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An internship experience in educational leadership at Gloucester Township School District

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An Internship Experience in Educational Leadership

At Gloucester Township School District

by
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ABSTRACT

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School Business Administration

The purpose of this study was to identify the major cause of the Gloucester Township School Districts attendance and classification errors when reporting the annual Application for State School Aid. After identifying the problem, the intern developed and implemented a plan of action to resolve the problem.

The methodology of data collection included a questionnaire survey, interviews, an internal attendance audit in narrative form, and a review of the archival attendance reports. The research revealed that the Gloucester Township School District was experiencing difficulty exchanging computer data between its 11 schools, curriculum building, and the central administrative office. The district had to sneaker-net their data disks between buildings and the central administrative office. There were three significant problems with this sneaker-net process. Data disks were being damaged in transport, lost in the inter-office mail process, or data files became corrupt. A secondary problem was the districts inability to meet the requirements of the Technology Literacy Challenge because they could not provide Internet access to all of the schools in the district.

The conclusion of the study was that the GTSD implemented a Wide Area Network to eliminate their data management problems and provide the Internet to all of its schools.

MINI-ABSTRACT

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The Gloucester Township School District was experiencing difficulty exchanging computer data between its 11 schools, curriculum building, and the central administrative office. This is because the district had to sneaker-net their data disks between their buildings and the central administrative office. This data management problem was resolved by the GTSD implementing a Wide Area Network.

Acknowledgments

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A final giving of thanks to the Lord Jesus Christ for His salvation, wisdom, and guidance that enabled me to complete this internship experience. Also, for giving me the privilege of receiving an education; and placing me in a position to educate others.

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Chapter 1 Introduction: Focus of Study

Product Outcome Statement

Currently the Gloucester Township School District is experiencing difficulty exchanging computer data between its 11 schools, curriculum building, and the central administrative office. This is because the district must sneaker-net their data disks between buildings and the central administrative office.

One area of concern is sharing attendance data. An attendance audit revealed that the annual ASSA (Application for State School Aid) report of Gloucester Township was reported incorrectly. New Jersey School Law requires that school districts report their exact enrollment for October 15. The ASSA report is the most important report of the year for the district. The results of this report generate the amount of state funding the district will receive. The October 15 attendance must be accurate at each school and throughout the district.

Each school building in Gloucester Township uses a computerized attendance record keeping system. At this time, attendance records are sent to the administrative office once a month via inter-office mail. Then the data needs to be reentered into the district's main frame AS400 computer. The attendance records must be reentered for the entire year regardless of the fact that each month has already been entered. For example, attendance records for School A are received for the month of March. The secretary responsible for maintaining the district's attendance records must reenter all attendance records from September through March. Then, when April's attendance records arrive from School A she must enter the attendance records for September through April. This continues until June. This method creates a greater chance for error as well as requiring

dual entry of cumulative data. Considering Gloucester Township has 11 schools in the district this is an enormous task. Another problem related to the attendance procedure is the software that the district has been using. The software the district is using does not print the attendance report in the proper format that the state requires.

Another area of concern in the district is the lack of technology that could enable the district to use the district's mainframe AS400 computer to its potential. When other buildings in the district need to access data stored on the AS400 they must call the central administrative office and request that the appropriate information be forwarded to them via inter-office mail or snail-mail. This is an outdated way of sharing data that could be retrieved electronically using computer and networking technology that is now available.

Finally, the students and staff in Gloucester Township do not have access to the Information Super Highway or Distance Learning Aid.

Purpose of Study

Implementing a Wide Area Network (WAN) will eliminate most of the problems related to the currently used method of data sharing and attendance record keeping. The WAN will allow the attendance record data to be sent electronically and not through the outdated method of snail mail. Used effectively the WAN will eliminate errors pertaining to attendance and speed up the process.

Another benefit of implementing the WAN is that student and staff data, budget items, medical records, and all types of data will be retrieved electronically. Using technology associated with a WAN, an electronic village can be established within all of the buildings in the district. The WAN will also allow that electronic village to communicate and share data with other electronic villages by providing access to the

information super highway. The WAN will connect the schools with teachers, the teachers with students, and students to worldwide resources. Over a period, the WAN will save the district time and money because of the benefits associated with sharing data electronically. Time will be saved because data retrieval will be instant and only involve one person and a computer. Many factors contribute to money being saved by the district. For example, e-mail in place of office memos; e-mail in place of some telephone calls, a decrease in duplicating of records that can now be accessed electronically, and a decrease in telephone calls to the central office requesting various records. The WAN will improve the district's administrative efficiency through fast and convenient access to school and district records!

Wide Area Networks with Internet access are the future in education. In Gloucester Township, the future is now. Once completed the WAN will make the district state of the art in the area of communications, data retrieval, and information technology.

Definitions

The following is a list of definitions the reader will find helpful in understanding the jargon associated with this study.

LAN, a local area network is a network of computers linked together electronically, but limited to a specific area or building.

WAN, a wide area network is a network of computers that are linked together electronically. A WAN could be considered an electronic community where all forms of communication and data can be shared via the network using a computer. A WAN can encompass many buildings regardless of the distance between them.

Electronic Village, a network of computers belonging to an organization that is able to communicate with each other and retrieve information from a host computer.

AS400, is a main frame computer that is capable of being a host computer for all of an organization's records.

Sneaker-net, manually exchanging computer data by walking disks from one place to another.

Snail-mail, using conventional methods of exchanging information rather than using E-mail (electronic mail). For example, mailing a letter or using inter-office mail is considered snail-mail.

Intranet, an Intranet is the use of Internet technologies within an organization (or company) to achieve better results that the conventional means of data access and transfer.

Distance Learning, any form of electronic data or communication available over a distance.

E-Rate, federal funding for telecommunications hardware and software components

Limitations of the Study

The resolution of the attendance records as it relates to the ASSA report cannot be assured by implementing the WAN. This is because there is always the potential for human error in the areas of record keeping and reporting. The other two target areas for improvement because of the WAN are only limited by the commitment of the district. The effectiveness of the WAN for data exchange will only come about as the district provides the appropriate technical people to develop and manage an Intranet. Internet access for students and staff will come about after the WAN is in place. The WAN makes

all of these things possible, but it cannot bring them about in and of itself. It is going to require another commitment by the district of money and the qualified technical personnel to use the WAN to its potential.

Setting of the Study

The Community

Gloucester Township covers an area of 23 square miles and is located in Camden County. It is bordered on the north by the Borough of Runnemede, on the east by the Boroughs of Magnolia, Somerdale, Lindenwold and Pine Hill; on the west by Gloucester County; and on the south by Winslow Township.

Gloucester Township was incorporated on June 1, 1695, and borrowed its name from the Cathedral Town of Gloucester which is located on the banks of the Severn in England. Once, Gloucester Township supported many agricultural activities. However, today large tracts of farmland have given way to numerous housing developments. The population of Gloucester Township is 57,000 and the recent trend of population growth will continue into the future.

Socioeconomically Gloucester Township has a varied set of occupations. Over the years, the once dominant blue-collar middle class population has shifted to a community of increasing white-collar professionals. The median household income was $36,756 as reported by the 1990 census. Property taxes average $3,700 a year.

Religion, politics, transient location and accessibility combine to give Gloucester Township a suburban nature. The racial make up of Gloucester Township has been homogeneous since its inception. The majority of the population is conservative, democrat and white. The percentage breakdown is as follows: 90% white, 7% black, and

the remaining 3% would be considered other. With a population close to 60,000, Gloucester Township has a dozen churches that represent eight different religions. The Township's government is a Mayor-Council Plan B type under the Faulkner Act of the State of New Jersey. The Mayor and seven councilmembers are elected for a term of four years each. The councilmembers terms are staggered.

The Gloucester Township Public School District

The Gloucester Township Public School District is the largest elementary (K-8) school district in New Jersey. The district consists of 7848 students who attend seven elementary and three middle schools, and is serviced by the 943 staff members employed by the district, (R. Greco, personal communication, October 12, 1997). The Board of Education is elected and consists of nine members who supervise the school district and a fifty-three million-dollar budget.

The central administrative staff consists of the district superintendent, a school business administrator and an assistant school business administrator, two assistant superintendents for the areas of curriculum and non-instructional personnel, who are assisted by a personnel director, a technical services director, a curriculum coordinator, supervisors of transportation and maintenance, a special education supervisor, and various other personnel members who are directors and coordinators for more specific programs under each of the two assistant superintendents' realms.

At each of the elementary schools, a principal and an assistant principal are responsible for the daily operation of the school; at the middle schools, a principal and two assistant principals have this responsibility.

The Gloucester Township School District and the Black Horse Pike Regional School District have a sending-receiving relationship for the children of Gloucester Township. The current trend in new student enrollment will continue in the district because of the increase of new housing developments in Gloucester Township.

The district has sixteen buildings that are placed in varying distances across the 23 square miles of the township. There are eleven school buildings, maintenance and warehouse building located at the same site, a curriculum building, a technical-media building, and the central administrative office. Delivering information to each of these buildings requires a full time employee and a significant amount of time by office support people at each building (B. Suessmuth, personal communication, October 7, 1997).

Importance of the Study

"In 1991, for the first time, U.S. companies spent more on computing and communications equipment than on industrial capital goods. The industrial age has given way to the information age" (Angell & Heslop, 1997, p.1). The information age has arrived, and so has the technology to manage that information. School districts, like businesses must respond with accurate, effective, and efficient methods of managing their various types of information. From students' records, to budgetary items the Gloucester Township School District must make those records available to the appropriate staff using the latest technology. Calling on the phone and requesting that certain information be delivered the next day will not meet the accelerated demands that the information age has placed upon all businesses, even a school district.

Also needed to keep up technologically are Internet access for staff and students and the potential for distance learning.

> More then 38 million people are now connected to the Internet, and 100 million people will be connected by 1998. The Internet is the communications and data movement medium that is rapidly defining how business will be done in the future-and the future has arrived (Angell & Heslop, 1997, p. 8).

Gloucester Township must provide the students and staff the technology to travel and compete in the information age. The district will also be keeping pace with the New Jersey Core Curriculum Standards. Implementing a WAN is the best way our district can assure that its staff and students will continue to be successful in the year 2000 and beyond.

Organization of the Study

The following will be an overview of what chapters 2-5 will focus on in this study. Chapter 2 will be a Review of the Literature as it relates to data management, the Internet, and Wide Area Networks. Chapter 3 will present the Design of the Study. This chapter will include a general description of the research design used. Included in this chapter will be a description of the development and design of the research instruments actually used. Finally, the data collection approach and data analysis plan will be explained. This chapter will prove that the WAN is making the Gloucester Township School District more effective at data management and more accurate at attendance reporting for the ASSA. It will also show that the students and staff of the district will be using the Internet as a reference resource to keep up in the information age. Chapter 4 will be a presentation of the research findings. This will include evidence for support of a Wide Area Network by the review of literature and the research. Chapter 5 will draw conclusions on the project as a whole. It will answer the question as to how the intern has

grown in leadership skills and how the district has changed as a result of the implementation of the WAN. Also presented in chapter 5 will be the major implications the WAN has had in various areas of the Gloucester Township School District. Finally, chapter 5 will show the need for further study in the area of data management and retrieval, Internet issues, and the development of an Intranet. Staff training and the need for a systems administrator will be recommended.

Chapter 2: Review of the Literature

The purpose of the Review of Literature is to show that there is an abundance of research supporting the benefits of implementing a Wide Area Network in the Gloucester Township School District. Most of the research used in this study comes from journals, magazines, newsletters, and personal communication. This is because communication and information technology is in a constant state of upgrade. The consistent trend to upgrade is in response to the demand for improvements in the speed and accuracy of electronic information. Consequently, by the time a book about Wide Area Networking is published it has become outdated.

I will first show that the research supports the need for WAN's and Internet access for school districts as indicated by the recent increase in technology funding at all levels of government. Next, I will use the research to show that for school districts to be successful in designing and implementing a WAN they must hire technology consultants. Finally, I will show that the research indicates that the WAN and Internet will bring about positive administrative and instructional changes in the Gloucester Township School District.

This year school districts across America will have spent $4.1 billion on educational technology, according to a report from Quality Education Data (QED), Denver Co. (Getting Wired," 1997). Federal, state, and local governments recognize the need for additional technology funding for school districts so that they may keep up with the demands of the information age. "With technology changing at a rapid rate and many schools still struggling just to provide enough textbooks for students, outside sources of funding have become a life-saving option for many districts and schools" (Carter, 1997,

p. 20). The abundance of outside funding for school districts adds validity to the claim that school districts must improve their technology to keep up in the information age. Brooks states,

> The next two school years promise to be ones in which the federal government plays an active and generous role in connecting students and educators with technology. Schools and districts can benefit from funds allocated to several governmental agencies including the U.S. Department of Education, (Brooks, 1997, p. 6).

The reason that an enormous amount of funding is being made available is the U.S. Department of Education realizes that our schools need the latest technology to be competitive in the 21st Century. The general public and the corporate world encourage the push for this technology because they want students that are prepared for survival in the information age.

Figures from the U.S. Department of Education place the cost of implementing technology in schools between $50 billion and $109 billion in 10 years (Fickes, 1997, p. 25). Now is the time for school districts to take advantage of the funding available. Fickes (1997) also found, "There's lots of good news from Washington these days. Political leaders from both parties, bolstered by public opinion polls that place schools and technology high on the list of national priorities, are looking kindly on funding for technology" (p.26).

The goal of increasing technology in our schools was also endorsed by the highest leader in our nation. First announced by President Clinton and Vice President Gore on February 16, 1996, the Technology Literacy Challenge is a two-part strategy designed to

meet four goals by the year 2001. First, all classrooms will be equipped with up-to-date computer equipment. Second, all classrooms will be connected to the Internet. Third, materials and software will be developed to help students achieve high academic standards. Finally, teachers will learn how to integrate instructional technology across the curriculum. The two components of the Literacy Challenge are Technology Innovation Challenge Grants and Technology Literacy Challenge Fund. The Challenge Fund will distribute $200 million to states in 1997, and an expected $425 million in 1998 (Brooks, 1997, p. 8).

The longer school districts wait to make the needed technology improvements the more expensive it will cost in the future. The costs are not only monetarily because of the district's neglect of getting in on the available funding. Moreover, is the cost of stagnating the growth of the staff and students in the district. School districts without a WAN and the Internet are forced to use archaic means while struggling for success in this age of information.

Research also indicates the need for technology consultants when a company or school district is planning to implement a Wide Area Network. Technology consultants can help a districts dreams become reality. They have the experience of networking in the business world that school districts do not have. Technology consultants have the answers and solutions needed in the administrative offices and school classrooms concerning information technology (IT). For example in the GTSD, each building has a LAN. Some of the LAN's are Macintosh using AppleTalk, some are PC based using Novell, and yet others are PC based using Windows NT. How do we connect all of these LAN's and make sure that they can talk to each other? Not taking advantage of

experienced and qualified technology consultants when planning a WAN could turn a district's networking dreams into nightmares.

In the future school districts will need to hire their own qualified and experienced technology people to manage and design new networks. However, most do not have those professional types on staff at this time. As school executives' pour even greater levels of district funds into buying increasingly complex technology, notably WAN's, and telecommunications, the need for technology consultants is necessary. Geoffry Fletcher of the Texas Education Agency says, "It looks to me like [hiring consultants] is becoming more and more common in the technology arena" (Wall, 1996, p. 23). Continuing in the article, he went on to state his belief that this trend will continue. "The fact that technology is advancing at so rapid a pace school districts cannot afford to replicate a consultant's research or engineering staff" (1996, p. 23). Using district personnel to implement a WAN in a school district the size of Gloucester Township is grossly over estimating their technical expertise.

The district's part is to create a five-year technology plan for the consultants to assist them in designing the WAN. The five-year plan is the first step in bringing a district up to the current technology standards. I helped write the five-year technology plan for the Gloucester Township School District. Five-year plans are now a requirement in most applications for governmental technology funding.

Alternatively, Dr. Robert Munz, superintendent of the Collier County School District hired consultants to write his district's five-year plan. The consulting firm turned in a book two inches thick that contained many great technical and practical ideas. Bob Dallmann, the district's director of technology said,

> Technology had always played a big role in the county's schools, which had invested heavily in computers in the 1980's. But technology was improving by leaps and bounds, and the Internet was providing opportunities previously unimagined...Why did we go to the car from the horse and buggy? Because the technology was more efficient. In our case, technology will allow us to do a better job in the classroom (Hymon, 1997, p. 18).

The consultant's technology plan was adopted by the board of education and the nuts and bolts of the plan and its implementation have been completed. Acquiring the services of technology consultants will allow most districts to move forward with confidence in their own five-year technology plan. Research also suggests that when looking for technology consultants for a school district be sure they have experience networking school districts and not only the corporate world. Robert Vietzke (1996) advises,

> Building a network for educational settings is a daunting task. It needs to be fast for student and administrative access from school or home, and secure so that outsiders can't break into it. It should connect to the Internet, but screen out content that doesn't meet local community standards. Of course, costs need to be contained, while still adopting the latest technology. Last but not least, it needs to be both educationally powerful and technically invisible.
>
> Given these requirements, and the seemingly constant introduction of technology innovations to address them, the only certain path to successful networking involves careful planning and frequent reevaluations along the way (p. 22).

It is also advisable to hire independent consultants who would provide the expertise and not necessarily the product. Lastly, the consultants should provide you with high end and low end technology options (Wall, 1996, pp.23-26). If a district is going to hire technology consultants Kathleen Vail, (1997, p.26) editor of Electronic School suggests seven tips:

- Get references from the last three of the consultant's jobs.
- Make sure you and the consultant understand each other.
- Find out whether the consultant specializes in a single area of technology.
- Don't hire a "techno twit."
- Do hire a consultant with a background in education.
- Don't hire a consultant with a background in education.

The apparent contradiction in the last two tips is not. The writer suggests that either consultant would be fine because they have differing specialized experience to offer.

Gone are the days when a Local Area Network (LAN) can be designed by school staff and then be expected to support the demand of a school district. School districts must have WAN's designed and implemented by technology professionals to assure success.

Once the WAN is in place, the organization can build an electronic community by using Intranet technology. A successful Intranet is useful, user-friendly and widely accessible. An axiom contributed to Bob Metcalfe, the creator of Ethernet explains the purpose of networking. "The value of a network is proportional to the number of users squared. If just one person is connected to a network, it's worthless. If two people are

connected that's better. But as you add more and more users, the network's value to the organization grows exponentially" (Osucha, 1996, p.23). A WAN will enable everyone in the district to be connected! For optimal success, the WAN will need to be two-dimensional so that it meets both the administrative and instructional needs of the district.

The research supports that implementing a Wide Area Network will improve an organization in many ways. The WAN will improve the district in both an administrative and instructional capacity. In the administrative arena data administration and management, communication and information access, and professional development will be improved. Particular to Gloucester Township is the need for the WAN to remedy the problems associated with tracking and maintaining the district's student attendance records. Similarly, notice how a WAN has simplified the process associated with the change of address of a student in the Tucson Unified School District.

> When a student in our school district's special education program moves to a new address, that information is communicated quickly and efficiently to every office that has reason to know. As soon as the new address is logged into the system, a series of automatic communications takes place. First, the system sends an e-mail message to the special education department indicating a change of address. Once that staff reviews the changed record and determines the change in location affects the student's transportation needs, a staff member flags the digital student record, which triggers another automatic e-mail message to our transportation department indicating a change in transportation needs (Rodriguez, 1997, p. 22).

This is an excellent example of how powerful A WAN can be. Imagine how many telephone calls, computer entries, and how much time would pass if this one change in a

student record took place in a district that did not have a WAN. It is this type of automation that can solve the various problems relating to the GTSD student attendance record keeping and data management overall.

The benefits of a WAN in Gloucester Township would also include improvements in data management and information technology (IT). The WAN will help the district manage data and information technology more efficiently and accurately. No longer will data disks be damaged while being transported from one building to another. Data will flow smoothly between all of the buildings in the district. Getting records from the administrative office will not require a telephone call, or a written request. It will not require the services of more then one person, or the use of inner-office mail. One person will retrieve the records electronically over the WAN.

Another district where technology has enhanced management is the Lexington (Mass.) Public Schools. Lexington had a modest networked database in 1975. However, in the past 20 years the district has invested in technology to improve their school district.

> The Lexington Public Schools have reaped managerial efficiencies that only years of foresight and planning can bring. [Perhaps the result of their five year plan.] Steady technology growth has allowed the district to build a large, centralized database; improve a vast array of standardized administrative operations; and design software applications tailored to many special needs...the district has made major improvements in budgeting, attendance tracking, record sharing and communications...The director of business and finance for the district said the most significant improvements made possible by the WAN are better budgeting, stronger relationships with the town government and freer building-to-building

> communication...The budgeting process alone has been slashed from two-and-a-half months to three weeks...Lexington's budgeting program is interactive and allows remote entry. Administrators can even access budget information at any time, even as it's input by another staffer, and multiple users can enter budgets simultaneously (Lasek, 1997, p.28).

This type of data management is just what is needed in the Gloucester Township School District. The administrative advantages of using the WAN in the Gloucester Township School District are limitless. What has been established and accomplished in the Lexington School district, and the Tucson School District can be done in the Gloucester Township School District once the WAN is in place.

One advantage that we have over other districts trying to implement a WAN is that we have LAN's already in place in all of our facilities. We also have an AS400 main frame database computer already to be used in the network located at the central administrative office. Still to be discovered is whether the district software will function, properly over the WAN. Furthermore, will the software we currently use take advantage of the power of the WAN or will we have to upgrade our software?

Brenda Raker states, "A complete technology integration plan must include applications from student and business information to avoid redundant data entry" (Raker, 1997, p.25). The district will need to purchase appropriate software packages for student information system (SIS) and one for financial information system (FIS). Raker is vice president of San Diego based SAIC, an information technologies company. She recommends,

> A well designed SIS provides information whenever it is needed, allows easy analysis of groups of students and provides historical data for trends analysis...on the business side, a well designed FIS integrates capital and operational activities, and allows for budgeting that reflects full life cycle costs (Raker, 1997, p.26).

Currently we use various SIS and FIS software in the district. However, it has not been determined what SIS and FIS software the district will use over the WAN.

Mentioned previously was that fact that the Lexington School District had a better relationship with the town government than in the past. This is the result of having an "electronic village" existing over the WAN. The electronic village or Intranet allows everyone connected to communicate and share data. This type of connectivity over a WAN improves communication between everyone in an organization and helps to establish and maintain good working relationships. Therefore, communication is another administrative advantage of having a WAN. In the Lexington School District some of the communications advantages are cited by budgeting and finance director, Sally Guryan.

> E-mail has been the main tool of communication for many years in our district. It's partly a cultural thing, but it also reduces paper significantly. I can send out a two-line request for current enrollment information to all six elementary schools, and the answer can come back in minutes. We also use it to send copies of lengthier documents (Lasek, 1997, p. 29).

The district has also established a home page on the Internet that has had up to 18,000 hits in one month. Eight thousand of those hits came from inside the district. The home page posts basic data about the district, plus more detailed information on select district policies (1997). Currently, our district has a home page, but our schools and

administrators do not have access to the Internet to contact the home page. This will all change once the WAN is in place.

In an article, entitled "Electronic Village" an account is given of one town's effort at creating an electronic community. The town is located in rural Virginia and its goal was to connect its citizens and schools electronically. A sign hangs in the front of the towns municipal building which reads, "Welcome to Blacksburg Electronic Village, where main street meets cyberspace" (Kongsem, 1997, p. A22). The goal of this electronic community is to help people communicate with each other more often and effectively. One of its developers says, "The network lets people feel less isolated; it doesn't replace face-to-face communications, it supplants it. The real value of the network, I think, is that we can tell our own story. We can get our voices back" (1997).

The research has shown that the WAN in GTSD will pave the way to establish an electronic community or Intranet within the district. The WAN will bridge the gap between the districts four administrative offices and the districts 11 school buildings. Administrators in the district will be able to share files, exchange e-mail, and speed up the exchange between questions and answers. Kille elaborates,

> A few districts have started a system of electronic communication among staff, students and even board members. Through district-owned computers ...they are able to send and receive messages to individuals on the system or to the entire networked system. The superintendent is able to instantly alert the board president to a problem in the middle school that should be put on the agenda for the next board meeting; the board secretary can notify the board of a bill in the legislature

that directly affects the district and needs their immediate lobbying efforts. The possibilities are endless [italics added], (1996, p35).

E-mail and the Intranet will also save the district money by reducing the amount of paper used for memos, reproducing documents, and inner office delivery. Jon Johnson an information technologist, explains the advantages of sharing documents over an Intranet,

> These documents might be distributed through newsletters, training materials, procedural manuals, or employee handbooks; with the distribution medium being paper. In a large organization, a single procedure might be printed, then copied and distributed a 100,000 times. Clearly this is a huge and continual expense, because the creation and distribution of documents never ends but must be repeated each time they are distributed (1997, p. 10).

For example, instead of having to print and distribute teacher manuals and district policies, the district could save money by publishing and storing them electronically. Then the staff can access these documents when needed over the Intranet. Johnson (1996) continues, "If your organization wants to improve workflow between collaborators, increase the efficiency of database management, or make your documents available online to all employees, you should be able to justify an Intranet" (p. 10). Additional support for justifying an Intranet because of financial savings is supported by the author of a book entitled Corporate Intranet. Bernhard suggests,

> The value of an Intranet is proportional to the number of applications, servers and users cubed. If you have just one document being served over an intranet and one person reading it, the system has some value because (hopefully) you're saving

someone time and money. But as you add more documents and users, the system's value increases exponentially. This is because you're saving more and more time and money for both the author and the users (since you no longer have to deliver the documents through the old, sluggish report/mail system) (1995, p45).

In summary, the research is supportive of using a WAN in the GTSD. The WAN will save the district money. All administrative and building offices will use the WAN to acquire information and to coordinate the connecting and sharing of all educational and business information. Consequently, the management effectiveness of the entire district will be improved. The expanded avenue and ease of communication over an electronic community is sure to bring the employees of the GTSD closer together. Though the buildings may be miles apart, the lines of communication will be just a mouse click away! The WAN will also provide the administrators a link of resource and reference to the outside world via the Internet. Although the driving force behind the implementation of the WAN was administrative in nature, there are instructional benefits as well.

A strong case is made for bringing a WAN with Internet access to a school district primarily for instructional improvements. Educational technology is a high priority in New Jersey's efforts to enable students to meet the Core Curriculum Content Standards. The Core Curriculum Content Standards incorporate the use of technology through seven academic content areas and emphasize it in the cross-content workplace readiness standard that requires students to be able to use technology information and other tools. The WAN will help the students meet the standards set by the state of New Jersey.

Instructionally, research indicates that Internet access for students and teachers will increase student learning and teacher effectiveness. A National Study conducted by the Center for Applied Special Technologies (CAST), operates on the premise that the best way to introduce students to online computing is to do so within the context of what is already happening in the classroom. The study compared the work of 22 fourth and sixth-grade classes in seven urban school districts. Half of the classes had access to the Internet and the other half did not. All of the classes studied issues of civil rights by researching specific topics, sharing information, and completing a final project. In the end, CAST researchers found that "fourth-graders with online access scored significantly higher on two of nine learning measures, and sixth-graders with online access scored significantly higher on four of nine learning measures" (Coley, 1997, p. A31). This study reveals what most technology educators already believe. That technology motivates, enhances, and improves student learning. The use of technology in the classroom makes a measurable difference in student achievement, attitudes, and interactions with teachers and other students. Principal Raul Fernandez believes the computer network supports the educational mission of the school. He says, "I believe that education is interactive; it can't be passive" (Wright, 1997, p. 33). The computer network helps the students become more interactive with each other, with technology, and with resources and references outside of the classroom by using the Internet.

> The deployment of networking technology into the classroom environment has been limited to date. Yet it is this environment that perhaps the most striking developments can be undertaken...Accordingly, much needs to be done to ensure

that the opportunities these technologies offer to children in the classroom are optimized. (Cisco Systems, Going to School on the Internet, 1996, p. CS1).

The Internet will provide students and teachers with electronic field trips, distance learning opportunities with chosen professionals, colleges, and universities. Teachers can collaborate with other teachers and seek the advice and support of higher scholars. "The network is a collaborative resource, built up with the help of all its participants. Thus, teachers are encouraged to organize their own projects and share involvement in them with their peers around the world" (1996, p. CS 2).

The research is overwhelming in support of implementing a WAN and the Internet in the GTSD for the aforementioned administrative and instructional benefits.

Chapter 3: The Design of the Study

I used a qualitative research design to evaluate the improvements brought about by the WAN in the Gloucester Township School District. A look back reveals that problems in the district necessitated the need for a Wide Area Network. The problems were data management, specifically the student attendance records, and the lack of Internet access for the students. The significance of the first problem was administrative in nature. It focused on unacceptable data management practices that led to a mismanagement of time and inaccuracies in record keeping. Part of the problem surfaced because an audit of the Application for State School (ASSA) report revealed errors in the reporting of student attendance. The second problem came about because of one of the goals set by the president's Technology Literacy Challenge. It stated that all classrooms must be connected to the Internet. With the aforementioned problems in mind, I developed a methodology for the design of my study. Included in this methodology was my strategy for conducting the research. I developed a working design, data collection plan, and a data analysis and interpretation plan to synthesis the data (Wiersma, 1991, p.83) and to prove that the problematic issues had been solved via the implementation of the WAN. There were two areas studied. The first administrative and the second academic. The district's data management was studied, along with the districts access to, and use of the Internet. The sites and subjects researched were determined by the scope of the problem.

Administrative-Data Management

Working Design

Administratively, the main problem was in the area of student attendance. The data sharing relationship between the schools and the district's attendance record keeper were studied. Specifically studied were the personnel who recorded and maintained the attendance records in each building. The person responsible for maintaining the district's student attendance records is Rosemary Bavuso. Her office is at the Mirenda building. Rosemary was the key person in the evaluation of using the WAN for electronically recording the district's attendance. She was familiar with the problems in the past and was able to give an honest evaluation of any progress and improvements.

The length of the study took place over a two-month period. The reasoning behind the two-month study is as follows. In the past, the district has never had an accurate attendance report because it was at the least a month behind. This was because inaccuracies were not discovered until the end of the month. That is when the schools sent their data disks to Rosemary and she uploaded them into the districts main attendance computer. At that time, the inaccuracies were discovered. Rosemary would contact the secretaries of each school and ask them to make necessary changes. However, the changes were not always made, and they would reappear at the end of the next month. Meanwhile the district's attendance report has now been reported incorrectly for two months. At which time Rosemary would contact the building administrator and notify them of the negligence of the person responsible for making the necessary changes to the buildings attendance record. Considering that there are 11 school buildings in our district this problem is repeated often and requires a lot of time to set correct measures in action. Consequently, the need for the two-month study was determined to assure that this problem was eliminated.

Data Collection

The methodology of data collection included a questionnaire survey, interview, an internal attendance audit, and a review of archival attendance reports.

The building secretaries throughout the district were given two questionnaire surveys. The questionnaires were given at the end of each month of the study. The questionnaire survey included a cover letter introducing the survey and provided motivation for a response. For example, the cover letter is on central office stationary and is signed by Mr. Suessmuth. The format of questionnaire survey is attractive and easily read. The questionnaire was sent at the end of each month with questions relative to the time spent on task in comparison to the previous system, ease of use, and accuracy of attendance report. The purpose of the questionnaire was to show the significant improvement the WAN had made in the buildings student attendance record keeping and the influence it has on the district's attendance reporting. The questionnaire was a selected-response survey. Except for the request of demographic information, the structured items related directly to the research problem.

A follow up post card was sent only to those secretaries not responding to the initial questionnaire survey. This follow up was necessary because of the secretaries history of dealing with attendance related data. For example, not changing the attendance information when requested to do so. This showed their lack of understanding or care for the importance of an accurate school and district attendance report. Therefore, I anticipated the need for a follow up postcard to increase the response rate of the questionnaire survey.

I used an interview schedule to acquire information from Rosemary Bavuso. I met briefly with Rosemary twice a month. This allowed me to gain access to Mrs. Bavuso's office and the computer that she uploaded the attendance data. It also enabled me to observe the procedure Mrs. Bavuso used in recording and reporting attendance data. Our meeting centered on Rosemary's observation, reaction, and opinion to the new system in place. I got Rosemary's approval for using a tape recorder during the interview process. Taping the interview helped to make our time together most efficient and effective.

Rosemary Bavuso conducts an informal district attendance audit at the end of each month. However, Dr. Lucille Stewart coordinates the district's attendance in preparation for, and the completion of the ASSA report. She is the Supervisor of Research and Development for the district. Once completed, Lucille conducts her own attendance audit and compares that with Rosemary's monthly reports. The comparison of these two audits agree more closely now than in the past. The reason for this is that attendance data has been updated on a daily basis. Therefore, errors are detected daily, instead of waiting for Rosemary's monthly reports and counting on the secretaries to make the necessary changes. In the future, this means that the ASSA report will be more accurate as well as improving the accuracy of the district's daily attendance reports.

A review of the archival attendance records, and ASSA audits, revealed that there has been an improvement made in the accuracy of these records as a result of using the WAN to share and manage attendance data.

Data Analysis and Interpretation

Questionnaire survey results have been presented in a descriptive manner. The intern summarized the findings of the data and has used it to prove that the problem of

buildings reporting their attendance inaccurately was eliminated. Also determined by the questionnaire survey are the advantages of sharing general data electronically, rather than by snail mail.

The interview instrument used is supportive of the findings from the questionnaire survey. That being, the buildings are now able to report their attendance accurately and send it to Rosemary electronically on a daily basis. If there is a problem similar to the past, Rosemary is able to correct that problem and electronically send the correction back to each building. Another use of this instrument was to get suggestions for improvements to the new system. For example, can we have the system set up so the secretaries of each building can enter their own data by electronically connecting to Rosemary's attendance recording program? This would eliminate the need for Rosemary to have to reenter any attendance information. Another possibility could be the computer preventing inaccurate information from being entered. If the school building enters incorrect or duplicate information about a student, the program would not allow it to be entered until the conflict was corrected. The interview instrument has also identified any problems that might still exist in the area of attendance.

The internal audits have proven that the attendance reporting problems of the past were resolved because of the WAN. A chart displaying the inaccuracies of the past audits with the correct audit for the current year has been created. This chart will only include the two-month period for which the study was conducted.

The ASSA reports of the past will also be compared and contrasted with the ASSA report under the new system. However, this will not be able to be done until October 15, 1998 when the ASSA report is due to the state.

In summary, the interpretation of the data collected and analyzed has been written in descriptive form. It proves that using antiquated methods of sharing and exchanging data contributed to the data management problems in the past. Although, the WAN does not eliminate all of the data management problems, without the WAN the improvements made could not have taken place.

Academic – Internet Access

Working Design

Because of the two phases of implementing the WAN the three middle schools were the only schools included in the study. Phase 2 will begin the following year bringing the Internet to the rest of the elementary schools in the district. The study included acquiring data from the computer teachers, librarians, and regular classroom teachers at each building. The schools studied were Glen Landing, C.W. Lewis, and the Ann Mullen Middle School. The length of the study was three months. This was to give everyone time to become acclimated to the Internet and its use in the school setting.

Data Collection

The data collection used was a teacher survey about Internet access and use. The entire district was surveyed although Internet access was only implemented in the middle schools under Phase 1. However, I anticipated that the teacher survey would generate interest and promote a positive feeling towards Internet use in the classroom and throughout the district. The teacher survey used acquired some demographic information, opinions, and data about current Internet accessibility, and use in the building and classroom. The teacher survey was two sided and on central office curriculum stationary. A brief explanation of the survey was given at the top of the teacher survey. The survey

itself was statement oriented with the respondents filling in the blanks or being to select the extent of their agreement or disagreement with the statements.

Data Analysis and Interpretation

The data collected from the teacher survey was to substantiate that the district is in the process of meeting the president's Technology Literacy Challenge (TLC). This will enabled the district to continue to participate in Federal technology funding. The teacher survey also provided demographic information and Internet use information to determine possible sites and personnel for Internet training. Also indicated by the teacher survey were those classrooms that do not have Internet access, although their building does. Perhaps, these classrooms could be included in Phase Two of the WAN implementation. The teacher survey statements were tabulated, and a chart was made indicating the type of response to each statement district wide. That information helped to generate a summary report.

In summary, the information provided by the teacher survey was used to substantiate that the WAN had brought Internet access to all of the middle school buildings, and that it is being used in the classroom. It also showed the need for Phase 2 to be completed because of the responses from the elementary school teachers.

Chapter 4: Research Findings

The implementation of the WAN was delayed due to the district waiting on the availability of recently introduced Federal Telecommunications Funding called E-Rate. E-Rate funding was not available until January 1, 1998. However, due to further technicalities at the Federal level the funding was put on hold for another 75 days. Therefore, the implementation of the WAN, which was originally scheduled to begin January 1, 1998, was postponed until March 1, 1998. The completion date was set for June 22, 1998. For obvious reasons, the completion of the WAN is imperative for an optimal validation of the research. Inasmuch as the researcher desires this to be the case, it is not. The WAN will not be completed in time to thoroughly analyze its success.

Consequently, this delay has forced the researcher to project certain aspects of the research findings and analysis. The review of the literature overwhelmingly suggested that a Wide Area Network is the surest way to alleviate data management problems. In addition, the WAN is also the most cost effective and efficient way of providing Internet access for the staff and students in Gloucester Township. Having reviewed the literature and examined the data management and Internet access problems in the Gloucester Township School District, I am certain my research and its analysis will prove that the WAN will satisfactorily meet the expectations of my thesis.

Due to the aforementioned reasons and in spite of the limitations of having to project relative outcomes of this project, the researcher is confident that the projected results will accurately follow once the WAN is completed. The problems will first be identified and then explained. The projected impact of the WAN will be made last.

Identification of the Problem

Administrative - Data Management

To show that the district experienced difficulty with data management, more specifically attendance data in preparation for the ASSA report, I have collected from four sources. The first source was a pre-survey of the attendance secretaries. The results of this survey are displayed in Table 1.

Table 1

Secretary Attendance Survey before the Wide Area Network

Question	**Response**
In comparison to other job responsibilities how would you rate your attendance responsibility?	0% rated attendance as easy 20% rated attendance as an average task 80% rated attendance as a difficult task
How much time did you spend of attendance related tasks?	0% rated minor time spent on attendance tasks 40% rated average time spent on attendance tasks 60% rated major time spent on attendance tasks
What was your attitude towards your attendance responsibilities?	0% enjoyed their attendance responsibility 20% had an average attendance responsibility attitude 80% disliked the attendance responsibility
How many times did you have to adjust your attendance data to match the district's coordinator?	0% never had to 80% had to 9 times or less 20% had to 10 or more times
How many times did you have damaged data disks?	10% never 90% 5 times or less
Do you feel the WAN would improve the accuracy and efficiency of your attendance reporting?	50% moderately 50% significantly

Prior to the implementation of the WAN, the results of the survey indicated that all of the buildings in the district experienced various problems with attendance recording. The survey revealed that all of the ten secretaries responsible for their buildings attendance records disliked or felt average at best about this responsibility. Obviously, this is a result of the many problems associated with completing the attendance task. Also significant to note is the fact that all of the secretaries reported problems managing their data disks.

As indicated by Table 1 the secretaries believe that the WAN will bring about positive changes to their attendance responsibilities. Contributing to this fact is that the secretaries were made aware of the possible benefits of the WAN before this survey. Each month the district has a User's Workshop for the attendance secretaries. At this meeting, the secretaries were given a brief overview of the WAN and it's progress. Once the secretaries believe that the district's attendance procedures are going to improve because of the WAN, I feel their attitudes and job satisfaction will improve as well. My hypothesis is that once the post-questionnaire is completed that the problems associated with sharing data by computer disks will be eliminated.

In addition to the questionnaire survey, I also summarized in narrative form the information acquired from two interviews with Rosemary Bavuso. Rosemary is the person in the district that enters the final attendance information in the main computer and then she identifies errors and conflicts in the districts overall attendance report. Once identified Rosemary would notify the building secretaries to make the needed changes. The following details the significant findings as a result of the interview schedule. After observing Rosemary's office and discussing her job, I felt that she was a very competent

and dedicated secretary. Rosemary exemplified a very professional style in our meetings and in my observation of her routine attendance related tasks. Rosemary identified the same problems that the secretaries had reported in the pre-survey. However, Rosemary added that some of the secretaries would not cooperate with her requests to make the needed changes to the attendance of their building. These errors are discovered by Rosemary at the time she uploads each buildings attendance records into her computer. The fact that the secretaries do not make the necessary changes when asked to do so only makes Rosemary's job more difficult. At one Rosemary said, "If the secretaries were able to enter their data directly into the computer it would eliminate many of the mistakes" (R, Bavuso, personal communication, February 12, 1998). Mrs. Bavuso explained that the software identifies most errors and blocks the user from entering the incorrect data. I explained the purpose of the WAN and how it would eliminate the need to exchange data disks. Two more interviews are scheduled for after the implementation of the WAN.

Furthermore, I have included data from the district's Supervisor of Research and Development, Dr. Lucille Stewart. The data included is an informal internal audit in narrative form. Identified by this audit are many of the factors that led to inaccuracies associated with the reporting of the district's attendance and student population. The informal internal audit is located in the appendix. There were a multiplicity of errors and reasons for their occurence listed in this audit. Once the WAN is completed, another internal audit will be conducted in October of 1998 for comparison to the October 1997 internal audit.

Finally, the findings and recommendations of the NJ State mandated audit for the 1997-1998 will be examined. However, this cannot be completed until June 1998.

Therefore, the results of those findings are not included at the time of this writing. Based upon the results of the districts past practices I project the state's audit to parallel the findings of the district's internal audit. For example, discrepancies will exist in the ethnicity report, special education classification, student attendance, etc. This external audit will also be done after the implementation of the WAN. The June 1999 NJ State mandated audit will be compared to the June 1998 audit. I project the results of the later audit to be improved significantly in the attendance and related areas over the June 1998 audit.

Academic-Internet Access

The Internet Access problem in the district was very easily identified by a building questionnaire. The results of the questionnaire indicated that the three middle schools had two computers connected to the Internet. One was in the media center and the other in the Computer Science classroom at each building. Only one elementary school had Internet Access. However, that was an entire lab, 20 computers that were connected to the Internet. Therefore, to meet the goals of the president's Technology Literacy challenge the Internet has to be connected to all of the remaining classrooms at the three middle schools, and all of the classrooms at the eight elementary schools. The first phase of the WAN will complete the wiring to connect all of the classrooms in the middle schools. The second phase of the WAN will likewise do the same for the remaining elementary schools. However, actual Internet Access for all of the buildings and classrooms has not been officially set. This is due to the postponement of the WAN. Once the Internet Access is completed at all of the buildings, another questionnaire will be distributed to substantiate that all of the classrooms in all of the schools in Gloucester

Township have Internet Access. Consequently, this enabled the district to meet the requirements of the Technology Literacy Challenge.

Influence of the Project

The summary of my research affirms the fact that the district needs to make improvements in the flow of data throughout district. The major problem with the district's student attendance records is directly related to the current practice of exchanging data disks. I believe that this data management practice has also led to low moral among the secretarial staff in reference to their responsibilities with the attendance record keeping. It must be very frustrating for the secretaries to use antiquated methods of exchanging data when their exists more efficient and accurate methods available. Furthermore, the data management problems have effected the accuracy of other reports in the district. The Supervisor of Research and Development for the district indicated that other related reporting in the district is not accurate because of the mismanagement and collection of data.

The results of the Internet Access Surveys identified that the majority of the schools in the district do not have Internet access. In addition to solving the data management problems in the district, the implementation of the WAN is needed to meet the goals of the Technology Literacy Challenge.

Based upon the findings of my research the GTSD needs to implement a Wide Area Network to alleviate its data management problems and to provide the Internet to its staff and students. The WAN will provide the hardware and communication technology to solve all of the problems associated with the district's attendance data management. Despite the new problems identified by the findings of the research, the positive impact

of the WAN will be clearly seen when the June 1998 NJ State Audit is compared to the June 1999 NJ State Audit. I project that the implementation of the WAN will vastly improve the management of data throughout the GTSD while at the same time provide the means of bringing the Internet to all of the schools and classrooms in the district.

Chapter 5: Conclusions, Implications, and Further Study

Major Conclusions

Project

The major conclusion of this study is that the Wide Area Network will help to alleviate the data management problems experienced by the Gloucester Township School District. In addition to this administrative improvement, is the educational merit of Internet access for all the schools in the district. The intern's overview of the GTSD revealed that the district is still growing. The student population is close to 8000. The projected increase in the student population means the district's data management problems would increase as well. However, this will not happen because the district has taken the necessary steps to implement the WAN.

Established by an overwhelming amount of data was the fact that the district experienced various data management problems. The intern conducted historical data collection, surveys, and interviews to identify the cause of the problems. The most significant problems found were errors relating to the district's Application for State School Aid. One prevalent cause is that attendance data disks were being damaged in transport to the district's attendance secretary. Another problem was that various departments in the district, including each school building, could not coordinate or accurately reconcile their attendance databases with the district's central office attendance database. Compounding these problems was the fact that employees throughout the district were frustrated by the recurring data management problems. This frustration also led some employees to perform poorly by not completing their tasks

efficiently or accurately. The combination of these problems made it impossible for the district to produce accurate attendance records.

Consequently, after compiling and analyzing the research the intern concluded that the WAN would be the surest way to bring about an effective solution. The intern's research suggested that the WAN would eliminate the need to exchange data disks, only one attendance database would be needed for the entire district, and that morale among the district's employees involved with data management would be improved as a result. After meeting with the district's technical services supervisor it was decided that the WAN would be the avenue to provide an accurate and efficient flow of data throughout the district. After collaborating with the SBA and the technical services supervisor, it was agreed upon to hire the Thomas Associates as consultants to provide the district with the needed expertise in reference to the WAN.

The Thomas Associates did the entire planning for the WAN. This included applying for various grants, timeline projections, and writing up all of the bid specifications for implementing the WAN. The implementation of the WAN has had some setbacks that were discussed earlier, but the project is still moving forward with a projected completion date for September 1998.

Leadership Development

The leadership development of the intern can be reflected in the intern's ability to move the organization through the resolution of the data management problems that existed in the district. The intern was able to experience the dynamics of leadership through successfully meeting the challenges presented by this project. For example, the challenge of communicating the findings of his research with district administrators and

then using it to gain the administration's approval for change in the district's data management system. The intern also showed growth in leadership development because the intern learned to yield to the experience of his superiors and to take advantage of the expertise of other chosen professionals. It was under the recommendation of the technical services supervisor that the Thomas Associates were hired as consultants. Hence, the intern has also developed the skill of working with contracted consultants to complete the WAN in the district.

Furthermore, the intern has learned to be professional at all times for the good of the organization. The intern realizes the importance of accepting his role as part of the team in the effort of reaching the goal. It does not matter who gets the credit. The most important aspect of any project is to operate under the philosophy of completing the project properly and professionally. Consequently, when given the opportunity to lead in the future the intern will adhere to that philosophy.

In addition, the intern enhanced his leadership abilities by experiencing first hand through research, analysis, and decision making, the steps necessary to initiate and bring about positive change within an organization. The intern developed the skills of problem identification and cause, research and data analysis, and effectively implementing a resolution. The scope of this project enabled the intern to refine his problem solving skills. The intern learned to cope with the adversity brought about by schedules not being kept and plans being delayed. In spite of these types of setbacks, the intern has learned to maintain a professional demeanor and to keep his vision on the goal of the project! The intern has learned to accept adversity as a potential variable in any project promoting organizational change.

Organizational Change

As the most contemporary philosophies indicate, when an organization has the opportunity to undergo significant positive change there is a revitalization of climate and culture. The GTSD will experience organizational improvements administratively and academically due to the implementing of the Wide Area Network. Administratively, the organizational climate of the district will be improved because of its success with exchanging data over the WAN. The 26 square miles that encompasses the districts ten-school buildings and four administrative buildings will be transformed into an electronic village. No longer will the buildings function in isolation. The Wide Area Network will provide the necessary electronic data link for all of the buildings in the district to exchange data. Administrative data will flow smoothly throughout the district over the Wide Area Network. The collegiality of the organization will grow due to the benefits of sharing data electronically. A synergistic relationship will develop between the employees of the district and the new technology. This synergistic relationship will empower the employees to efficiently, effectively, and accurately manage the district's data. Successful data management throughout the district will help to produce employees that are positive, productive, and professional!

Academically, the districts use of the Internet at all of the buildings will create a new excitement for students and teachers alike. Each classroom's source of references and avenues of communications will extend around the world via the Internet. This will create a positive educational atmosphere throughout the entire district and community. The potential for organizational change brought about by having Internet access for all

the buildings in the district is immense. For example, the student's use of e-mail to collaborate on projects, the development of school web pages to keep the students and community informed of school happenings, and the new avenue of opportunity that teachers will have to explore, experiment, and collaborate with other professionals.

Major Implications

The major implication of this project is the fact that many of the intern's conclusions were speculative because the WAN has not been completed. The WAN has been postponed for a variety of reasons that were explained in Chapter 4. However, the intern believes that the conclusions stated are the result of an honest and logical evaluation of the scenario. For example, the Camden City Public School System is currently operating a WAN. The benefits they have observed are improvements in data management, staff morale, and an increase in staff communication and technology awareness throughout the district. (S. Greco, personal communication, April 10, 1998). Important to note is that the WAN is only the means by which the district can address the needed changes. However, the transition to implementing a WAN includes software selection, staff training, and the hiring of additional technical staff members to administrate the WAN. Consequently, implementing the WAN in the GTSD leads the district into the need for further study.

Further Study

The WAN provides the hardware to meet the data management challenge that operating a district with 8000 students presents. However, implementing the WAN in the GTSD has led to the need for further study in a few areas. Foremost, the district needs to purchase the proper networked data management software. Currently, the district is using

a network version of McGraw Hill for recording and maintaining the district's student attendance. However, as indicated by the Office of Research and Development other problems exist. For example, the ethnicity report, special education and classification reporting were being inaccurately collected and reported. The data for these reports are gathered by various departments and located at various sites. I believe this has led to the inaccuracies in other district reports. These other problems exist not only because of the management of data, but because the district needs to acquire the proper software that will allow them to do all of their record keeping over the WAN. The WAN only provides an avenue to solve these and other types of data management and recording keeping problems. The district needs to acquire the proper networking software that will improve the method and accuracy of a broad range of needed school reports.

The district also needs to create a plan to provide the needed training in both the use of the WAN and the new software associated with it. This should be an ongoing plan for training until everyone in the district is competent in the use of the WAN and software. This software and hardware training is the only way to insure that the WAN will be used correctly to alleviate, then eliminate the data management problems existing in the district.

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Appendices

Appendix A

To all Secretaries in charge of attendance:

I am thanking you in advance for taking the time to complete the following survey. I am doing my internship in our district and this survey is part of a research project that relates to the district's attendance procedures. Your input in this process is invaluable. This is a pre-survey that will be compared with a post-survey to be completed once the Wide Area Network is in place. Upon completion of this survey please return it to me at the Mullen School.

Do not put your name on this survey. Please answer all questions honestly and to the best of your knowledge.

1. How long have you been responsible for recording/reporting the attendance and related data at your building?

_____

The questions below are in reference to the last two years. Please circle your answers.

2. Of all of your job responsibilities rate attendance in respect to:

A. Difficulty of task	Easy	Average	Difficult
B. Time on task	Minor	Average	Major
C. Attitude towards	Dislike	Average	Enjoy

3. How many times have you had to adjust your attendance & related data to coincide with Mrs. Bavuso's monthly reports?

Never Nine times or less Ten or more

4. How many times have your attendance data disks been damaged?

Never Five times or less Six or more

5. How many times have your attendance data disks been lost?

Never Five times or less Six or more

6. Do you feel a WAN that would allow you to enter attendance data directly into a central computer would improve the quality and efficiency of attendance responsibilities?

Yes No

7. If yes, how much of an improvement?

Minor Moderate Significant

GLOUCESTER TOWNSHIP PUBLIC SCHOOLS
Office of Research & Development

DATE: October 8, 1997

TO: Robert Suessmuth
Superintendent

FROM: Dr. Lucille Farrell
Dir. Research & Development

RE: ASSA Application 1998-99
Special Education Data

Beginning with the ASSA Application for the 1998-99 school year, we must report special education data according to new criteria (not by "program"). An error will exist if a district reports pupils who are classified as educationally handicapped by the program in which the pupil is enrolled rather than by individual pupil's classification.

"All educationally handicapped pupils are to be reported based upon the pupil's classification."

If a pupil classified as ED is enrolled in a PI class, the pupil is to be reported as a Tier III pupil. If a pupil classified as ED is enrolled in a regular grade class, the pupil is to be reported as a Tier III pupil. NOTE: This is exactly opposite of the way we have been reporting—by "program" not by "classification" and nothing in the way of Tiers. Please note the attached pages.

After today's meeting, I will contact Town Place Associates. They will have to modify the EMC program to allow us to generate Special Education printouts differently. In addition, Special Services will also have to provide other information in regard to "Related Services" (explanatory page attached).

Rod and I can talk with you in the morning and advise other new findings we learn at today's ASSA Meeting. Thank you.

lf

Encls.

ASSA CONCERNS/PROBLEMS

1. ASSA Compliance Forms: A copy should automatically go to R&D. Schools should be reminded that this data must be reflective as of OCT. 15.
2. Students can only be counted one time. This came up in a couple of cases where a Kindergarten child had free milk, and the child was in a S-C class in the PM and was therefore being given free lunch.
3. The student count for ASSA Compliance Form Free Lunch must equal the Free Lunch/Milk count on the Schools Diskette for Oct. 15.
4. The computer printout form (generated by each school with the exception of Mullen) must accompany the Compliance Form to R&D. The title reads "DATA IS SUMMARIZED FOR OCT 15 1997 TO OCT 15 1997 (1.0 SCHOOL DAYS).
5. MULLEN and GRENLOCH: Since both of these schools are on-line directly into EMC, they cannot make any adjustments (entries or exits) until the final ASSA report is run.
6. SCHOOLS:

A. ANCILLIARY SERVICES—Schools must enter ancillary services, and list must be verified by the respective therapist or respective staff for the ancillary services. . These numbers should be correct on an ongoing basis so no one would have to run around after the cut-off date trying to get correct numbers from the individual therapists.

B. HOME INSTRUCTION –On the first day of school, if the student is on home instruction, the student must be entered as re-entering and then placed on home instruction. This way, when the student returns, the school can enter the appropriate code for returning from home instruction.

C. DUAL STUDENT IDENTIFICATION NUMBERS FOR SOME STUDENTS, particularly for children going from Grenloch to Glendora.

D. Schools often had incorrect Special Education codes, e.g., placed in a regular class as opposed to having a code for self-contained class placement (Erial).

E. Schools –students who never started should be deleted after the numbers of days set by Dominich and EMC.

7. Ethnic Codes: Some students without ethnic codes. Lots without ancillary services. e.g., Mullen.

8. BSIP Codes: Mullen used Y for Yes. Could not retrieve data. Schools must use R (Reading), M (Mathematics), L (Lang./Writing), or M before code to indicate "monitoring only."

SPECIAL EDUCATION

1. Four (4) separate data bases exist for Special Education:
   Paulette, Chris Ellis, Schools, R&D
   None agreed

2. Paulette's & Chris
   -"Inactive" students were combined with "Active" students, which included: Students who had moved, students who had graduated, students who had gone on to outside tuition, and students who had transferred within the District at the incorrect school. In addition, some active students were missing.

3. PRESCHOOL HANDICAPPED
   Chris, 31 at Chews and 8 at Grenloch
   Correct numbers were 33 at Chews and 14 at Grenloch.

4. Schools had students classified as one classification. Paulette had another classification. In some cases, Paulette was right, in others she was not.

5. "OTHER LIST"
   John advised that all students on this list should be coded "Resource Center." It is important that the schools be notified so they can made this coding and understand what is required, e.g., for mainstreamed students in the future. These students are getting lost in the shuffle because they are FullTime Mainstreamed and they are forgotten about (e.g., Danny Lane VI).

6. Students who never started the new school year. Some students were on school attendance roll even though they never attended in September or through Oct. 15.

7. When disks are uploaded by RoseMarie and the "Error List" has been corrected, does she then produce a corrected monthly report for Paulette and Chris and for her files? The schools could also generate a monthly report.

8. Ancillary Services could be verified by Special Services staff. This could routinely be one on a monthly basis.

9. Big problem: Wrong grade levels and especially for retained students

10. Program Modification needed to track:
    Homeless Students
    Home Instruction Students
    Home Schooling (needed for SIMS)
        This is not recorded in EMC and could possibly distort school register data.

11. TUITION STUDENTS
    Records are kept by RoseMarie. She sends this information to R&D for SIMS. RoseMarie did an excellent job. We had no problems with tuition students and their placements.

CRITICAL NOTE: THE SCHOOL'S INFORMATION MUST BE CORRECT. THIS SERVES AS THE SUPPORTING DOCUMENTS FOR THE ASSA AUDIT.

Other Miscellaneous Comments:
Special Services data base does not include tuition students:

- number of students
- list of students
- Bd. of Education Contract
- lunch status (eligible for free lunch/milk or reduced lunch). In addition, the count on school Columbia system did not equal was reported to us from Suzanne Murray, Cafeteria Supervisor.
- sent to private schools
- sent to public schools
- Regional Day
- Commission for the Blind
- County Special Services District
- State Schools

Special Services data base printouts for ancillary services (counseling, OT, PT, Speech, etc.) for students did not match school's lists.

BSIP students were not coded for all schools.

Some Pre-School students on Middle School roster.

Sometimes ancillary services were posted for the wrong sibling in the family.

Appendix C

GLOUCESTER TOWNSHIP PUBLIC SCHOOLS

Technical Services Department
Rodney A. Greco, Supervisor
17 Erial Road
Blackwood, NJ 08012
(609) 227-1400 ext. 225 fax (609) 227-4112

PHASE I

April 1, 1998	Cable Bid
April 13, 1998	Begin Construction
May 1, 1998	Equipment for Phase I purchased under NJ State Contract.
May 15, 1998	Digital circuits (frame relay + T1) ordered and activated under Bell Atlantic Access plan (under tarrif rate and free equipment provided, routers + CSU/DSU's)
May 15, 1998	ISP established. Provided by Interactive Network Services (lowest of all quotes provided)
May 15, 1998	WEB Server/ Firewall. Provided by URLabs. I-Gear & Mail Gear software. (see attached)

PHASE II

June 1, 1998	Thomas design cabling improvements at Phase II facilities
June 1, 1998	Receive NJ State Contract Quote for LAN Hardware
June 1, 1998	Secure quote for Phase II WAN circuits/Hardware through Bell Atlantic Access NJ
June 15, 1998	Solicit quote from BANI for NJ State contract cabling.
August 1, 1998	turn on WAN Circuits for Phase II
August 1, 1998	Cabling upgrades completed at each facility.
August 1, 1998	LAN hardware installed.
August 15, 1998	LAN connected to WAN.

Biographical Data

Stephen V. Mecke

August 17, 1958 / Elmer, New Jersey

Glassboro High School

BA, Elementary Education, Glassboro State College

Middle School Teacher, Gloucester Township School District, Computer Science