDs. One is that creating a V-CD takes some time. Media Services would have to invest lots of time to turn each analog tape into a V-CD. The second problem is that V-CDs are do not have the best quality. CDs are limited for space, and quality is sacrificed for more video time.

To fix the problem of poor quality from the V-CDs, you could upgrade to Digital Versatile Discs (DVD). A DVD can hold ten times more than a V-CD, which translates to perfectly sharp, full-length film with full surround sound. Upgrading to DVD means that Media Services will need a DVD burner, to create and transform the VHS tapes to DVDs. Also, every PC in all the classrooms must be equipped with a DVD player for the professors to play these discs.

Now that we have covered how to play recordings in class, the second part of upgrading to digital is digitally recording a class. The benefits of digitally recording a class are that anyone with a fast enough Internet connection can view it at anytime. You could just post the digital video of the class on a course website for any student to access.

This eliminates the need to put a recorded class on a tape in the library so only one student can watch it at a time.

Two changes have to be made for this upgrade to take place. First, only some of the classrooms are equipped with digital video cameras. The remaining analog cameras need to be upgraded. The second, and most import, project is setting up a computer server to hold all these video classroom recordings. A full hour of class on video is going to take up huge amount of hard-drive space. This video server will need an extreme amount of maintenance to make sure that old, useless videos are removed.

Another consideration is whether to offer these videos on the web. Broadcasting these videos would bring the current Internet connection to a standstill. If you were to only keep broadcasting within Sargent Hall the internal network could handle it, but if you did want to send it out on the World Wide Web, you might consider getting an Internet Service Protocol (ISP) just for the video server. This way it would not slow down the school's Internet connection.

To sum up, an analog to digital upgrade will make video clips simple to use in the classroom and offer a better quality of video.

5.2.3 Hardware Database

When working with Media Services we started on constructing a hardware database. The database hold information about the hardware in the classrooms inside SULS. This information can be seen in Appendix J. After entering the information into the database including a picture of each classroom a separate web page was to be created.

This process was not fully completed and left for Media Services to complete. The database and Web page once finished will help Media Services and other members of the SULS community know what specific hardware is in each classroom. The whole process of entering data and constructing web pages was to be an automated process. At first glance this seemed very reasonable, but once constructing the database, the process of automation was difficult. We recommend that this project be continued and include other aspects. Media Services intended the database to eventually include all buildings Suffolk University. Once each classroom had its own web page, an option would be added to allow faculty to contact Media Services with any classroom problems over the web. The option would be easy for faculty to report any problems, and Media Services would be able to respond quickly.

5.2.4 Web Page Improvements

Suffolk University Law School owns and operates its own web page. (http://www.law.suffolk.edu/index.cfm). It is used for primarily prospective students who are considering applying to SULS. Internally the web page is used by the students to check grades and by the professors to post announcements of upcoming seminars. Students also use the web page to access the Law Library web page. Departments such as Admissions and the Registrar's Office use the web page to post their own announcements. Although the web page is used by almost 93% of the student body, this technology could be expanded to become the central communication hub for the school.

Professors should be encouraged to build and maintain a structured web page for all of their classes. The web page should be formatted exactly the same for every class to increase the ease of use. Students will be able to get their assignments online in every class and not have to search to find where the assignment section is for each individual professor's web page.

Another web improvement that needs to be made is a better search engine. Currently, the search engine will search any folder on the network. Because the only criteria the engine looks for is a keyword, you many times receive useless documents pertaining to school policies when you are searching for a previous exam. Different search engines that search individual folders may be a better option than having one engine that searches all folders.

The last suggestion for improvement on the web page is to implement some type of written policy when a change to the web page needs to be made. Strict guidelines should be instituted when a change is necessary to the front page. Nevertheless, there must be a protocol and a way to change it. An effective web page can be modified to adapt to the current needs of the users.

5.2.5 Network Improvements

Throughout our seven weeks working in Sargent Hall, we noticed that the students do not have a specific logon name and password. They simply logon as guest with no password. If a student logs on as guest and intentionally crashes the network, it

makes it difficult to track whom actually crashed the system. Therefore, for security reasons alone, it would benefit to know where, when, and who signs on to the network.

We propose that all students be given individual login accounts with individual passwords and that all generic logins, such as "guest," be eliminated. By doing this, the school can always tell whom, where, and when a user plugs into the SULS network. It also allows Computer Services to monitor their own lab computers and printers to make sure that no one is abusing either.

From our work in the departments, the librarian and the head of Computer Services mentioned that they would be interested in knowing how much each student prints. Printing can be monitored once students login and they print a document. From our surveys of the SULS students we asked them a single question regarding logging on to the network. FIGURE 23 shows that of the 154 students surveyed, 51% said they would not mind logging in if they could have their own personal space on the network.

To get all of the students to login to the network every time they connect their computer or go into a computer lab, two things need to be done. First the network has to contain information about each student. Student information should include each student's user name, his or her email address, and each student account must be given a password. This may take some time to enter every student in the school, considering there are over 1,600 students at SULS. The real problem lies in informing the students that they have to login with their personal account usernames and passwords. We propose a four-year plan to accomplish this second task. The students that are already at the school and login under "guest," should just be phased-out. It would take too much work by Computer Services to make sure that all the current students know their new

password and usernames. We suggest that the future incoming classes follow this new network setup and as the current first year class graduates in three to four years, there will no longer be a need for this guest account. At that point, all the computers in the labs can be changed to the new network setup, completing the upgrade.

This change comes with few drawbacks. One is the time it will take to accomplish. Four years to see all the students changed over to the new network system is an extremely long time for one change to take place. Other possible plans on informing the current students might be looked into to improve this time. Another drawback of this improvement is that you do not know what the students do when logged in. This improvement allows you to know when, where, and who is on the network, but if you wanted to know what each student was doing while logged on, you would be testing privacy issues. If this needs to be done a network "conditions of use policy" needs to be added to the student handbook.

The main benefit of this network upgrade is minor monitoring of the students' behavior on the network. By making this change, you can monitor who is on the SULS network, when students are allowed on the network, and where students logon to the network. In the labs you can also monitor printer activity. It will be possible to see how much a student is printing to make sure they are not abusing the printing privileges and printing too many pages.

5.2.6 Student Laptop Use in Class

During our seven-week work period at SULS, the professors and faculty brought up an issue of debate involving the students' laptop use in class. Through our class observations and professor interviews, we found that the faculty was concerned that the SULS students were using their laptops in class to surf the web and check email. We found that there is now simple solution to this problem and offer our opinion of what to do.

In our opinion, this should be a "non-issue." In an institution of high learning, such as SULS, the students are only there to learn. If a SULS student wants to spend money just to go to class and surf the web, we feel that you should let them. The student is making a conscious decision not to take part in class. It is the professor's job to aid in the students learning of the course material, but is not the professor's job to make sure that they pay attention during class.

However, if a student does stray from paying attention in class, he might distract others. This is the one problem we see as an improper use of the Internet in class. In this case, we suggest that there be some policy in the "SULS Student Handbook" on "Proper Laptop Use in the Classroom." This policy should address issues on offensive materials and the right that a professor has to ask the students to disconnect from the Internet during his or her class time. This gives the professor an option to stop improper use of the Internet in class and the ability to say, "It's in the handbook."

As an extreme measure, if a professor feels that many students are distracting others with their improper use of the Internet, you might consider installing switches into

every classroom that shut off the Internet connection for all nodes in the classroom. If a whole class is miss using their Internet privileges, the professor can easily shut it off.

During our student survey, we asked the SULS students if they thought the professors should be allowed to shut off the Internet in the class. 60% of the students said "no." The remainder, who said it was alright if the professor could shut the Internet off, said they found it distracting.

When we posed this same question to the professors during our interviews, we found somewhat different results. One out of the ten professors interviewed said it should be shut off. Two out of the ten said absolutely do not turn it off, and the remaining seven had no preference. We saw two strong viewpoints on the subject, but the most interesting views came from the professors that had no preference. Some of them said that it was the professor's job to teach in a manner that would force the students to pay attention. Other professors said that, if the students were using their laptops for personal use, it was the students loss and why should the professor waste their time worrying about it.

The one thing that has to be understood before any real decision is made is that by putting the Internet in the class, you allow students the opportunity to gain knowledge beyond the classroom walls during a lecture. The Internet is a limitless supply of information, and by shutting the Internet off in the classroom, a professor is saying, "You are ONLY going to learn what I want to teach you in class."

5.3 Long-term Undertakings

The final suggestions for improvements that we have will need to be investigated by outside companies. These will be major undertakings that will need paid, contracted professionals to be completed. The improvements will also require additional hardware and forward planning to schedule time and money.

5.3.1 Department of Academic Technology

With all this new technology, SULS is aware that they need someone to oversee that technology that is used to aid in the education process. SULS is currently looking to find someone to fill the position of Director of Academic Technology. A copy of the job description is in Appendix K. The main job of this person entails managing technology in education, assuring the effective use of technology for legal study, and integrating of educational technology into the academic programs.

After reading the five-page job description for the Director of Academic Technology, we feel that the school would greatly benefit from an entire department dedicated to Academic Technology. This would allow for a greater opportunity for improvements.

In addition to the Director of Academic Technology, we see the opportunity for two other individuals under him. One person to act as a Classroom Technology Assistant and another person should be Web Information Assistant to the professors.

The Classroom Technology Assistant should work with the Director of Academic Technology, Media Services, and Computer Services closely to accomplish:

- Preparing and maintaining a detailed manual on the use of all classroom hardware and how it can be effective in a teaching environment;
- Preparing and maintaining a detailed manual on how to use PowerPoint effectively in a classroom lecture;
- Preparing and maintaining a detailed manual on how to effectively incorporate advanced technologies into the classroom, such as video clips and the Internet;
- Teaching periodically scheduled classes on classroom hardware, PowerPoint presentations, and advanced integration of technology in education;
- Working with the professors on an individual basis, to assist them in incorporating more technologies in to their teaching styles.

The Web Information Assistant should work closely with the Director of Academic Technology and the Web Master to accomplish the following tasks:

- First create and maintain a Department of Academic Technology Web Page by converting the Classroom Technology Assistant's manuals into online documents;
- Creating and maintaining a generic template for all course web pages that will meet all the needs of every professor;
- Teach scheduled class on how to use this course web page template to its fullest potential;

- Work with the SULS committees to produce individual web pages that suit each committee's needs;
- Work with the professors on an individual basis, to assist them in getting their course on the web.

Many universities have a Department of Academic Technology to accomplish such tasks. For example, Cornell University has an Academic Technology Center. Their web page can be found at http://www.cit.cornell.edu/atc/. Their site contains information on course support, consulting, training, and online materials. They use this page to post announcements and future workshops. The goal of SULS' Department of Academic Technology should be to have a web page such as Cornell's.

5.3.2 Paperless Work Environment

A paperless work environment can be an effective way to communicate in any business. We found, through our observations, student surveys, faculty interviews, and department interviews, that everyone does not use email. For the whole SULS community to have good communication, it's essential for everyone to use their SULS email account.

A future goal of SULS should be to have a paperless work environment, not only for memos but also for any business that needs to be conducted. Committee and department mailing lists should be setup, and memos should be sent through emails instead of hand-typed. If a department has to institute a new policy, one simple email to the whole department needs to be drafted and sent out. There is no need to print out the form, have it photocopied and then make sure everyone gets it.

Many other things can be done electronically such as the scheduling of classrooms. Through an online database of classrooms, and a web page, you could just submit the time you needed a class, the purpose, and size of the class and software would find the appropriate classroom and schedule that slot. This would save you the time of going to the registrar's office and filling out a classroom request form. It would save the registrar the time it would take for her to look through all the classes and find one that fits your criteria.

There are companies that specialize in companies going paperless. One for example, is Paperless Archive Master Inc. They help companies get from paper, books and publications to online documents, electronic publishing and electronic catalogues.

Through our interviews, professors made comments stating that, whenever an important notice is put out, it has to be delivered in paper form as well as email. This bothers them because the electric copy is enough for them.

It might be possible for SULS to get to a paperless environment by themselves, but we suggest that they do look for some outside help for suggestions on the best way to cut back on the paper documents.

5.3.3 Wireless Internet

When SULS decided to build Sargent Hall, it made an effort to stay at the top of the curve in terms of technology. Connecting to a campus network was typically done through laying wire and creating nodes. Currently many companies and institutions are going wireless. Wireless transmission allows anyone to move around and not have to be connected to a port through Ethernet cable. In this section of our recommendations we

discuss how wireless technology could be used at SULS including the benefits and drawbacks.

The attraction of having a wireless network is the ability to move around. Students, professors, and staff would be able to move in any part Sargent Hall and connect to the network. A benefit of creating a wireless network is the elimination of having to create new nodes. We made recommendations on where new nodes should be added. If SULS would develop a wireless network this problem would be solved. A benefit of wireless networks is the elimination of Ethernet cable. SULS wired Sargent Hall with an incredible amount of Ethernet cable. If the Ethernet cable standard should change, then the whole building would have to be rewired. Going wireless would eliminate the need to rewire.

The drawbacks of a wireless network are related to technical problems. In some wireless networks, objects such as furniture and tables can intrude the signal. This causes individuals to have difficulty connecting to the network. Throughout Sargent Hall, there are lounges with objects that may interfere with the network. Security is another issue in terms of wireless networks. Usually when a wireless network puts out data waves, the waves go farther than what they need. So the data waves could be scanned from outside the building. This means individuals outside Sargent Hall may be able to get on the SULS network. Planning a wireless network for Sargent Hall may be a task itself. One has to calculate how the radio and data waves will transmit.

There are benefits and drawbacks to going wireless. SULS in the long run will have to determine whether it's beneficial.

5.3.4 Distance Learning

Distance Learning is a new and upcoming method of teaching that is available to both professors and students. This method allows students across the country, and even across the world, to communicate with one another visually in real time. It also allows professors to teach two classes simultaneously. For one class, he or she may be physically present, but the other class may receive a broadcasted image of the professor. This technology will give schools the ability to give the best education on a very defined subject matter to their students.

Currently the Suffolk's Sawyer School of Management uses distance learning. The Center for Interactive Distance Education (CIDE) has been offering services for five years. The law school should make an attempt to begin relationships with other schools to begin distance education. One benefit of having distance education in law is specialty. Some courses in law are specialized and some law schools may not be able to offer theses courses. If SULS had a course not offered in other law schools they could develop a relationship and transmit their classes. The opposite would apply as well. A law school may offer a course not offered at SULS, so distance education could be used.
There are some drawbacks to distance educations such as whom owns the rights to courses taught. Currently this issue is being addressed and will hopefully be solved. Overall distance education seems like a perfect fit for SULS. It will help students become better educated and professors teach in new fashions.

5.4 Conclusion Summary

Throughout a seven-week study period, Suffolk University Law School has been observed as a extremely technologically sophisticated institution that is committed to providing its students with the future technology of the law industry. The one problem with technology is that it is always changing. In order to keep up with changing technology, constant updating is a necessity. If Suffolk is to remain one of the top technically literate law schools in the country, it must aggressively pursue the newest technology and it's applications in legal education.

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7 Appendices

7.1 Appendix A – Rissmiller Interview

Interview with Prof. Kent Rissmiller

Wednesday, February 8th, 2001

On Wednesday the 8th of February, we held an interview with Prof. Rissmiller. He had us explain the parameters of the project and then we gave our interpretation of the agreement between WPI and SULS. Prof. Rissmiller gave us a brochure on the pre-law program and then went on to discuss how law school works. To apply to law school one needs to have an undergraduate degree or close to completion of one. One must also take the LSAT. Prof. Rissmiller told us that about 10% of lawyers have science degrees and about 5% have engineering degrees. The involvement of the WPI-SULS agreement typically includes one or two people each year. Currently the first program participants are seniors at WPI. We asked what the benefits of the agreement are because if one had the requirements for the agreement they most likely would be accepted to SULS anyway. Prof. Rissmiller explained that there is no other school that would state, in writing, if one attains a certain GPA and a LSAT score they will be guaranteed admittance. Through the agreement there is a guarantee for admission as long as the student fulfills the requirements. Prof. Rissmiller told us that about twenty to twenty-five percent of WPI alumni take the LSAT's each year. We asked why the number of people involved in the program was so few. Prof. Rissmiller stated the their was a small target audience, most high school seniors aren't considering law as a profession. Those individuals that are

looking at the law field would most likely be looking at schools with a more liberal arts oriented curriculum.

We asked Prof. Rissmiller what improvements could be made in the WPI-SULS agreement. Prof. Rissmiller answered that both SULS and WPI could make improvements. SULS could make a better effort to publicize the agreement through its alumni connections, such as newsletters and dinners. WPI Admissions could better publicize this option to students viewing the school. The problem, Prof. Rissmiller stated, was that WPI Admissions had questions about cost effectiveness.

We asked Prof. Rissmiller what his view on technology in legal education and in the legal field was. He stated that law schools are pushing to train their students in the use of electronic courtrooms, through managing electronic documents, presenting evidence, and overall visual representation. Prof. Rissmiller stated that most courts are changing from the older system of displaying evidence through photographs and using easels, to using video to present evidence, and technology such as computers to display evidence. He also stated the need for lawyers and judges to become acquainted with the new technology. For example, judges will need to be familiar with new technology to make decisions on which evidence is admissible and which legal experts are valid. Prof. Rissmiller also stated, in terms of technology in education, it seems dependent on how it is applied. For some courses, technology may serve as a burden and could take away from the learning experience. In others, it gives students accessibility to information that previously was not before. We concluded our interview by asking for a copy of the WPI-SULS agreement. Upon receiving the document we thanked him for his time and we left.

7.2 Appendix B – WPI Student Survey Plan

Sex _____

What is your age? _____

What year are you in at WPI? _____

What's your major? _____

Are you thinking about going to grad school? _____

Are you thinking about going to law school? _____

If you are planning on going to grad school, what is your first choice? _____

Why do you want to go to this school? _____

How did you hear of this school? _____

If you are planning on going to grad school, what is your second choice? _____

Why do you want to go to this school? _____

How did you hear of this school? _____

If you are planning on going to grad school, what is your third choice? _____

Why do you want to go to this school? _____

How did you hear of this school? _____

Have you heard of Suffolk University Law School? _____

If yes, do you know about the about WPI and Suffolk agreement? _____

Are you interesting in knowing more about the WPI pre-law program, SULS or Both? __

7.3 Appendix C – Daily Work Schedule

WPI Student Daily Schedule (flexible)

9:00 Morning Group Meeting - go over daily tasks

9:45 Morning Meeting with Dean Deliso

10:00 Project Work

12:30 Lunch

1:00 Working in Departments

4:30 Afternoon Group Meeting - recap the day and discuss ideas

5:00 Leave SULS

7.4 Appendix D – Interview with Key Department Heads

Department: _____ Title: _____

How long have you been working here? _____

What is the goal of your department in terms of technology and use of technology, e.g. keeping an up-to-date web page? _____

_____

_____

How does your department use the current technology to meet your goals? _____

_____

_____

Do you, the law school, or the University have an upgrading/-updating plan for technology in your department to meet your goals? _____

_____

_____

How do you and staff receive training for this technology? _____

_____

_____

Do you see any further problems with technology in your department that could be further researched? _____

_____

_____

7.5 Appendix E – Classroom Observation Form

Date: _____ Department: _____

Time: _____ Class Title: _____

Room Used: _____ # of students: _____

Class Year: _____ Prof. Name: _____

Additional faculty present: _____

__ subject matter includes technology

__ offers online course documents in class

__ uses touch screen

__ uses document camera

__ uses internet

__ uses movie clips

__ uses PowerPoint

__ uses microphone

__ involves the class

__ involves the class with Internet searches

__ number of students using laptops

__ number of students using laptops for personal use

COMMENTS:

7.6 Appendix F – SULS Student Survey

Student Technology Survey

The main goal of this survey is to benefit the students by obtaining suggestions on technological improvements at Suffolk Law.

We are students from Worcester Polytechnic Institute working on a project with Suffolk Law to evaluate the technology in Sargent Hall. One of our main goals is to study the use of technology in the classroom both by students and professors. This survey is designed to assess how students are using technology in their classes. Also we want to find out what the students think about the technology that the professors are using. We are also looking for improvements on all levels that could be made to benefit both students and professors in the learning process.

This survey is **TOTALLY CONFIDENTIAL**

Feel free to write in comments/opinions on any of the questions.

Gender: __ Female __ Male

Age: _____

Student: __ Full-time Day __ Full-time Evening

Year: __1st __2nd __3rd __4th

Concentration: _____

1. Has your computer skill level improved since you have been at SULS? __YES __NO (If NO skip to question 2.)

1a. In what areas has it improved?

__ Microsoft Word
__ Microsoft Excel
__ Microsoft Access
__ Microsoft Power Point
__ Lexis-Nexis
__ Westlaw
Other software programs _____
__ Internet Search Skills
__ Emailing Skills
__ Instant Messenger Skills
Other Internet skills _____
__ Computer Networks
__ Computer Hardware
Other hardware _____
Other _____

1b. Since you've been at SULS, what have been the main ways in which you have learned these skills?

__ Class Assignments
__ LPS
__ Work related
__ SULS Computer Course
__ Computer Course outside the school
__ Self-taught
__ Other _____

2. Do you own a laptop? __YES __ NO (If NO skip to question 2c.)

2a. If you own a laptop, how often do you use your laptop in class?

__ Always ---------- What are the main benefits? _____
_____

__ Sometimes ---------- Why in some classes and not others? _____
_____

__ Never ---------- Why not? _____
_____

2b. If you own a laptop, do you use it in areas of the building other than the classroom? __ YES __NO

2b-i. If yes, where do you use it?

__ 1^{st} – 4^{th} floor lobbies
__ Library
__ Computer center
__ Other _____

2b-ii. Is there an area of the building that you would like to be more connected?

__ Student Org. Lounges
__ Cafeteria
__ Other_____

2c. If you DO NOT own a laptop, do you own a desktop? __ YES __ NO

2d. If you DO NOT own a laptop, what factor kept you from buying one?

__ Price
__ Don't think it's useful
__ Don't know enough about laptop
__ Other _____

3. If you have ever used media services, please list the reasons.
__Recorded classes
__Video conferencing
__Presentations
__Other _____

4. What have you used Computer Services for?
__ Printing
__ Computer Labs
__ Computer Difficulty
__ Network Difficulty
__ Software Difficulty
__ Other _____

5. If you have used the computer lab, would you prefer the computers to have:
a. the current setup on the computers. (No login and No password, but VERY RESTRICTED ACCESS to programs and NO SPACE to save documents.)
OR
b. to login every time with your Email Name and Password, but have FULL ACCESS to programs and SPACE to save your documents.

6. If SULS offered the ability for you to have a personal web page, would you utilize it?
__ YES __ NO

7. For what reasons have you used the SULS web page?
__ None
__ Administration (Applying to SULS)
__ Registrar (OASIS)
__ Library Catalog
__ News and Events
__ Class Documents/ Course Web pages
__ Previous Exams
__ Other _____

8. Of the classroom techniques used by your professors, which do you learn from the best?
__ Traditional (Socratic Method)
__ Using solely the Whiteboard
__ Using the Overhead Projector/Document Camera
__ Using Power Point Presentations
__ Using the Internet
__ Showing a video clip
__ Other _____

9. List any classroom techniques involving technology that you find distracting? _____

_____

10. Do you feel that the professor should be able to disconnect student access to the Internet in the classroom? Why or Why not? _____

_____

_____

_____

11. What improvements would you like to see made to the technology and/or physical plant of Sergeant Hall? _____

_____

_____

_____

7.7 Appendix G – Professor Interview Invitation Letter

Prof. _____

We would like you to participate in our study of technology here at Suffolk University Law School. We are the Worcester Polytechnic Institute students working with Dean Deliso. Our goal is to evaluate the use of technology by both students and faculty throughout Sargent Hall. During the next week we will be conducting interviews of the resident faculty.

We would like to set up a 20-30 minutes interview at your convenience. Topics of discussion will include technology use in the classroom by students, Internet use at Suffolk University Law School, and other aspects of technology here in Sargent Hall.

We are very flexible with time, and if your office is not a convenient place for this interview, we will be more than happy to find an alternate location.

Please reply to any of us by email (bullmac@wpi.edu), by stopping by our office (#460) or calling (ext. 8096). We will be more than pleased to set up an interview.

We appreciate your time and look forward to hearing from you soon.

Thank you,

Todd Blain

Marc Bullio

Dan Tromp

7.8 Appendix H – Interview with Select SULS Professors

Name: _____ Date: _____ Time: _____ Office: _____

Age: ____ Years worked at SULS: _____ Course Web Page: _____

What is your opinion on the new technology in class? Do you feel it helps in the education? _____

_____

Do you feel that the use of technology is dependent on course material? Why? _____

_____

_____

Has the technology in Sargent Hall motivated you to use or not use new teaching technologies? _____

_____

Have the students using the new technologies motivated you to use or not use them? ____

_____

Does the school inform you adequately of changes made to technology? (Such as Hardware/Software upgrades) _____

_____

_____

How do you use or incorporate technology in your lectures? (Microphone, Document Camera)

__ uses touch screen __ video recorded class __ Show movie clips

__ uses document camera __ use teleconferencing __ Use the Internet

On average how often do use these devices? (e.g. Once a week.)

_____ uses touch screen _____ video recorded class _____ Show movie clips

_____ uses document camera _____ use teleconferencing _____ Use the Internet

Why do you use some and not others? (e.g. Did you know they are available?) _____

_____

_____

Do you allow your students to use laptops in class? _____

Do you use a laptop yourself? _____

Do you allow your students to access the web in class? _____

Do you communicate with your students via email for assignments? _____

Do you give any assignments to the students that specify that they use technology (legal searches, Power Point, Word…)? _____

_____

Do you feel that a Web page can be an effective tool in legal instruction? Why? _____

_____

_____

Do you have a web page? Why or why not? _____

_____

_____

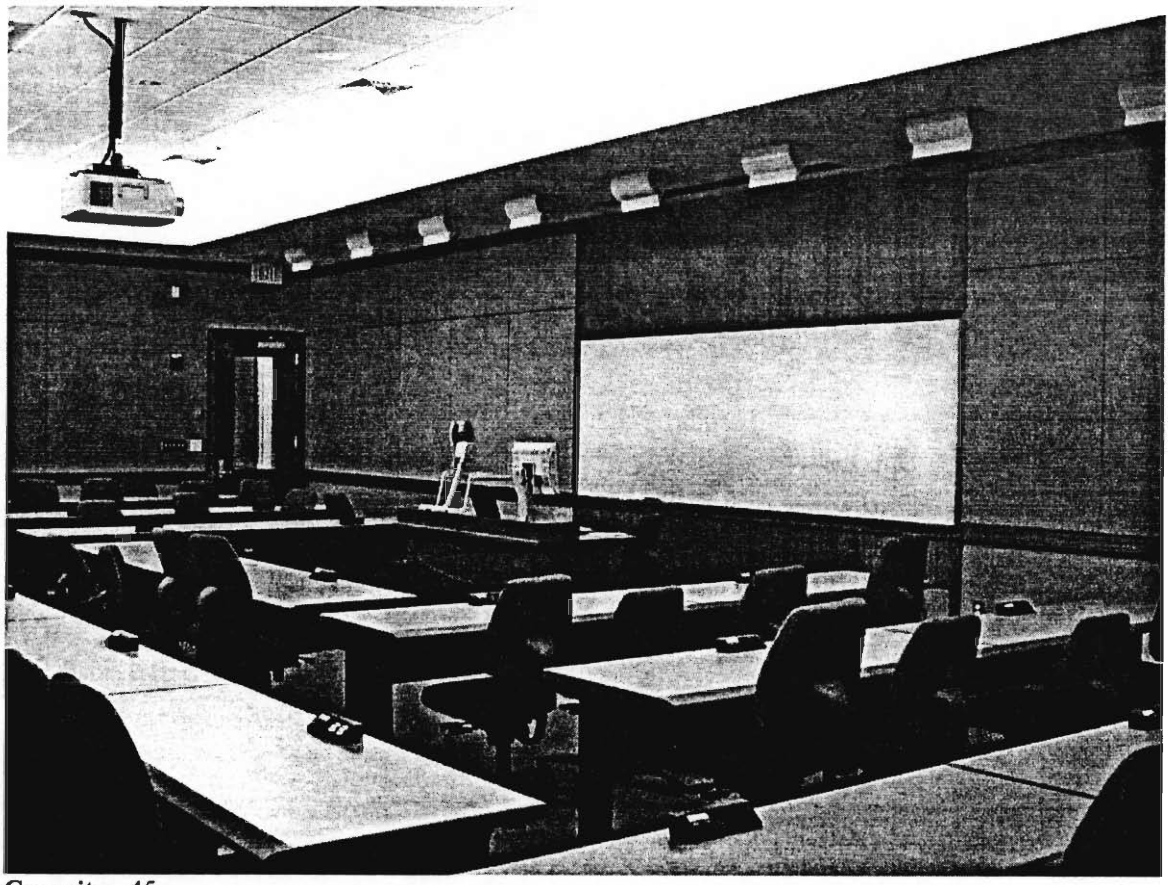
What do you want to see done in terms of any technical aspects at SULS; do you have any questions and comments? _____

_____

_____

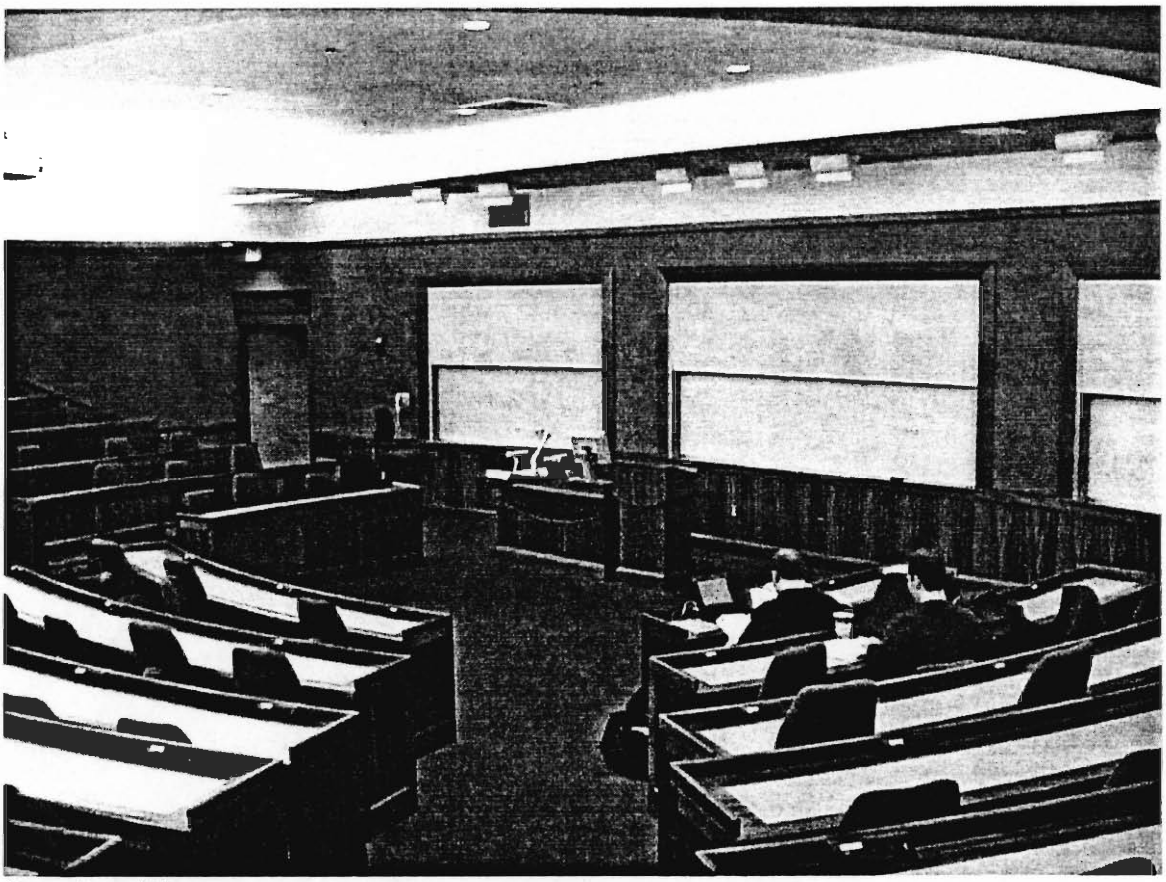
7.9 Appendix I – Room Catalog

7.9.1 Room 205



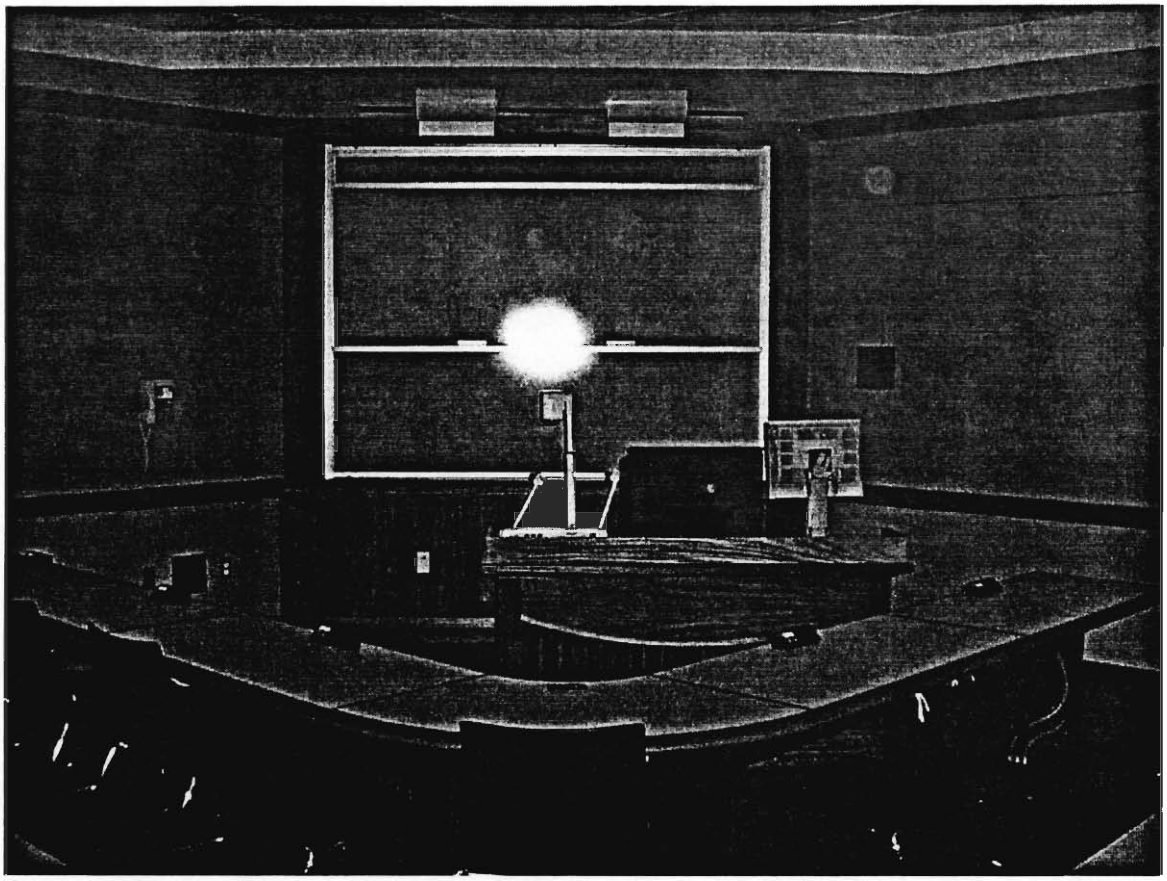
Capacity - 45
Equipment – Sharp projector, ELMO document camera, AMX touch screen room controller, Canon classroom camera, Bose 32-7 speakers

7.9.2 Room 235



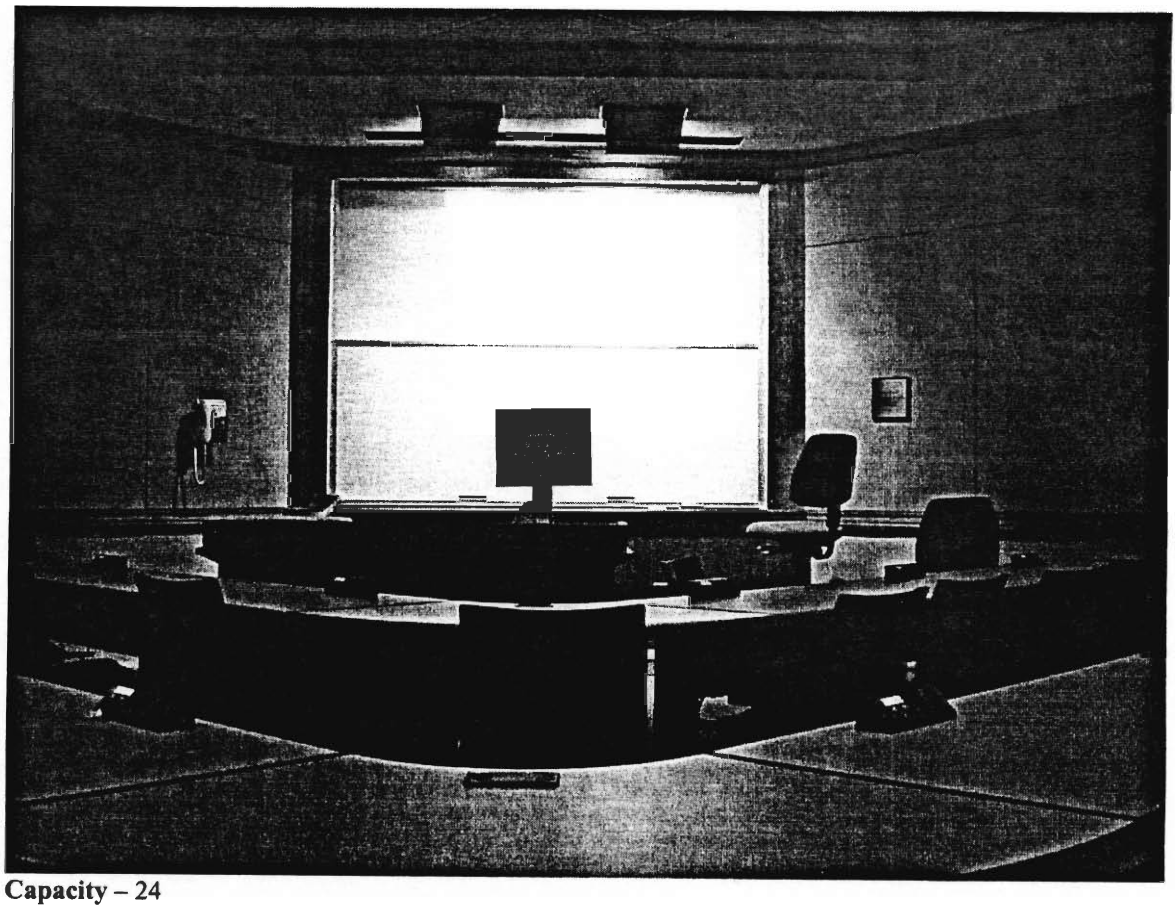
Capacity – 110
Equipment - Sharp projector, digital document camera, AMX touch screen room controller, Panasonic classroom camera, Bose Model 8 and EAW JF-60 loudspeakers

7.9.3 Room 245



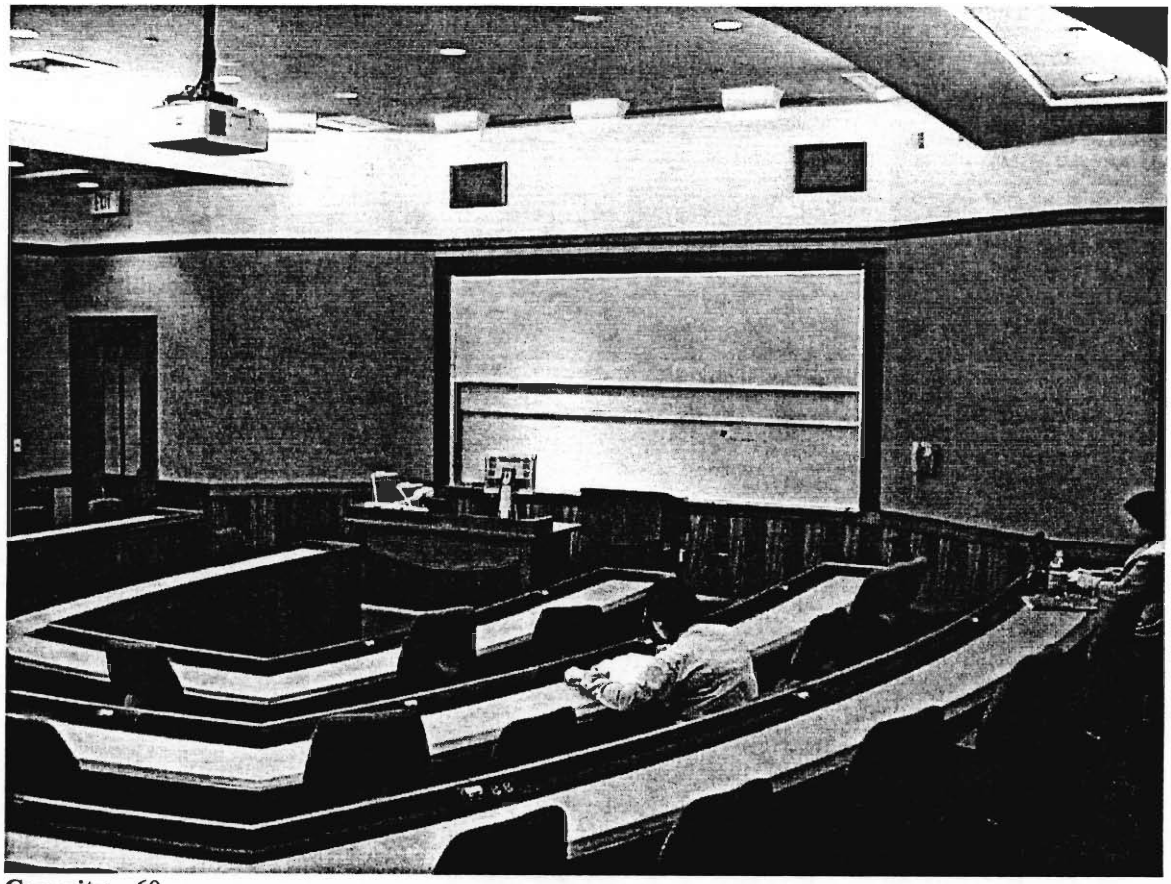
Capacity – 24
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Canon classroom camera, Bose 32-7 speakers

7.9.4 Room 255



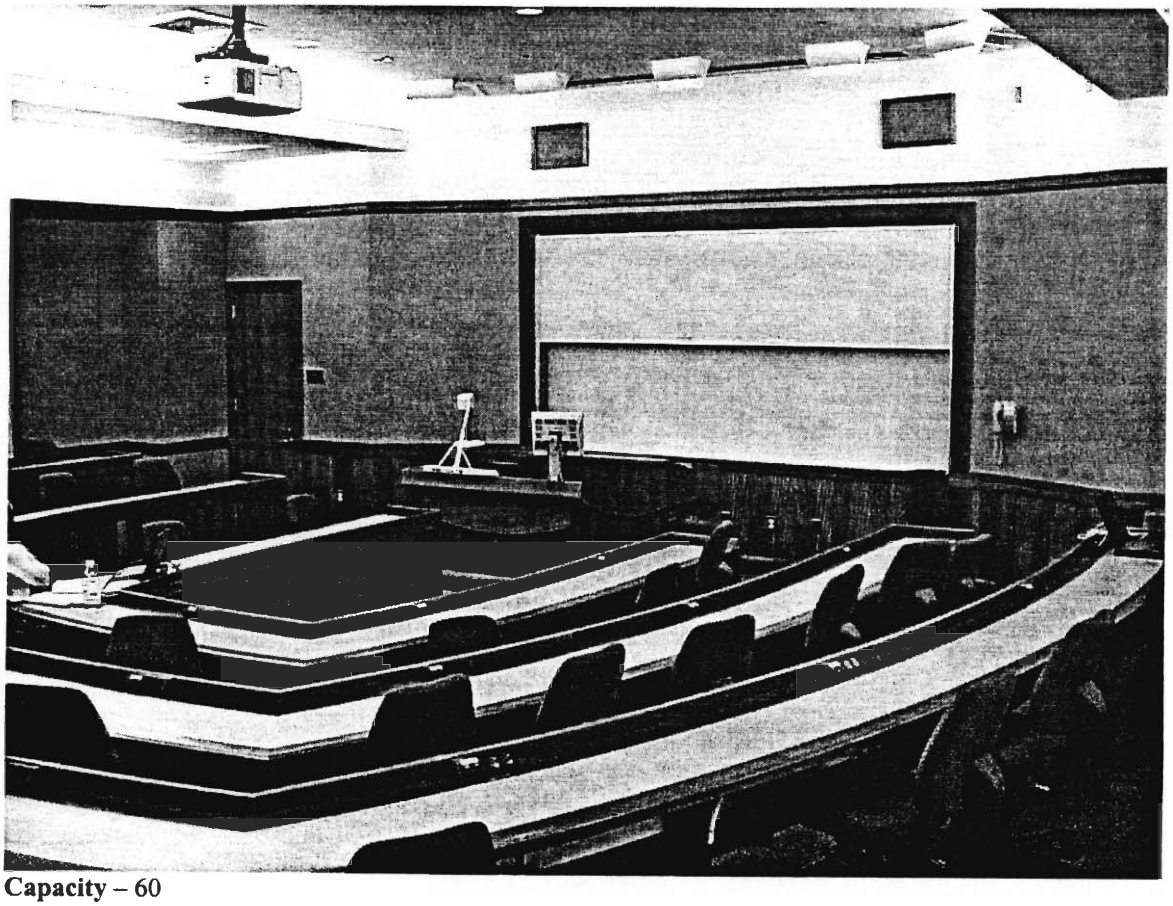
Capacity – 24
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Canon classroom camera, Bose 32-7 speakers

7.9.5 Room 265



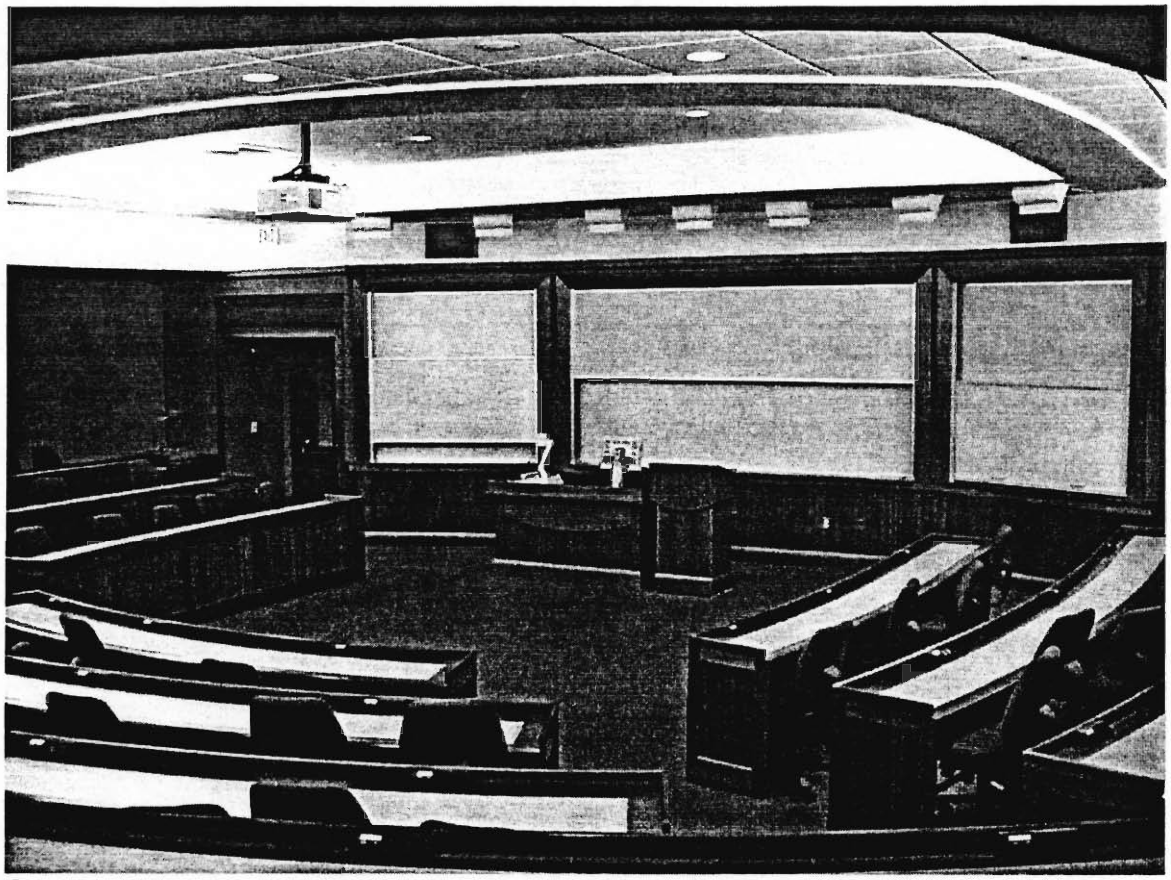
Capacity – 60
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Panasonic classroom camera, Bose Model 8 and EAW JF-50s loudspeakers

7.9.6 Room 275



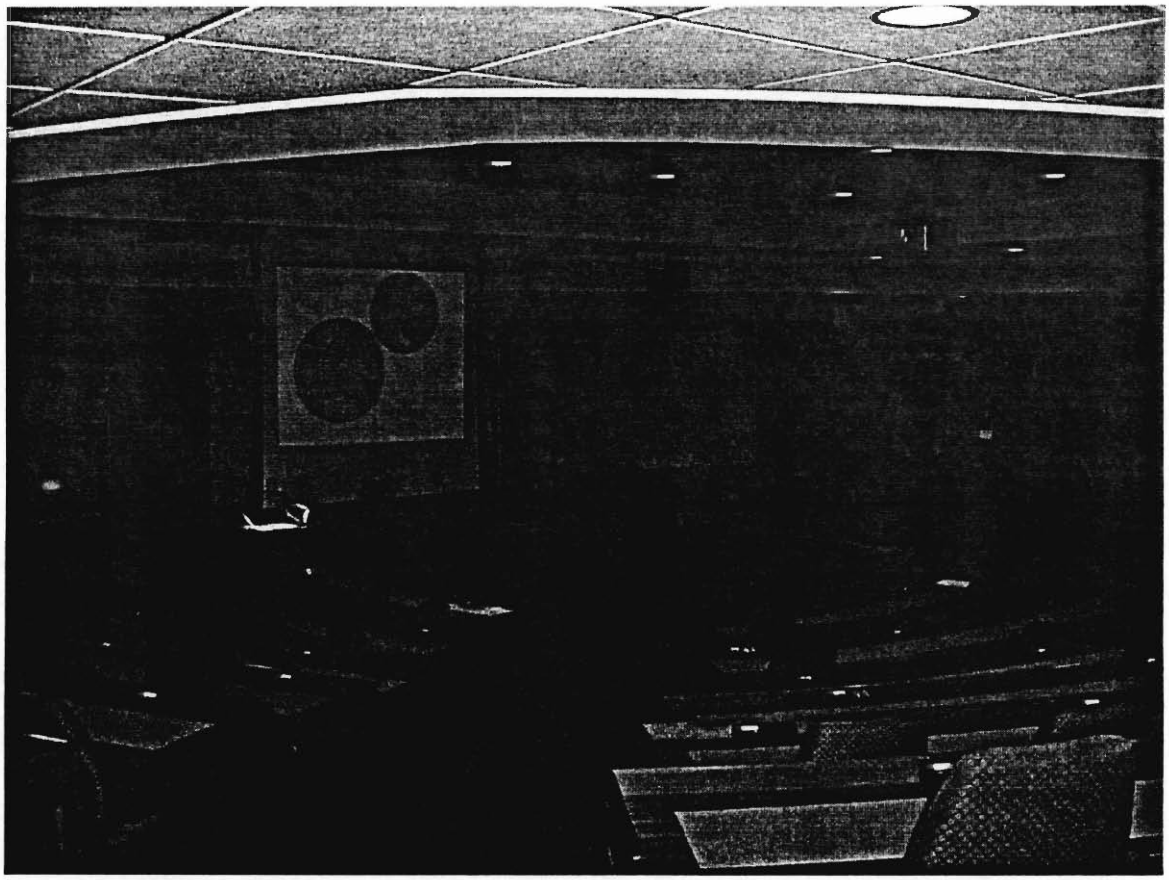
Capacity – 60
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Panasonic classroom camera, Bose Model 8 and EAW JF-50s loudspeakers

7.9.7 Room 285



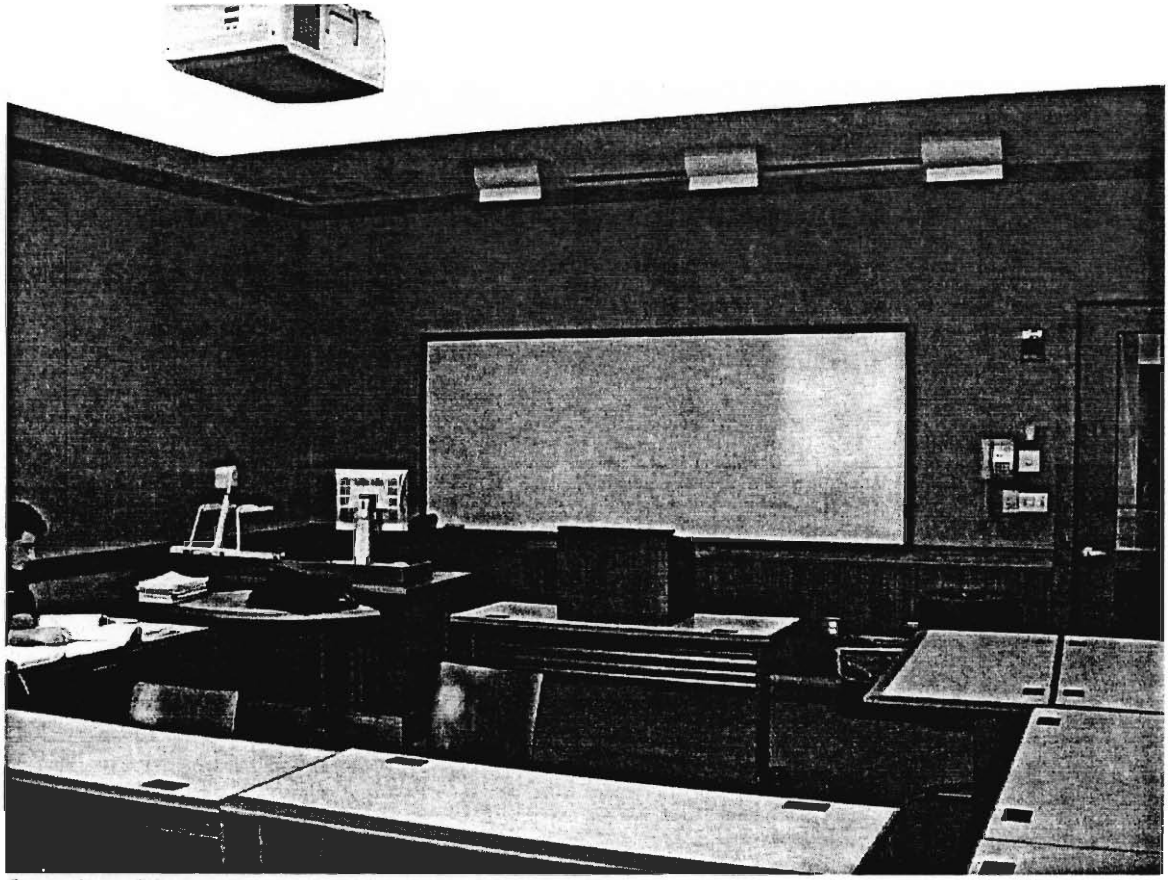
Capacity – 90
Equipment - Sharp projector, digital document camera, AMX touch screen room controller, Panasonic classroom camera, Bose Model 8 and EAW JF-60 loudspeakers

7.9.8 Room 295



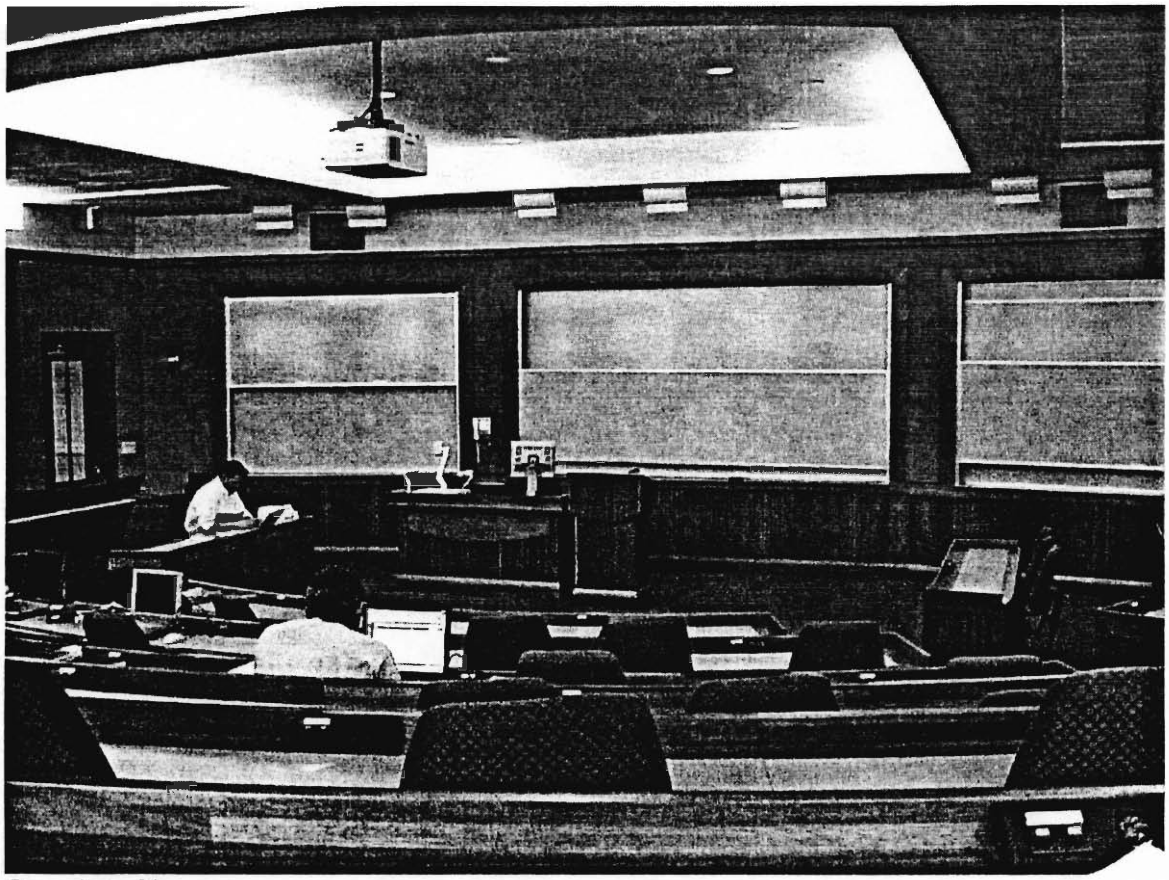
Capacity – 130
Equipment - Sharp projector, digital document camera, AMX touch screen room controller, Panasonic classroom camera, Bose Model 8 and EAW JF-60 loudspeakers

7.9.9 Room 305



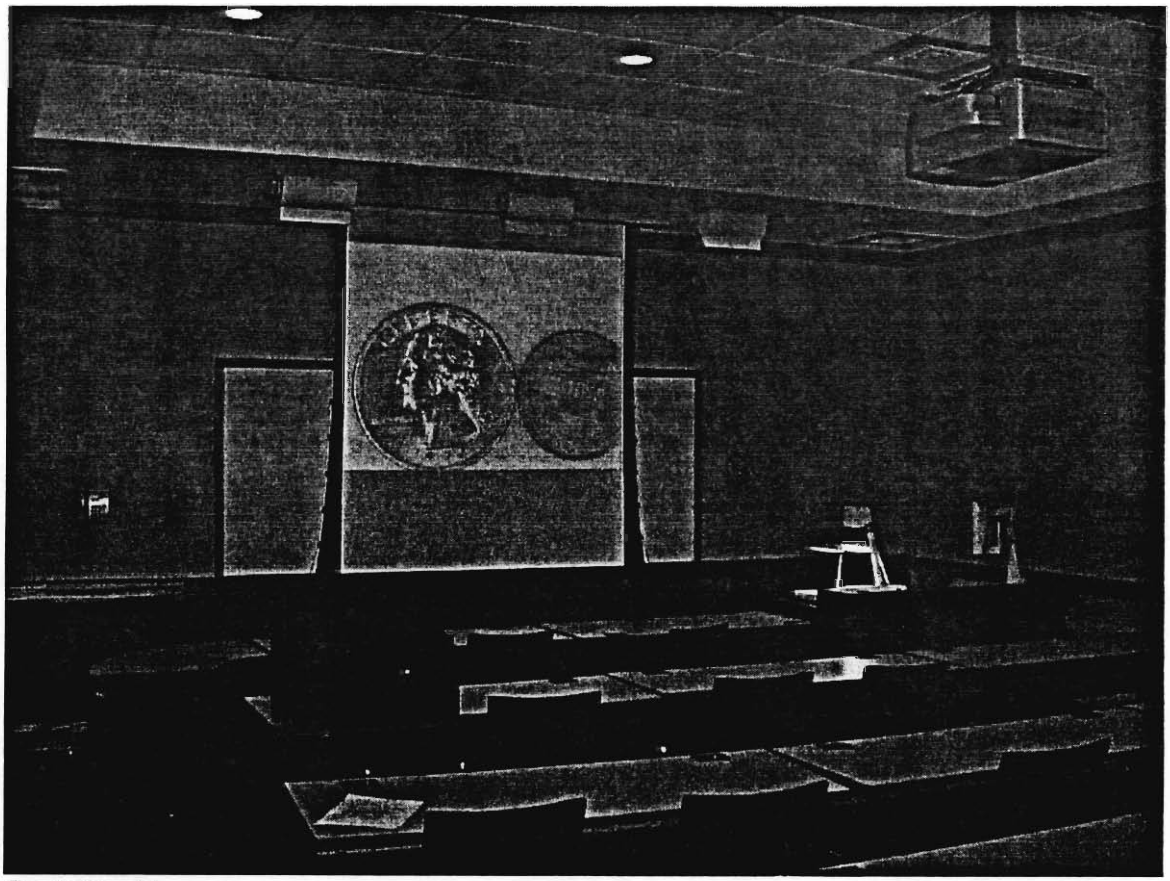
Capacity – 24
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Canon classroom camera, Bose 32-7 speakers

7.9.10 Room 315



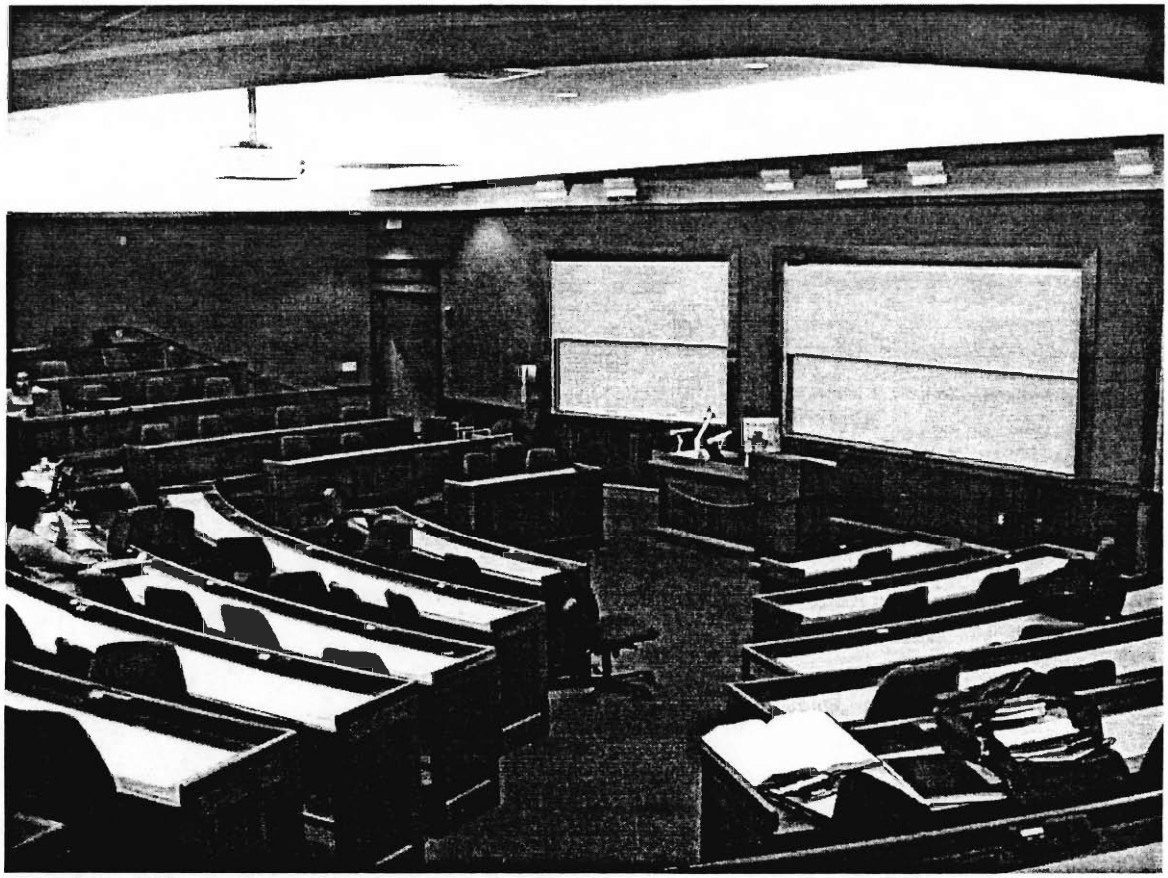
Capacity – 90
Equipment - Sharp projector, digital document camera, AMX touch screen room controller, Panasonic classroom camera, Bose Model 8 and EAW JF-60 loudspeakers

7.9.11 Room 325



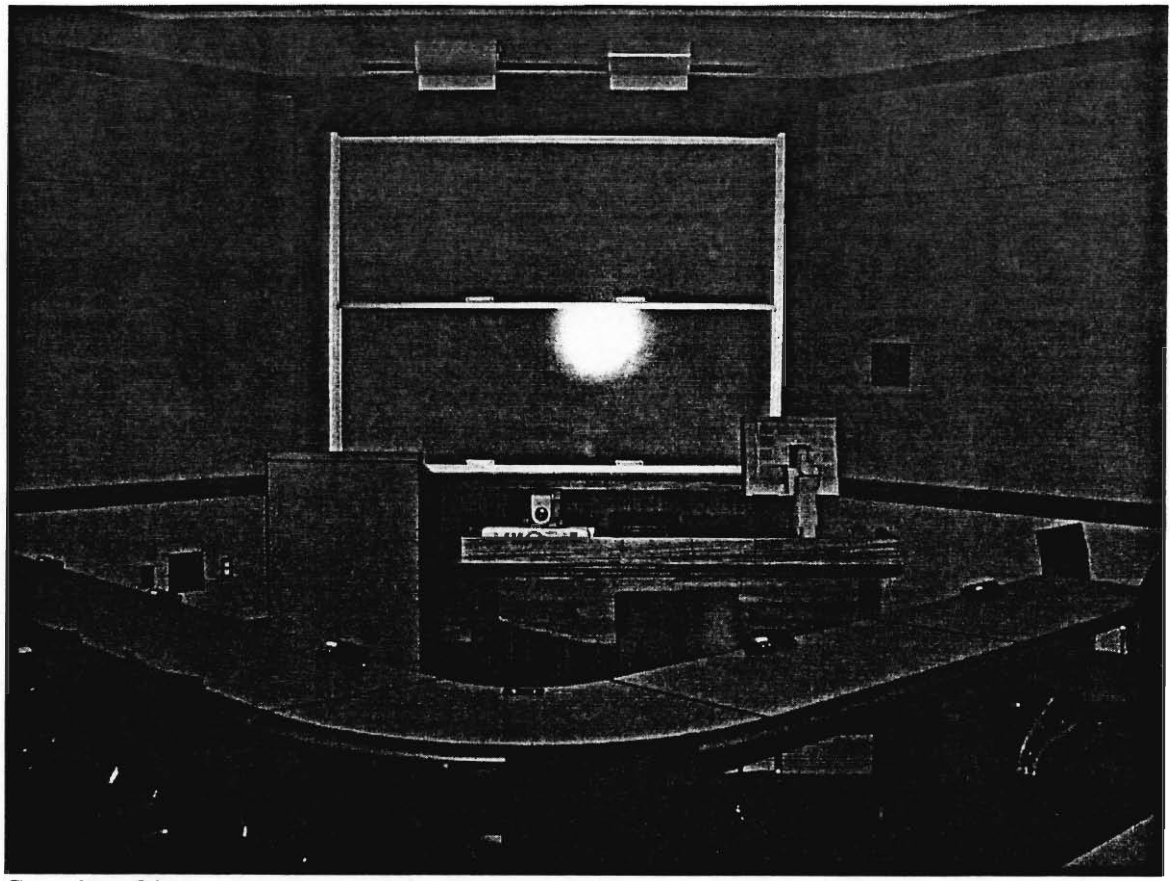
Capacity – 24
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Canon classroom camera, Bose 32-7 speakers

7.9.12 Room 335



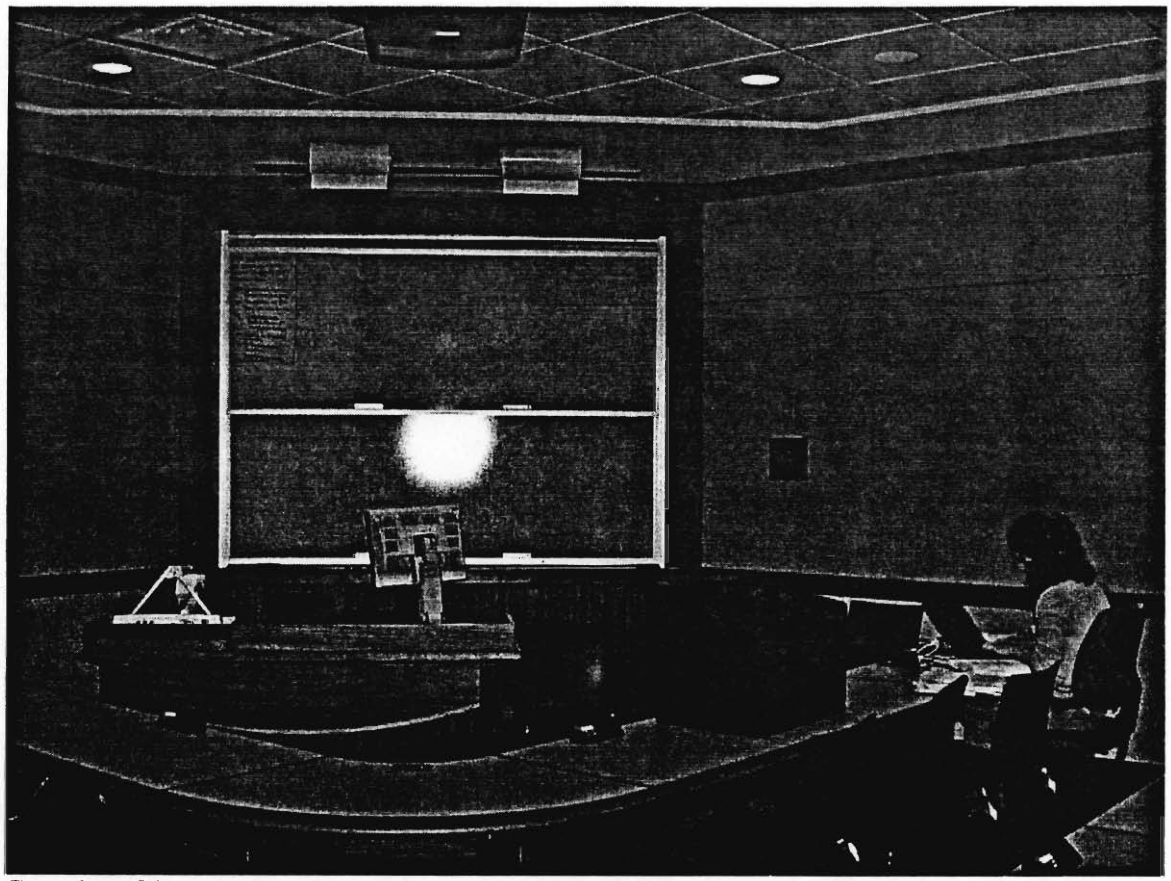
Capacity – 110
Equipment - Sharp projector, digital document camera, AMX touch screen room controller, Panasonic classroom camera, Bose Model 8 and EAW JF-60 loudspeakers

7.9.13 Room 345



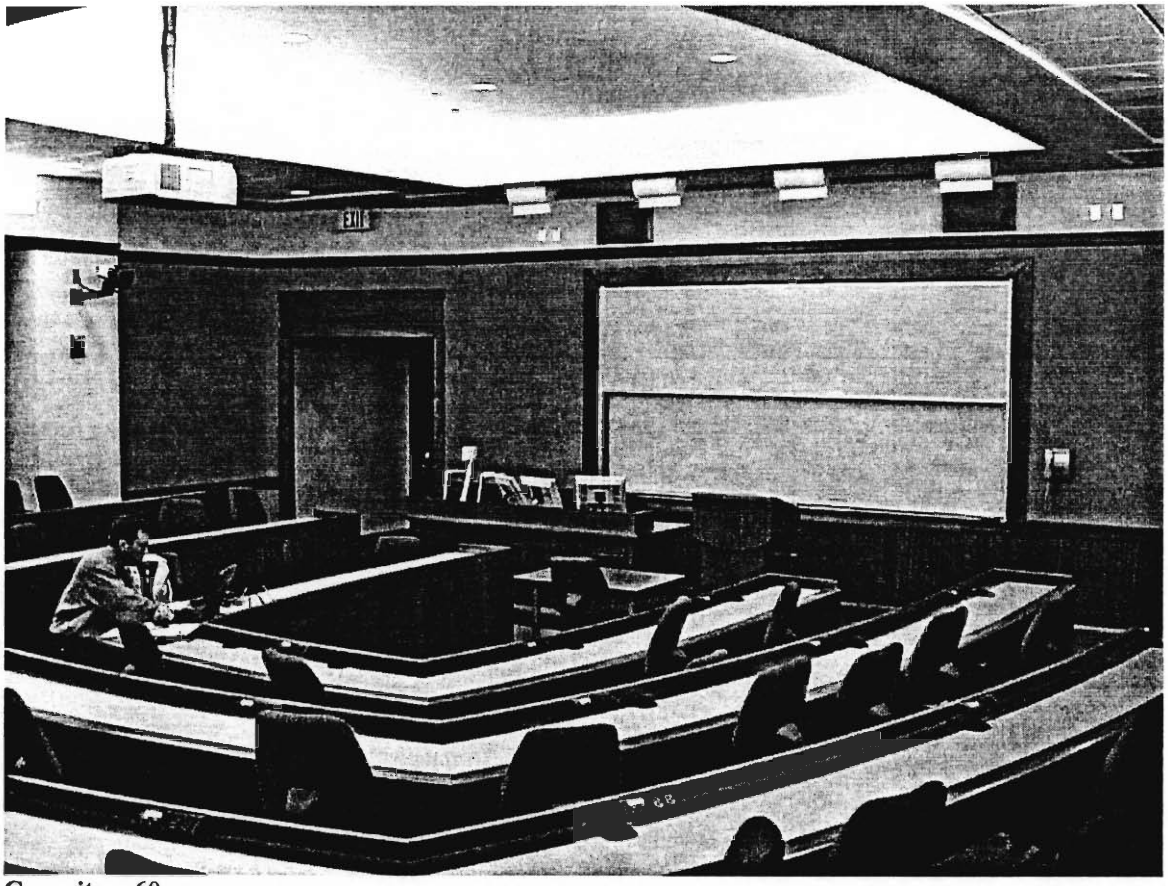
Capacity – 24
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Canon classroom camera, Bose 32-7 speakers

7.9.14 Room 355



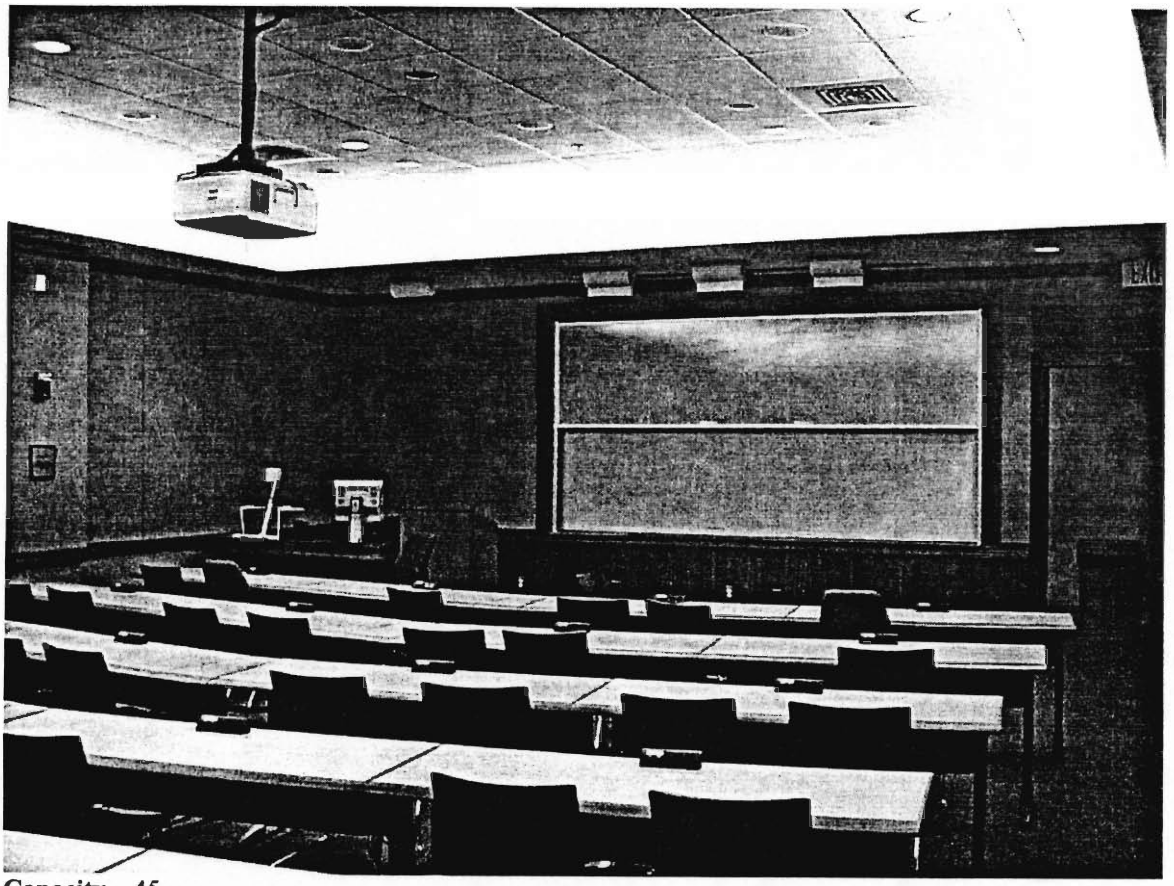
Capacity – 24
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Canon classroom camera, Bose 32-7 speakers

7.9.15 Room 365



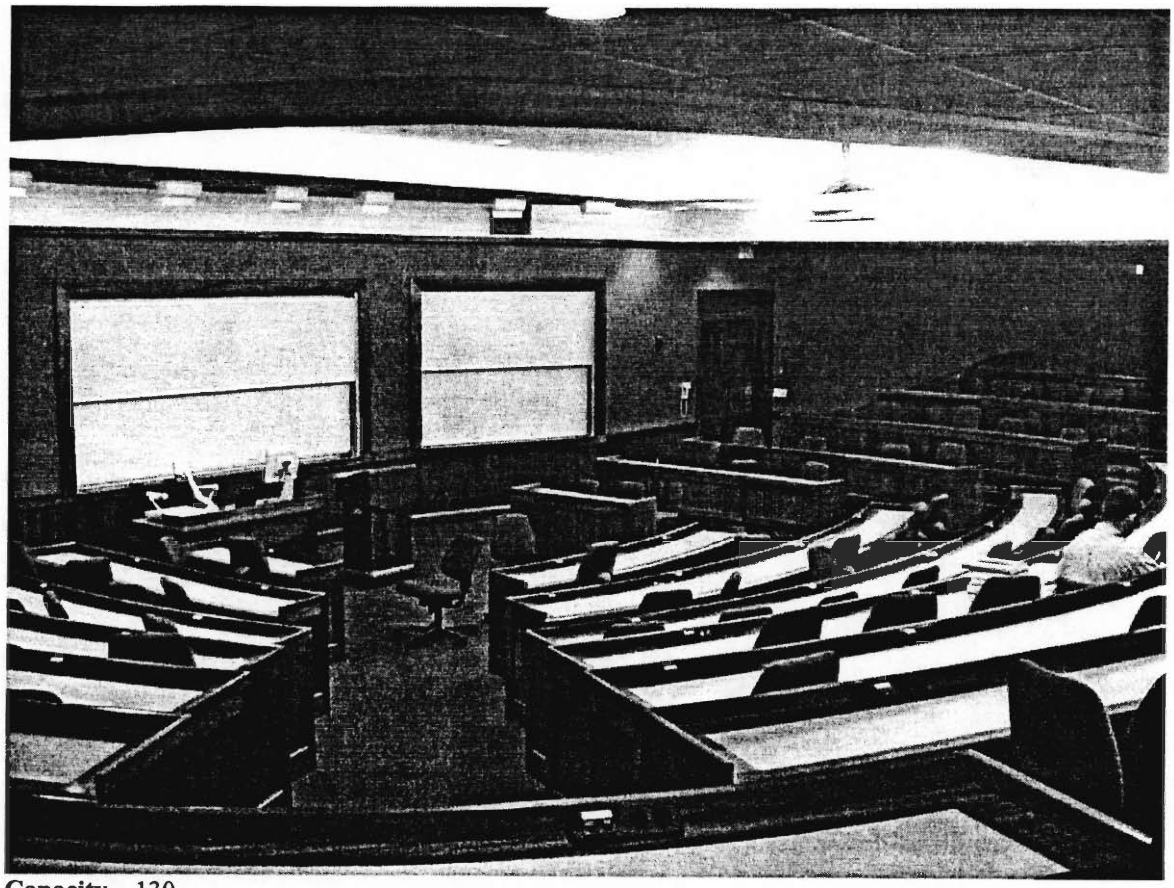
Capacity – 60
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, JVC classroom camera, Bose Model 8 and EAW JF-50s loudspeakers

7.9.16 Room 375



Capacity – 45
Equipment - Sharp projector, ELMO document camera, AMX touch screen room controller, Canon classroom camera, Bose 32-7 speakers

7.9.17 Room 385



Capacity – 130
Equipment - Sharp projector, digital document camera, AMX touch screen room controller, Panasonic classroom camera, Bose Model 8 and EAW JF-60 loudspeakers

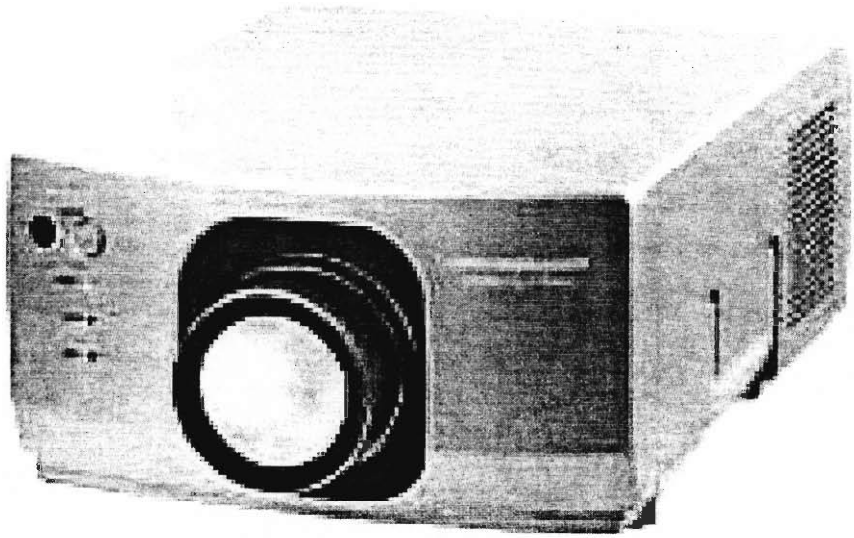
7.10 Appendix J – Classroom Hardware Catalog

7.10.1 AMX Touch Panel Control

This device allows the professor to control almost all of the electronic functions in the classroom from his or her fingertip. The AMX (AXT-CV10) controls lighting, sound, the ceiling projector, and the motorized shades on the window. It is connected directly to the Media Services department, which enables the professor to show video recordings as well as provide in-class videoconferencing capabilities.

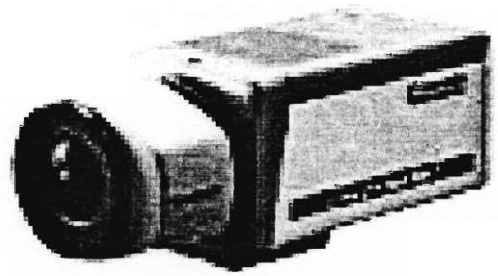
Enclosure: PowerTilt tabletop console; black plastic with matte finish
Base Dim. (WD): 11.5" x 9.5" (291 mm x 240 mm)
Display Height: 4.1" (105 mm) fully lowered, 9.8" (250 mm) fully raised
Weight: 4.3 lbs (1.9 kg)

7.10.2 Sharp LCD data / video projector



This device allows a professor to display an image up to 500 inches on a screen in front of a classroom. The Sharp (XG-E3500U) is compatible with both video inputs and personal computer inputs, which allows the professor to project a Power Point presentation as well as a movie or video clip.
Weight: 36.3 lbs.
Size (inches) (HxWxD) : 8.2 x 14.1 x 23.0
Throw Dist (feet) : 4.5 - 96.3
Image Size (inches) : 40.0 - 500.0
Brightness (Lumens) : 1500 ANSI
Maximum Display : 1280x1024 Pixels

7.10.3 Panasonic Digital Camera



This device allows the professor the capability to record any of his or her lectures. The Panasonic (WV-CP454) is an auto focus camera, which allows the professor to move around in front of the classroom while still being in focus. The AMX touch screen panel, located in the front on the professor's teaching station, can also control this camera's zoom and aim remotely. By aiming the camera at the class the professor can arrange for classroom video conferencing. The digital capability of this camera allows the professor to record a class to a hard drive where he or she can edit for content at a later time. In the future, a professor may be able to offer a recorded class over the Internet to a student who missed a class for a valid reason.

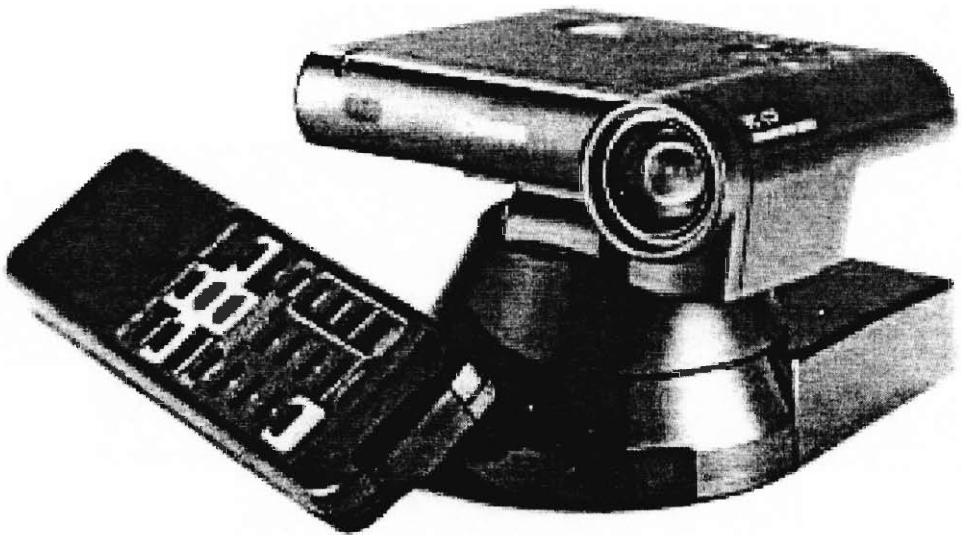
1/3" CLR Digital Signal
S/N Ratio: 50 dB
32X Super Dynamic Wide Range
Digital Signal Processing
Automatic Light Control
2 5/8"W x 2 9/16"H x 4 13/16"L
Power: 24VAC/12VDC

7.10.4 JVC High Definition Digital Camera

This device allows the professor the capability to record any of his or her lectures. The JVC (KY-F32U) is an auto focus camera, which allows the professor to move around in front of the classroom while still being in focus. The AMX touch screen panel, located in the front on the professor's teaching station, can also control this camera's zoom and aim remotely. By aiming the camera at the class, the professor can arrange for classroom video conferencing. The digital capability of this camera allows the professor to record a class to a hard drive where he or she can edit for content at a later time. In the future, a professor may be able to offer a recorded class over the Internet to a student who missed a class for a valid reason. This camera is primarily installed in the large moot courtroom.

Image pickup device: 1/2-inch interline CCD x 3 (R, G, B)
Color separation optical system: 1/2-inch f1.4 RGB 3-colour separation prism
Number of pixels (effective): 380,000
Color system: Wideband R-Y, B-Y encoder
Synchronizing system: Internal/External
Sensitivity: F9.5 @ 2000 lux
Electronic shutter speed: 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000 sec.

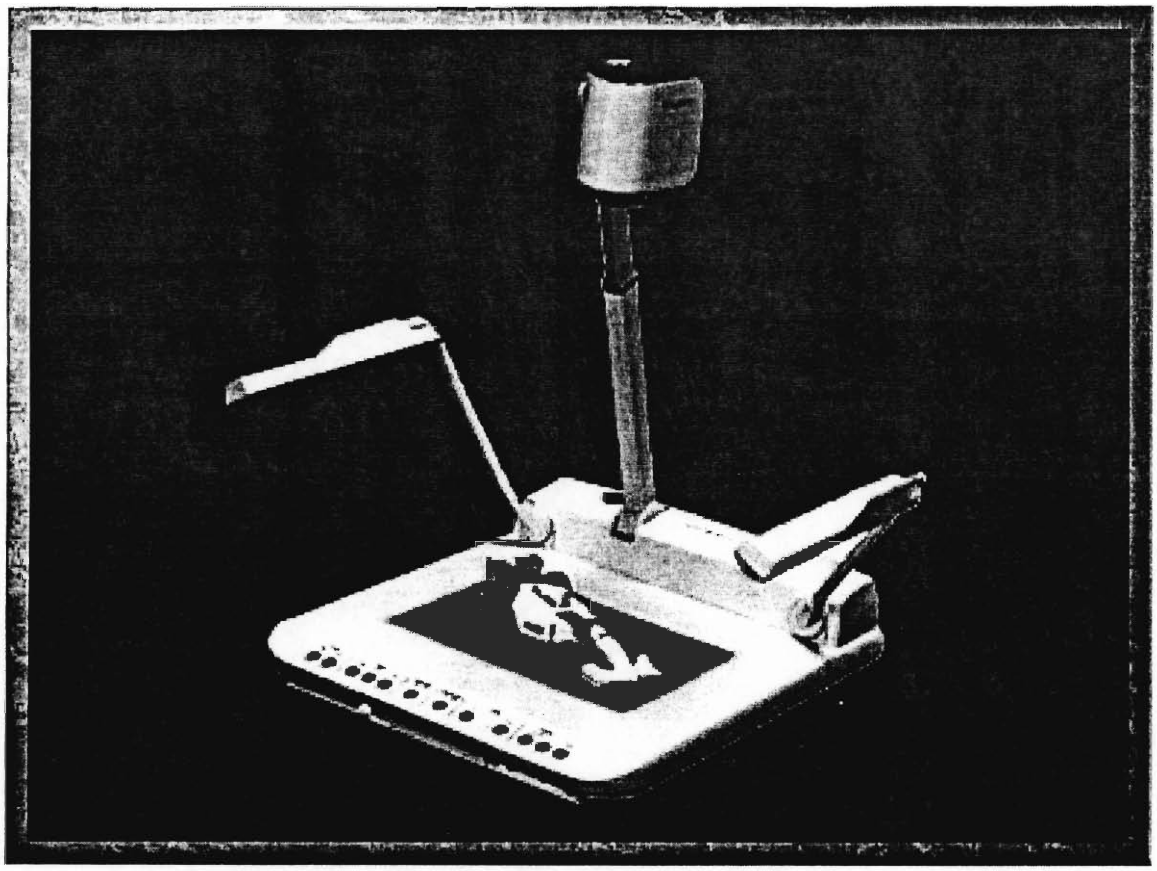
7.10.5 Canon Classroom Camera



This device allows the professor the capability to record any of his or her lectures. The Canon (CV-V3) is an auto focus camera, which allows the professor to move around in front of the classroom while still being in focus. The AMX touch screen panel, located in the front on the professor's teaching station, can also control this camera's zoom and aim remotely. By aiming the camera at the class the professor can arrange for classroom video conferencing. Currently the only recording capabilities that exist are to record to an analog VCR. Students may request the recorded class at Media Services or the Library.

Video Format: NTSC
Effective Pixels: 380,000 / 768(H) x 494(V)
Focal Length: 4.2mm to 42mm / f1.6-f2.6
Zoom Range: 4.9° to 46.9° Horz.
S/N Ratio: >46 dB
Dimension: 3.25"(W) x 4"(H) x 5"(D)
Control Method: Wireless IR Remote Control & RS-232C w/Software

7.10.6 Analog Document Camera

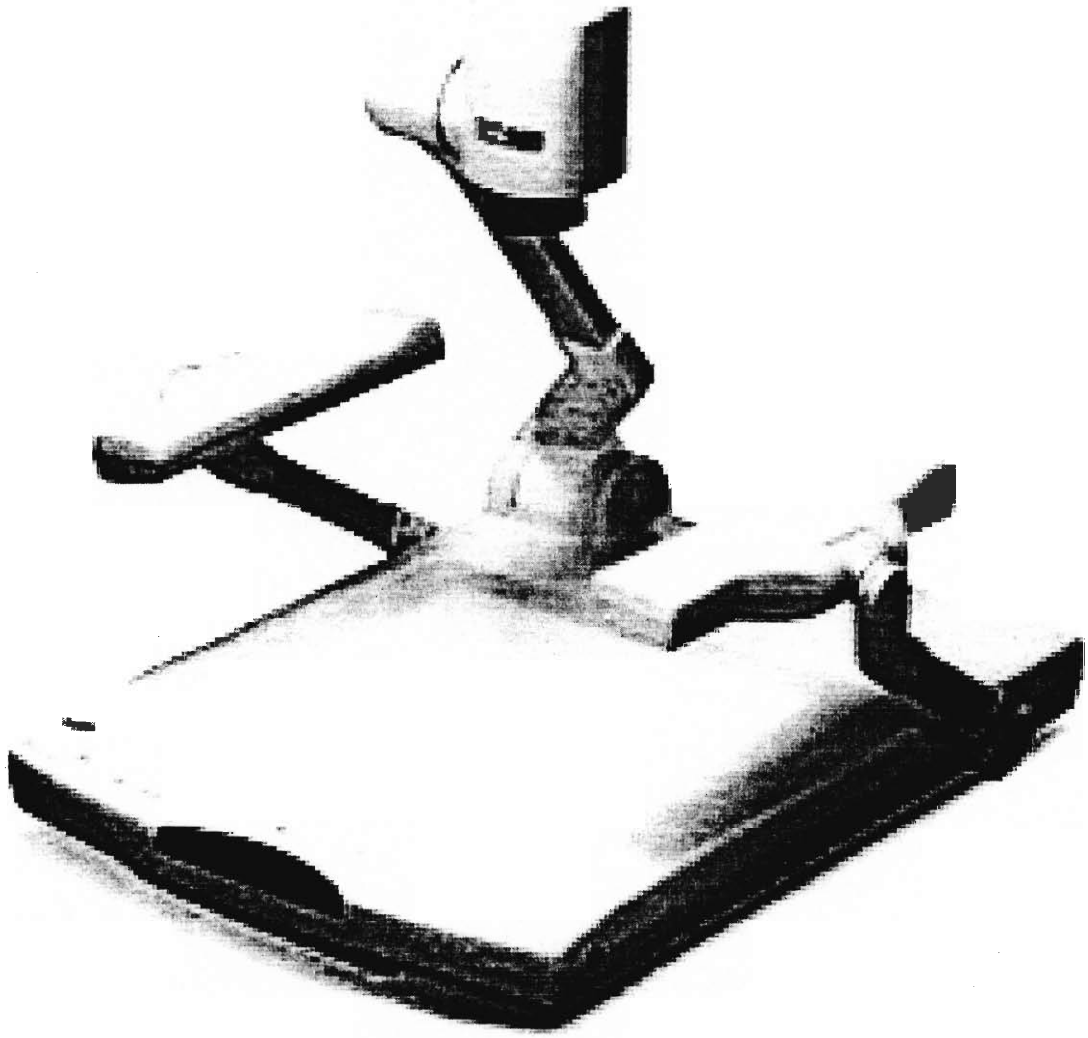


This device allows a professor to send an image of a printed or handwritten document in real-time to a projector. The ELMO (EV-400AF) is the technological replacement for the antiquated overhead projector. It allows a professor to project notes without using transparencies. A professor can write notes on plain white paper and display them to the class.

http://www.noctrl.edu/library/documentcamera/documentcameradirections.htm

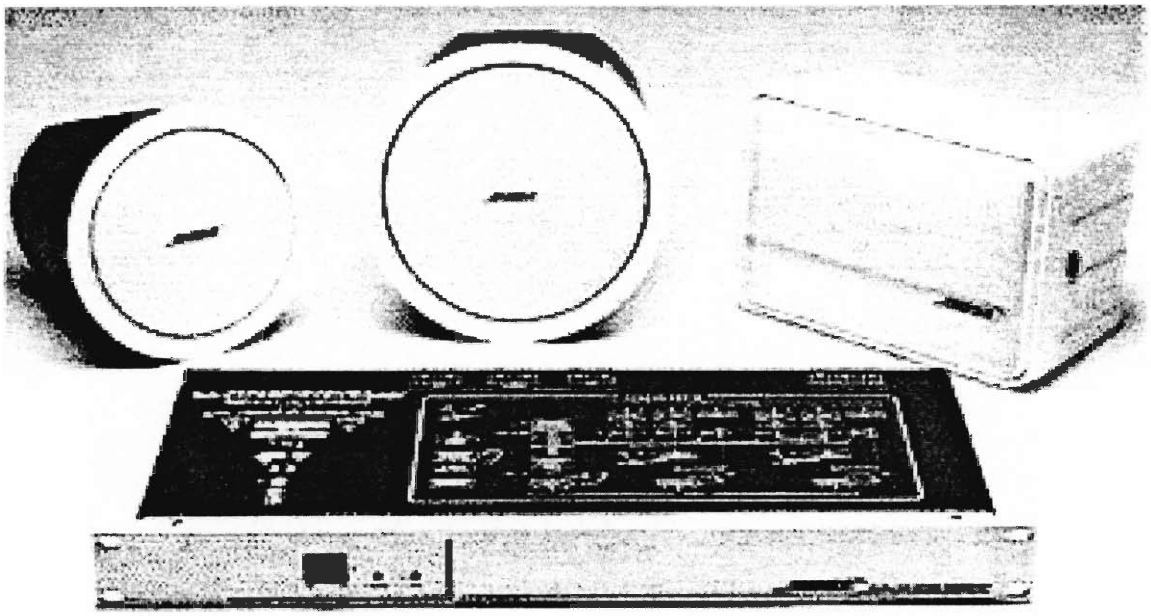
Lens: F/1.4~2.1 f=8.5~68mm
Zoom: 8X power zoom
Focus: Auto/Manual
Iris: Auto/Manual
CCD: 1/2" Color CCD 410,000 pixels
Resolution: over 450 TV (H) lines
White Balance: Auto/Manual
Output: Composite (RCA), S-Video
S/N Ratio: 46dB

7.10.7 Digital Document Camera



This device allows a professor to send an image of a printed or handwritten document in real-time to a projector. The Samsung (SVP-6000) is the newest technological replacement for the antiquated overhead projector. It allows a professor to project notes without using transparencies. A professor can write notes on plain white paper and display them to the class. In addition to real-time displaying, the digital capability of this camera allows a professor to freeze frame an image, and then paste it into a Power Point or other presentation.
Lens: F2.8 ~ 3.3, f=6.4 ~ 73.6, 12xZoom Lens
Shooting Area: MAX: 15.12" x 10.71", MIN: 1.97" x 1.57"
Zoom: Powered
Focus: Powered
Iris: Auto (with Fine Level Adjustment)
Frame Rate: 7.5 Frame/Sec
Output: Composite, S-video, Component, SXGA
Pick-up Device: 1/2" 1,500,000 Pixels PS CCD

7.10.8 Ceiling Mounted Bose Speakers



Two models of Bose speakers are pictured here. They are the Model 8 (smaller) and the Model 32 (larger). These speakers provide sound for the multimedia presentations given in class. These speakers are used as the only speakers in the 24 and 45 seat classrooms. They are paired with more speakers for better sound in the larger classrooms. The speakers are also connected to the microphone used by the professor.

Model 8
Driver: 6.4cm
Frequency response: 80Hz-16kHz
Dimensions: (LWH) – 15.9 x 14.6 x 16.5

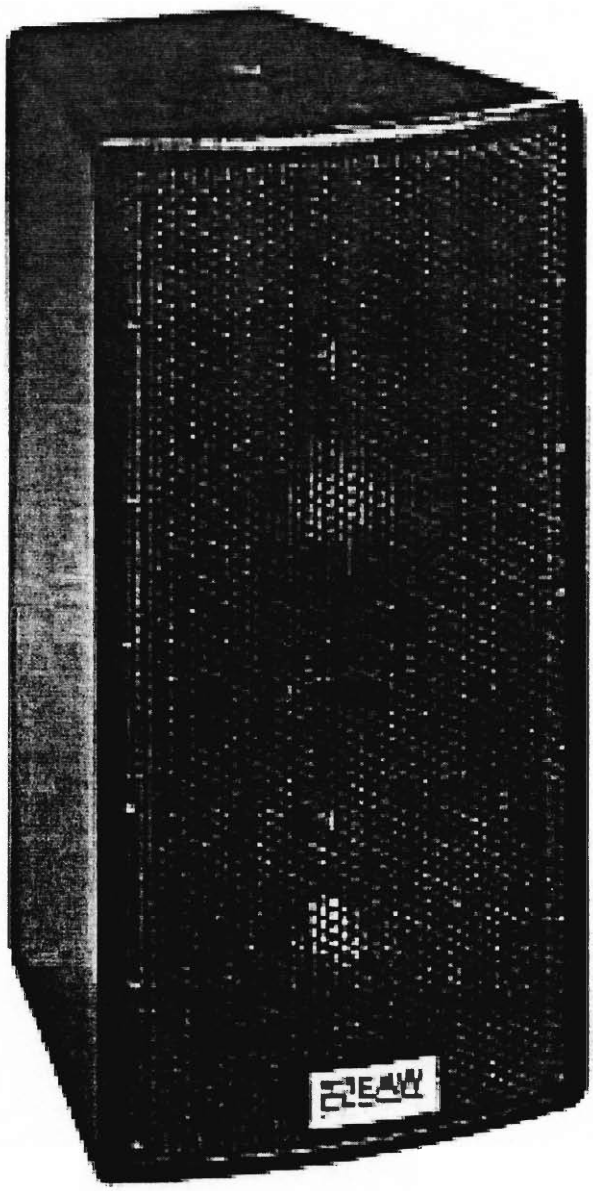
Model 32
Driver: 11.4cm
Frequency response: 80Hz-16kHz
Dimensions: (LWH) – 18.4 x 19.7 x 20.3

7.10.9 Eastern Acoustics Works Loudspeakers (JF-50s)

The EAW (JF-50s) provide added amplification to the professor's voice in the 60 seat classrooms. They also provide necessary sound support during multi media presentations.

2x 5.25-in LF/1-in tweeter
Magnetically shielded for use with video monitors
Asymmetrical (L/R) versions
Switchable impedance (4&Mac189;/16&Mac189;)

7.10.10 Eastern Acoustics Works Loudspeakers (JF-60)



The EAW (JF-60) provides added audio support in the 90, 110, and 130 seat classrooms.

Ultra-compact passive two-way system
6.5-in LF/33mm tweeter
High impact, high definition sound
For portable use or permanent installation

7.11 Appendix K – Director of Academic Technology Post

Position: Director of Academic Technology
Department: Law School
Date: March 2001

Suffolk University Law School, a private educational institution founded in 1906 and fully accredited by the American Bar Association and the Association of American Law Schools, is a growing and dynamic urban dual-division (day and evening programs) institution comprising 1650 students, 60 resident faculty, 23 clinical and legal writing instructors and 120 adjunct faculty.

Sargent Hall is the most technologically advanced facility of its kind in the nation. All classrooms are fully served by audiovisual technology, including projection video, computer projection, video and audio taping equipment and voice enhancement for the hearing impaired. A gigabit fiber optic backbone serves the seven floors of Sargent Hall providing network access to over 2,750 100 baseT Cat5 data ports with power and gigabit Ethernet capability serving every seat in all classrooms, the library and faculty offices. Sargent Hall is also equipped with voice-over IP, digitized video, packetized data, a digital television studio, satellite downlink and direct satellite service. The building houses 7 labs with 300 installed computers.

Sargent Hall will serve as the site of the 2001 Annual Meeting of the Center for Computer-Assisted Legal Instruction (CALI), the first time ever on the east coast. The Suffolk University Law School web site (www.law.suffolk.edu) provides additional information concerning the institution, students, faculty and academic life.

Summary of Position:

This position is responsible for managing the academic technology used in the Law School, for understanding related trends in legal education and academic technology, and for developing strategies to assure effective use of technologies most suited for legal study. The Director will have overall responsibility for integrating educational technology into the law school's academic programs. This role includes assisting faculty by facilitating the use of innovative technology in relation to teaching, research and service.

Principal Accountabilities:

Reporting to the Director of Academic Technology are:

Director of Computer Services - This position oversees the computing services for faculty, students, administration and staff. Computer services include administration of student computer labs; assistance to faculty, staff and administration in the use of personal computers including installation of hardware and software; diagnosing and troubleshooting computer or software problems, as well as serving as liaison to the

university's Management Information Services (MIS) on networking, e-mail systems and other infrastructure issues. Four employees report to the Director of Computer Services including a System and Training Manager, a PC Network Support Specialist, an Academic Computing Specialist and a Computing Assistant.

Webmaster - This position reports directly to the Law Library Director. In addition, this position receives direction from and works closely (on a "dotted line" basis) with the Director of Academic Technology. This position is responsible for maintaining the law school's web site, which is used for promotional, educational and administrative purposes.

Associate Director of University Media Services - This position reports directly to the University-wide Director of Media Services. In addition, this position receives direction from and works closely (on a "dotted line" basis) with the Director of Academic Technology. The Associate Director of UMS manages the instructional media equipment in the law school's classrooms and conference rooms. An Assistant Director and a Media Technician report to the Associate Director.

Key responsibilities of the Director of Academic Technology:

1. Manage and/or coordinate an array of academic technology and computing services designed to assure that the Law School makes the best educational use of technology. Develop collaborative strategies, which will result in productive working relationships with interdependent departments including the University-wide Media Services and Management Information Services.

2. Participate in reviewing the law school's existing administrative structure related to technology with the objective of administering the institution's technological resources in the most optimal manner.

3. Develop and implement strategies to promote, enhance and enrich the teaching of law through present and emerging technologies. Provide leadership by keeping abreast of new technologies, understanding how they affect law teaching and learning and advocating effectively for their use. Assure assistance to faculty in Internet research techniques and in preparing web materials for class use. Coordinate the development of a Faculty instructional lab and oversee faculty training. (In addition, the position of Director of Academic Technology offers the potential opportunity to teach a technology-related course at the law school.)

4. Develop and implement strategies, which use the web effectively for educational, informational and promotional purposes. Develop collaborative working relationships with administrative departments to assure that web services are delivered in an effective and timely manner.

5. Coordinate with reporting staff, administrative departments and faculty to promote the understanding and effective use of existing and future computing facilities.

6. Shape and implement effectively the academic technology and computing budget by working with reporting staff, administrators and faculty to assess needs and prioritize expenditures. Assist in development efforts to expand the technological resources of the institution.

7. Plan meetings, conferences, etc involved with academic technology issues.

8. Evaluate and recommend emerging educational and related technologies.

Requirements:

The Director of Academic Technology should possess:

* A strong strategic and business understanding of how technology will enable Suffolk University Law School to meet its overall education objectives.

* Significant experience with computer systems in an educational institution or a law-related environment.

* An understanding of industry trends, as well as current computer hardware, broadband and wireless communication technologies.

* Excellent organizational, analytical and communication skills, including demonstrated ability to assess, evaluate and implement organizational initiatives. The Director must also possess the ability to communicate effectively with a demanding and diverse clientele.

* Demonstrated leadership and management skills.

* Excellent administrative and interpersonal skills, especially demonstrated in working with faculty, students and staff.

* A demonstrated high-energy level and strong service orientation, along with the ability to accommodate a flexible work schedule (represented by varied hours and competing time demands) occasioned by the nature of a large dual-division institution, which holds classes every weekday evening in the fall and spring semesters, and four evenings in the summer school session.

* An understanding of networking infrastructure, current computer applications (specifically Novell NetWare, Windows NT and Unix), software packages, desktop software and tools.

* Knowledge of information resources management principles and methodologies.

Educational Qualifications: Bachelor's degree required. Graduate or professional degree (including J.D.) helpful.

Salary: Commensurate with experience and qualifications.

Application Deadline: Review of applications will begin immediately. The position will remain open until filled. Please submit a letter of application, resume and the names/telephone numbers of three references. Letters of application must relate the applicant's employment experience to the various requirements for the position of Director of Academic Technology.

Application materials should be forwarded to:

Human Resources
Suffolk University
8 Ashburton Place
Boston, MA 02108-2770
e-mail: jminardi@admin.suffolk.edu

Site(http://www.law.suffolk.edu/press/position.html)

7.12 Appendix L – Key Department Head Interviews

7.12.1 Registrar – Lorraine Cove

- April 17, 2001, 4:30PM
- 30+ years at SULS
- **Major Goal of Department:** to implement an effective and reliable online registration system
- **Technology used to meet current Goals:** Online registration program - DataTel version 17
- **Current Update Plan:** Updates in the Registrar's Office are done to the software and web page as they come up
- **Technology Training:** Insufficient training on SULS technology updates; Unaware of file sharing in own Dept.
- **Suggestions:**
  - Secure Email
  - Everyone has SULS email account
  - Standard training and update program

7.12.2 Computer Services – Gina Doherty

- April 18, 2001, 1:15PM
- 10+ years at SULS
- **Major Goal of Department:** Troubleshooting and maintenance of computers and software in Sargent Hall for faculty, staff, and students. Also chooses software for the rest of the building and tests it.
- **Current Update Plan:** Three year rolling update plan
- **Technology Training:** Technology training is external. This department in turn, trains the rest of the building.
- **Suggestions:**
    - More regimented school wide update policy

7.12.3 Web Services/Library – Jim Barrett

- April 18, 2001, 1:30PM
- 4+ years at SULS
- **Major Goal of Department:** To update the web page and enhance its usability. Also the Systems Librarian for Technical Services.
- **Technology used to meet current Goals:** Cold Fusion, Webtrends, email
- **Current Update Plan:** three year rolling update plan
- **Technology Training:** Technology training is external. This department in turn, trains the rest of the building

7.12.4 Dean of Admissions – Gail Ellis

- April 19, 2001, 11:15AM
- 9 years at SULS
- **Major Goal of Department:** To sell the Law School to students interested in the field of law. To implement an effective online application process by next Fall.
- **Technology used to meet current Goals:** Admissions uses Wintergrate database to process prospective applicants.
- **Current Update Plan:** Wish list format. Upgrades are assessed visually and made when they are needed.
- **Technology Training:** The Suffolk University MIS department and the SULS Computer Services department provide all of the training on technology in Admissions
- **Suggestions:**
    - Provide a job description for the proposed Technology Trainer

7.12.5 Medial Services – George

- April 24, 2001, 1:00PM
- 13 years at SULS
- **Major Goal of Department:** Support for the classroom is the first priority. If something goes wrong during class everything else is put on hold. Also were here to provide faculty with tools. As well as support and repair of the equipment inside the classrooms.
- **Technology used to meet current Goals:** We use devices such as beepers, cell phones, and palm pilots to keep in constant communication.
- **Current Update Plan:** Our plan is to stay current but not necessarily at the top of the curve. The reason for not staying at the top of the curve so if technology went in the wrong direction, SULS wouldn't have to take a step backwards.
- **Technology Training:** We receive training either through the manufacturer or we train ourselves. We offer training to the faculty on a one-on-one basis. Also in the past fall semester we offered a course on how to use equipment inside the classrooms.
- **Suggestions:**
    - People seem to have an over reliance on technology. They think it will automatically solve any of their problems. It has also altered individuals' expectations. The main factor is that technology should be used appropriately.