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# Computer based technology used by faculty members at Vineland High School South

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# COMPUTER BASED TECHNOLOGY USED BY FACULTY MEMBERS AT VINELAND HIGH SCHOOL SOUTH

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ABSTRACT

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COMPUTER BASED TECHNOLOGY USED BY FACULTY MEMBERS AT VINELAND HIGH SCHOOL SOUTH
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The purpose of this study was to evaluate teacher use of computer based technology for personal use and for professional use at Vineland High School South. This study also sought to identify factors that contributed to faculty use or non-use of computer based technology in the classroom. Professional use of computer based technology by teachers was examined within specific categories, including: class preparation, delivery of information, in-class student use, special education accommodation, e-mail communications, and recording of grades. The teachers of Vineland High School South indicated the ways in which they acquired their computer knowledge and what sources were most valuable to them. Using counts and percentages, this descriptive study provided a "snap-shot" of computer use at Vineland High School South and discussed implications for future staff development and training, as well as potential areas of contribution of the library media specialist.

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# CHAPTER I

## STATEMENT OF THE PROBLEM

Living in the 21st century, technology is an inescapable reality. In all areas of life, technology is used. This is evident in education today. In past years, there was great emphasis on getting technology into the classrooms. Today, the emphasis is on using the technology that now exists in classrooms and libraries.

As part of No Child Left Behind, there is a National Education Technology Plan that includes "equipping teachers with the skills to use technology as an instructional tool." (National Educational Technology Plan, 2003, Background ¶1). The importance of instructional technology is not only recognized at the national and state levels, but also on the local level. As an Abbott district, the Vineland Public Schools have been required to create their own technology plan. This process has led district level administration to question school principals and technology coordinators about the appropriateness and effectiveness of computer based technology used in the classroom.

Some studies have focused on factors that affect a teacher's use or avoidance of instructional technology (Dusick, 1998), as well as the lack of technology education in teacher education curricula (Kemp, 2000). Some have felt that many new teachers enter the field unprepared to use educational technology in the classroom. It has also been true that many experienced teachers did not have the skills to use technology in their professional setting. "Knowledge and technology skills should be continually assessed so

that professional development programs meet the immediate needs of administrators and teachers" (Golden, 2004, ¶5).

## Purpose

The purpose of this study was to evaluate current teacher use of computer based technology for personal use and for professional use at Vineland High School South. It also identified factors that contributed to their use or non-use of computer based technology in the classroom. The results obtained can identify appropriate professional development areas to increase faculty professional use of computer based technology and ways that library media specialists can contribute to this professional development.

Library media specialists have a special role to play in technology professional development. A library media specialist should assume a leadership role in developing and promoting educational technology throughout his/her school. "Using the concepts and skills embedded in instructional technology, school library media specialists collaborate with teachers to develop and manage effective instruction and to evaluate processes and resources for learning" (American Library Association, 1998, p.128). As a library media specialist, the researcher hoped to utilize the information gained in this study to formulate professional development and increase teacher professional use of computer based technology, especially for instruction at Vineland High School South.

Research Questions:

- How do high school faculty members utilize computer based technology for personal use?

- How do high school faculty members utilize computer based technology for professional use?
- What factors influence high school faculty members' professional use or non-use of computer based technology?

## Definition of Terms

*Abbott district*: any district that was defined as a special needs district under the "Comprehensive Educational Improvement and Financing Act of 1996" (CEIFA) or the "Quality Education Act of 1990" (QEA); judicial remedy is applicable to these districts under the Supreme Court's decision in Abbott v. Burke, 119 N.J. 287,394 (1990) (Senate Budget and Appropriations Committee Statement to Senate, No. 806, 1998).

*Computer based technology*: for the purpose of this study, computer based technology includes any applications performed on or utilized through a personal computer.

*Educational technology*: for the purpose of this study, educational technology refers to computer based technology and applications that relate to education and/or instruction.

*Faculty members*: for the purpose of this study, faculty members refers to all instructional staff members at Vineland High School South. Used interchangeably with teacher.

*High school*: generally describes a school with grades nine through twelve; for the purpose of this study, high school refers to a school with eleventh and twelfth grade students.

*Instructional technology*: for the purpose of this study, instructional technology refers to computer applications used in order to enhance learning or deliver information to students.

*Library media specialist*: "the professional administrator of a library media center who has the appropriate degree and meets the requirements of state certification" (McCain & Merrill, 2001, p. 114).

*Personal use*: for the purpose of this study, personal use refers to teacher utilization of a computer for his/her private activities or interests.

*Principal*: "one who holds a position of presiding rank, especially of an elementary or high school" (Dictionary.com).

*Professional use*: for the purpose of this study, professional use refers to teacher utilization of a computer for school related, educational, or instructional purposes.

*Professional development*: "…, opportunities and experiences such as conferences and seminars that enable teachers and administrators to build knowledge and skills for improved instruction" (McCain & Merrill, 2001, p. 157).

*Technology coordinator*: "the educator employed for or delegated the administrative authority and responsibilities for developing, implementing, and maintaining the technology program for a school, district, county, region or state" (McCain & Merrill, 2001, p.193).

*Technology education*: for the purpose of this study, technology education refers to any formal education in computer based technology applications for an in-service or pre-service teacher.

## Assumptions and Limitations

The researcher in this study made the assumption that subjects interpreted questions as intended and were honest in their responses. Although subjects responded anonymously, there was a slight risk that subjects could respond in a manner that was in agreement with district requests and policies and may not accurately represent the truth. The findings of this study represented activities at Vineland High School South and may be limited in its application to other districts and regions. The researcher also made the assumption that previous research cited was accurate and reliable.

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# CHAPTER II

# LITERATURE REVIEW

## Changing Technology

As computers made their way into education, there were many initiatives to increase the number of computers in schools and classrooms. Student to computer ratios were studied and compared among districts. One study stated that in our country's public schools there was one computer for every 125 students in 1983 and by 1985 there was a computer for every nine students (Glenna & Melmed, 1996). Most schools in this country have experienced rapid growth in computer access. This study by Glenna and Melmed found that even with the increased numbers of computers, most schools were making minimal use of the computers available to them. There is no wonder why school districts become concerned about the quality of computer applications.

The 1990's brought major changes to educational technology. The Internet and World Wide Web, networking of computers and advancements in communications provided new resources for instruction to schools (Scheffler & Logan, 1999). Prior to this, emphasis had been placed on programming competencies. A study by Neiss found that the importance of programming competencies lessened as technology advancements allowed for enhancements to curriculum and instruction (cited in Scheffler & Logan, 1999). Multimedia presentation software was developed during this time which provided great changes for classroom presentation of information. The Internet provided vast

access to information and software became available to teachers to assist them with record keeping. These changes brought a change in emphasis from student computer literacy to an integration of technology throughout education (Technology Integration, 2004).

As technology rapidly advanced, schools had to make changes more quickly than they were accustomed to. Not only did curriculum need to change, so did teacher training and teacher evaluation. During this period, the Federal Office of Technology Assessment found that teacher use of technology was used primarily if, when, and how the teacher desired to use it (cited in Bebell, Russell, & O'Dwyer, 2004). After spending funds to put computers into their schools, districts began to want teachers to be held accountable for technology use. It became difficult to evaluate teacher use because of the quickly changing nature of technology. As the definition of a technology-using teacher changed, studies became confusing and often contradictory. "As the variety of ways in which teachers could use technology increased, defining a technology-using teacher became more complicated" (Bebell, Russell, & O'Dwyer, 2004, p. 46).

Rapidly changing and advancing hardware and software also made defining teacher competencies difficult. A study by Scheffler and Logan (1999) stated that districts must continually update teacher technology training and review changing competencies. These competencies must be continually reviewed and updated to keep up with changing technology.

Golden pointed out that in a short period of time, technology evolved to a point that it has become indispensable in our society. Living in a global economy, our students must be prepared to be successful in this technology driven world. Students must be able

to use computer applications in numerous ways. By utilizing technology in the classroom, instruction is enhanced and students' ability to utilize technology in meaningful ways is increased. Technology is changing classrooms, making them more student centered and the Internet allows education to be an around the clock process (Golden, 2004).

These changes can have great benefits to students and the educational process. Technology integration can enhance student learning and performance in numerous ways. For this reason, best practices for technology integration are being considered by school districts nationwide.

## Best Practices for Technology Integration

The No Child Left Behind Act mandates that schools effectively utilize technology in order to increase student achievement (National Education Technology Plan, 2004). In order to prepare students for the 21st century, it requires that teachers obtain the skills that will enable them to use technology for classroom instruction. This legislation "calls for studying…the 'conditions and practices' that increase achievement, increase teachers' effective use of technology, and enhance learning environments and opportunities" (Dynarski, Honey & Levin, 2002, p. 2).

Before technology integration can be successful, other components must be in place. According to Forte-Barfield, these components include: access, attitudes, training, and support (2003). Best practice can not occur without these first. Access requires sufficient equipment for all students. All parties involved must approach technology with the right attitude. Teachers must have quality training in order to utilize the technologies

available to them. Administrative and technical support must be reliable and ongoing in order to foster continual use. According to the National Association of Secondary School Principals, administrators, school board members, as well as teachers must be actively involved in the process of integration (1994).

A study by Clark (2000) found that middle school teachers in Houston felt that technology was important to instruction and that they desired more technology in their classrooms. These urban middle school teachers desired technology that could be used for research and felt that it increased student interest. Another study by Scheffler and Logan (1999) that surveyed technology coordinators and teachers from Kentucky school districts also found that teachers had a desire to utilize computers for instruction. This study highlighted that "the most important competencies for teachers [were] the knowledge and skills to make computers a seamless part of the school curriculum," as well as the "growing need for teachers to learn more about how to use and manage this resource to enhance instruction" (Scheffler & Logan, 1999, ¶48).

Through No Child Left Behind, the nation seeks to improve student performance. The continuous expansion of technology in schools provides an opportunity for this improvement. Glenna and Melmed (1996) stated the following:

> Technology can play a key role in this reform. Numerous examples exist where computer- and network-based technology has been used to: tailor learning experiences more sharply to learner needs and abilities; provide students with access to resources and expertise outside the school, both enriching their learning and extending the time devoted to learning; support more authentic assessment of

student's progress; and assist schools in managing and guiding the learning activities of their student. (¶3)

Classroom technology use has often consisted of student fact gathering. But best practices begin to emerge through assignments that ask students to figure out the "why" about a subject. Web quests were identified by Forte-Barfield as an Internet way of doing this through which "teachers will begin to see real learning and active engagement" (2003, ¶5). Effective use of technology in the classroom requires that teachers ask: "Does incorporating technology provide something that is unique and is not likely to be provided by other means?" and "Does the technology add value to the curriculum?" (Iding, Crosby, & Speitel, 2002, p.154).

Past measures of computer use included Internet access and student-to-computer ratios. Some schools also tried to measure technology integration as a factor of the amount of time that students were using computers (Moore, 2001). However, this practice does not measure whether the use was meaningful use or not. Real integration requires that a teacher infuses technology, utilizing it for more than application or reinforcement. "True technology integration is sustained over time. It is based on curriculum and adds innovations to that curriculum. The results are enhanced pedagogy, authentic assessment, motivated students who push teachers to keep improving, and learning partnerships that encourage life long learning" (Forte-Barfield, 2003, ¶ 9).

"As teachers advance through the developmental stages of technology integration, they begin to realize that technology is more than a teaching tool and then they start using technology to create learning environments that augment student learning" (Mills and Tincher, 2003, p. 397). This translated into increased student achievement and the

primary goal of No Child Left Behind. This goal requires that teachers no longer be evaluated by whether or not they use technology, but teacher evaluation must now focus on how technology was being used and for what purpose (Bebell, Russell, & O'Dwyer, 2004). A model by Mills and Tincher suggested that as best practices were established for technology use in instruction and learning, teachers would develop these skills and meet these expectations (2003). "Through the establishment of a well-defined set of pedagogical standards and indicators, higher levels of technology integration in classrooms can be identified and achieved" (Mills & Tincher, 2003, p. 398). These standards need to not only be considered in teacher evaluation and teacher training, but also in the training of pre-service teachers.

## Teacher Education Programs

Many studies and reports cited lack of training in pre-service teacher education programs as a hindrance to technology integration in schools. This suggests that teachers were graduating and being certified to teach without adequate tools to utilize technology for instruction. One study found that the only technology skills gained during their training included keyboarding and word processing (Kemp, 2000) and another cited Internet searching and e-mail abilities (Anderson, 2002) as being the only preparation.

An early report by Glenna and Melmed found that very few programs that prepare teachers to enter the teaching profession dealt adequately with technology integration into the classroom (1996). They stated that "there is a strong consensus among the experts we consulted that neither the initial preparation of teachers nor the current strategies for continued professional development have been effective in developing these [technology]

skills" (Glenna & Melmed, 1996, Ch. 5 ¶16). The Milken Exchange on Education Technology and the International Society for Technology in Education found that future teachers do not effectively use technology in their classrooms because appropriate experiences were not available through teacher education programs (cited in Russell, Bebell, O'Dwyer, & O'Connor, 2003).

Some evidence does exist that suggested that not all teacher education programs were ignoring technology classroom applications. The Pennsylvania Department of Education's Office of Education Technology and Office of Postsecondary and Higher Education were working together to meet this need. They worked to develop a program that would provide teachers-in-training the education they need to effectively utilize technology in instruction (Golden, 2004). The development of technology competencies at the University of Northern Iowa, based on national standards also indicated the move toward educating future teachers to be able to utilize technology in the classroom (Krueger, Hansen, & Smaldino, 2000).

Further evidence was found with the National Council for Accreditation of Teacher Education (NCATE). NCATE is responsible for the accreditation of colleges and universities that have teacher education programs. There are ten indicators that they address that are technology related. Of these ten, five relate to instruction. These indicators as cited in Scheffler and Logan (1999) included:

1. Courses and experiences include uses of technology for the content they plan to teach.

2. Courses included the impact of technological and societal changes on schools.

3. Courses develop understanding and use of verbal, nonverbal, and media communications for fostering inquiry, collaboration, and supportive interactions.

4. Courses, experiences, or both develop understanding and use of educational technology, including the use of computer and other technologies in instruction, assessment, and professional productivity.

5. Assessment of a candidate's progress is based on multiple data sources that include the use of various instructional strategies and technologies (¶23).

Walters proposed a four step method of technology integration into teacher education programs (cited in Dusick, 1998). The four steps consisted of awareness (identifying computer uses), adaptation (applying learning theories and hands-on experience in learning practices), analysis (analyzes techniques and materials to enhance skills), and application (reviewing of management, record-keeping and assessment).

Some districts have used a pre-employment screening process in order to evaluate new teachers' technology skills (Moore, 2001). While this screening process was not necessarily used to determine employment, it was used as a gage for developing future professional development.

Prior training was not the only factor that influences teachers' decisions to use or not use technology for preparation, information management, or instruction in their classroom. Other factors contributed.

## Use Versus Non-use

A survey of principals in 2003 revealed that teachers in 22 Massachusetts school districts were less likely to use technology in the classroom during the first few years of

their careers simply because they had not been exposed to classroom technology applications (Russell, Bebell, O'Dwyer and O'Connor). Despite this, the same study found when surveying teachers, that new teachers reported higher confidence using computers than experienced teachers. New teachers also expressed concerns about computers having negative effects on student learning.

In designing their study, Dynarski, Honey and Levin (2002) examined various technologies and how they could best be used to support student learning. They characterized technologies into application types which included: games used for drill and practice such as Reader Rabbit; tools used for productivity such as Microsoft Word, Excel, and PowerPoint; information resources including CD ROMs and the Internet; cognitive tutors such as IBM's Watch Me Read early literacy program; simulation or problem solving programs such as Oregon Trail; tools for communication including e-mail and on-line discussions; and multimedia creation programs such as Kid Pix and HyperStudio. These application types applied to classroom uses of technology by students.

As technology has advanced and developed over time, the definition of technology use has also changed. The Russell, Bebell, O'Dwyer, and O'Connor (2003) study provided a functional definition of teacher technology use. They used categories including:

- Teacher use of technology for preparation
- Teacher use of technology for delivery
- Teacher-directed student use of technology
- Teacher use of technology for special education and accommodation

- Teacher use of e-mail
- Teacher use of technology for recording grades

As noted above, student use of technology in the classroom was just one way that a teacher used technology. The authors maintained that teacher use of technology needed to be analyzed in each of these areas as teachers choose to utilize technology in some of these areas and not in others.

As technology has made its way into classrooms across this country, some teachers have embraced it and others have not. Many faculty members have been reluctant to use computers or alter their teaching methods and strategies. Some factors that have been found to contribute to this reluctance to change were time commitment, personal risk, self-efficacy, computer competency, beliefs, attitude and anxiety, knowledge and perceived relevance (Dusick, 1998). Another difficulty that was found to inhibit teacher use of technology was lack of time and resources (Iding, Crosby and Speitel, 2002). Budgetary and time constraints were also cited as stumbling blocks for implementation of educational technology in classrooms.

At this point in time, technology has now been infused into many districts' curricula. Teachers are expected to utilize the technology made available to them. Despite this, in some cases teachers still have the choice to use or to not use technology on a daily basis. A study by Dusick (1998) found that the following factors influenced a faculty member's decision to use or not use technology: "(1) a supportive administration, (2) availability of computers in the classroom, (3) support and sharing of resources, (4) a strong support staff, and (5) training" (¶41). Another study found that faculty members who did not use technology had concerns about the benefits of computer use in the

classroom, as well as the training and assistance that their districts would provide (Dusick and Yildirim, 2000). This study also noted the importance of awareness. Some faculty members expressed that they never realized the potential uses of technology applications in their classrooms. Factors cited in this study that contributed to positive attitudes toward technology use included: conferences, workshops, availability of equipment and having friends who had computer knowledge. Also noted in this study by one participant was that they enjoyed using presentation software because it makes the information more interesting to their students.

Some studies focused on teachers' years in education as a possible influence on their use or non-use of technology. A study by Bebell, Russel and O'Dwyer (2004) looked at various uses of technology by teachers, grouping them in categories ranging from less than one year in the classroom to more than fifteen years teaching. The following uses of technology were fairly consistent throughout the number of years teaching: professional e-mail, generic use, student products and accommodation. With increased years of service, there was a slight increase in student use of technology and in delivering instruction. Less years teaching showed slightly increased use of technology for grading and a more substantial use of technology for preparation.

"If you investigate why technology is working in a particular school district, you will usually find that the way the principals, superintendent, or other school administrators are functioning has a lot to do with the success" (Bosco, 2001, ¶2). According to some studies, administrative support was key. Faculty members must not only know what was expected of them, they must also know that they had administrative and financial support in order to implement educational technology. There must be

financial support for equipment upkeep and technology staff. The cost of educational technology needs to be built into a district's budget as a perennial expense (Glenna & Melmed, 1996). In order to establish and maintain effective use of educational technology, equipment must be maintained and updated, faculty competencies evaluated and appropriate training provided.

## Assessing Competencies and Use

In order to determine whether or not technology is being used effectively, it is important to assess teacher skills. "An assessment provides a measure of the return on investment made in hardware, software, and training, as well as a way to plan for program improvement and to distribute information to administrations, school boards, and the community" (Anderson, 2000, ¶2). In determining the appropriate type of assessment, Anderson maintained it was important to consider what the information would be used for. Assessments can be either formal or informal. Examples of formal assessment may included surveys, interviews, focus groups, personal growth plans, portfolios and formal teacher evaluations. Informal assessments could be either conversations or anecdotal observations (Anderson, 2000).

Researchers maintained if a district wishes to evaluate the effectiveness of technology integration, it is important for them to first have a clear understanding of how technology is being used by teachers and students (Bebell, Russell, and O'Dwyer, 2004).

> A district interested in documenting the extent to which teachers are using technology or the extent to which teachers' use of technology changes in response to the acquisition of more resources or the provision of professional development

> are likely to develop a richer understanding by collecting information about the specific types of teachers' technology use rather than simply measuring its generic presence or absence (Bebell, Russell & O'Dwyer, 2004, ¶37).

The categories of teacher technology use described previously would need to be studied and analyzed individually in order to accomplish this.

The Blue Valley school district wished to regularly assess classroom use of technology in order to understand current practice and identify areas in need of improvement (Moore, 2001). They developed a rubric of 43 competencies within the following four areas: classroom management, communications, curriculum and instruction, and professional development. The teachers used this rubric to self-evaluate their skills and areas of growth.

Another project sought to develop a model for technology integration (Mills & Tincher, 2003). In order to measure their success, they developed a process to evaluate technology integration practices throughout the process. The "Technology Integration Standards Configuration Matrix" was based upon the developmental stages, standards and indicators of their technology professional development model.

Most studies of teacher technology use relied on teacher self-assessment. One such study utilized a 25 item questionnaire to survey 78 preservice and practicing teachers (Iding, Crosby & Speitel, 2002). The teachers surveyed were taking special education or science education courses at a university in the Western United States. The survey addressed the following areas: computer proficiency, instructional uses of technology, beliefs about computer use for instruction, and computer resources and support at their school. This study found that an overwhelming number of teachers have

computers at home (97 percent) and most have Internet access (82 percent). In rating themselves in computer experience, no one indicated "poor," while 18 percent indicated "fair," 65 percent indicated "average," and 12 percent indicated "high." E-mail was found to be the activity that teachers spend the most time utilizing technology. A large number of respondents indicated never using technology for many activities, including: tutorials, remediation, enrichment for advanced students, tracking student progress, student reward, demonstrations, and student portfolios. The researchers did state that this may be due to the fact that their sample included some preservice teachers who may not be authorized to implement these uses.

Teacher self-assessment studies can have the inherent problem of relying on the subjects' honesty, as well as the possibility that they may not be aware of what they do not know. This may have been a problem in a study of a Houston middle school teachers' use of technology in the classroom. In this study, Clark (2000) found that:

- Most teachers in this survey felt confident in their ability to use technology,
- These teachers expressed opposing attitudes when it comes to the need for more training in technology,
- Teachers feel that technology is an integral part of their classrooms,
- Teachers feel that classrooms need more technology (¶35).

These results suggested an overconfidence resulting from not knowing what they do not know.

Unlike the study just discussed, some studies were used in order to determine professional development that would be beneficial and appropriate. A school district in Kansas developed technology integration indicators (Kocher & Moore, 2001). They used

these indicators in a survey with which teachers rated themselves on "where I am now" and "where I would like to be." The data provided by this survey was used to plan individual and group professional development.

## Professional Development

As professionals, teachers engage in professional development to strengthen skills and develop new practices. Professional development involving technology requires that teachers buy into the idea that it is worth the time and effort (Barnett, 2003).

> The first step of any sound professional development program is to develop a belief about technology professional development that includes the idea that the curriculum drives the use of technology, not vice-versa, and that empowered teachers will find appropriate ways to include technology with their ongoing instruction rather than view it as an activity unconnected to the district's content standards (Barnett, 2003, ¶2).

Bosco maintained that, school districts must realize that simply investing in technology is not enough. They must employ a system for ongoing professional development because "even the best hardware and applications are of little value if teachers are ill-prepared to make use of them" (2001, ¶6).

Educators acquired their computer knowledge from various sources, including college courses, staff workshops and colleagues sharing information. One study of the faculty members of an urban California community college reported minimal amounts of formal training. Respondents said that between 50 and 100 percent of their computer abilities were self-taught (Dusick &Yildirim, 2000).

Golden stated that it was essential to focus on teacher training for effective implementation of technology into the classroom (2004). Teachers were the critical element in this transition. Those who made quality instruction a primary focus were willing to use technology as a tool to achieve it. "Therefore, we must establish programs for ongoing professional development on the applicability and benefits of technology, while sharing and supporting our successes" (Golden, 2004, ¶6). An article by Barnett described strategies for successful technology professional development and suggested the following systems:

- After school – widely used, least effective, best to raise awareness and introduce concepts;
- Technology Rover Shops – just in time training, an hour of individual coaching on teacher specified need, requires a floating substitute;
- Mini grants – a $300 to $500 grant for a teacher to learn a new application or develop technology-enhanced instruction, requires that they train other teachers;
- Summer Institutes – multi-day training, most effective system for incorporating technology with instruction, teachers can focus better; and
- Distance learning – anytime and anywhere, at teachers convenience, profit and not-profit providers available (2003).

School districts must determine the needs of their teachers in order to develop a system of professional development that will be successful for them.

As discussed earlier, the Blue Valley school district developed a rubric that allowed them to collect information and provide direction for their technology professional development system. "Staff development offerings have been tailored to

meet the needs and interests of teachers and to promote effective instructional practices" (Moore, 2001, ¶11). Several studies suggested the importance of taking competence and anxiety level into consideration when determining the types of professional development to offer (Dusick &Yildirim, 2000; Dusick, 1998). Findings showed that less experienced technology users preferred one-on-one training and short sessions that showed them the benefits of using technology in the classroom. They also wanted to know that follow-up support was available. More experienced technology users preferred more specific training that focused on improvement of skills (Dusick & Yildirim, 2000).

Teacher experiences vary greatly. This was found to be just one of many factors that influence teacher technology training needs. Some studies tried to determine what some of these needs were. One study identified changing teachers' beliefs about technology as an essential factor prior to trying to change their use of technology (Russell, Bebell, O'Dwyer & O'Connor, 2003). Some studies cited a need for training on specific types of uses, as well as subject specific technology uses (Russell, Bebell, O'Dwyer & O'Connor, 2003; Clark, 2000). In a study researching instructional needs, faculty responses showed a desire for training in the following areas: software, Internet applications (including web page design), lesson planning and instructional applications (Iding, Crosby & Speitel, 2002).

While there are many variables to consider in providing professional development, the fact still remains that teachers must have the hardware and software resources available to them, administrative support, as well as a technology support staff. School library media specialists can play a role in bridging this gap.

## Role of the Library Media Specialist

An article in *School Library Journal* stated that "a media specialist may be the perfect person to teach staff-development classes and facilitate peer support groups" (Anderson, 2002). This statement was well supported by the American Association of School Librarians (AASL). The AASL collection of information literacy standards gives this directive: "The school library media specialist takes a proactive role in promoting the use of technology by staff, in determining staff development needs, in facilitating staff learning explorations, and by serving as a leader in staff development activities" (American Library Association, 1998, p. 52-3).

The technology professional development plan of one study called for cross-curricular collaboration and the use of technology "coaches" (Grimes & Smith, 2004). The developers of this professional development plan did not consider a source that could have been of great benefit to them. "Librarians are the only teachers who work in all areas of the curriculum [and] with all of the students and staff" (Anderson, 2002, ¶6). The library media specialist would have been an excellent choice for overseeing this plan.

A study in Australia looked at how students and faculty view the library media center and the library media specialist. Faculty indicated that the most important role of the library media specialists was to help students and staff be comfortable and confident in their ability to locate the information that they need (Waters, 1994). As most information retrieval today requires use of technology, it is easy to see why the library media specialist should provide technology professional development.

Library media specialists have much expertise from which administrators can gain support and information (Hofstetter, 1999). Bosco states that library media specialists

can be a valuable asset to the administration and the school (2001). Library media specialists, as well as technology coordinators can assist administrators in the following ways: help them be aware of standards, be involved in technology planning committees, identify and implement appropriate staff development, be proactive in suggesting ways of utilizing technology, and be a filter in order to pass along useful information (Bosco, 2001).

## Summary

In a relatively short period of time, technology has expanded into all areas of life. It has become increasingly difficult to avoid it. This is evident in education today. Computers have made their way into most classrooms across our country. Students and faculty are expected to utilize them. Many school districts have invested enormous amounts of money into available technologies and are now looking for a return on this investment. The returns that they are looking for are integration of use, improved instruction and increased student learning. It is also important for students to utilize these technologies to be prepared to enter the workforce of a global economy.

As technology has advanced, the definition of a technology-using teacher has changed. Over time, evaluating teacher use of technology has been difficult as the definition of this use has evolved. Studies have now categorized teacher use of technology (Russell, Bebell, O'Dwyer & O'Connor, 2003) and have indicated the importance of analyzing these categories separately (Bebell, Russell & O'Dwyer, 2004).

Some studies have expressed concern that teachers were coming into the profession unprepared to use technology in the classroom. Teacher education programs

were not adequately addressing educational technology. Whether an ill-prepared preservice teacher or an experienced teacher with limited technology skills, school districts need to address technology professional development. Many programs and methods have been explored, but there is no one-size-fits-all solution. School districts need to assess faculty competencies and tailor fit professional development offerings. This may vary by grade level, subject area and comfort level of the teachers to be trained.

Training is just one factor in a teacher's decision whether to use or not use technology. Another important factor identified was their support system. Not only do the hardware and software resources need to be available to them, they must also have administrative support and a technology support staff. The district and the administration must make a financial commitment for ongoing technology integration. School library media specialists can play a vital role as part of the support system.

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# CHAPTER III

# RESEARCH METHODOLOGY

## Design

This study of faculty computer based technology use at Vineland High School South follows a descriptive survey design. This descriptive study was intended to depict faculty uses and abilities at this school in order to provide data that would be useful in planning future professional development. This method of study was chosen because the "basic purposes of descriptive surveys usually are to describe characteristics of the population being studied, estimate proportions in the population, make specific predictions, and test associational relationships" (Powell, 1997, p. 61). This design aligned well to meet the goals of this study.

## Purpose of Study

The primary goal of this study was to evaluate teacher use of computer based technology for personal use and for professional use at Vineland High School South. This study also sought to identify factors that contribute to faculty use or non-use of computer based technology in the classroom. As a library media specialist, the researcher hoped to utilize the results to design and implement future professional development. The following research questions were considered:

- How do high school faculty members utilize computer based technology for personal use?
- How do high school faculty members utilize computer based technology for professional use?
- What factors influence high school faculty members' professional use or non-use of computer based technology?

## Population and Sample

For this study, the population and sample were the same. The population studied was the classroom teaching staff at Vineland High School South. The sample and population were the same because all members of the classroom teaching staff were included in the survey. A total of 119 faculty members were asked to participate.

## Survey Variables

Participants were asked whether or not they owned a home computer, as well as how often they utilized this home computer. The types of uses or applications on participant's home computers were also considered. Participants were questioned as to the places they used computers and which of these locations they used most frequently.

Professional computer uses considered in this survey included six areas: computer use for lesson preparation, computer use for instruction or delivery of information, teacher-directed student use of computers, special education and accommodation, e-mail communications, and recording of grades. Faculty members were asked to indicate frequency of use in each of these areas.

Other variables considered in this survey included: programs that respondents were comfortable using, factors that increased respondents professional use of computer based technology, factors that inhibited professional use of computer based technology, previous computer technology training, department serving in, and years in education.

## Data Collection Method

The data were collected for this study utilizing a survey questionnaire. A survey questionnaire was chosen as the best method to collect necessary data because it provided many advantages. The benefits of this method included (Powell, 1997):

- Encourages honest answers
- Measures attitudes
- Eliminates interviewer bias
- Participants complete at their leisure
- Quantitative data can be easily collected and analyzed
- Much data can be collected quickly

The questionnaire was designed by the researcher in alignment with the research questions in order to obtain data relevant to this study.

## Collection Technique and Analysis

The questionnaire utilized in this study (see Appendix A) was pre-tested by colleagues, as well as potential users of the information. The questionnaire, along with cover letter (see Appendix B), was distributed into faculty members' mailboxes. The confidentiality of each participant was ensured through a request to return all

questionnaires in unmarked sealed envelopes (provided) to the researcher's mailbox. Data were analyzed with simple descriptive statistics. Quantities and percentages of the variables were determined.

## Reliability and Validity

The questionnaire in this study was pre-tested. Those who pre-tested this questionnaire included professionals in this field and those who could utilize information gathered by this study. This was done in order to increase the reliability of the responses gained. Several changes were made as a result of this pre-test. "Choose one" was added to the question of where teachers most frequently use a computer. Department that one teaches in was moved to be with years in education. The question that regarded factors that influence professional use of computer based technology was reworded to be less confusing. The question that regarded development of computer knowledge was reworded. "In-house" became "district or school provided" and "seminars" became "privately sponsored seminars/workshops." A thank-you and a return by date were added.

The results of this study have internal stability in that data were collected over a short period of time. The homogeneous nature of this population also contributed to the internal stability. The data were handled by one researcher and were carefully analyzed and accurately reported.

Externally, the research design of this study had stability. The design could be repeated in another location. However, the results may not necessarily be similar.

Conclusions can be considered to be true for Vineland High School South faculty only. The results of this study have validity for the sample that was studied.

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# CHAPTER IV

## ANALYSIS OF DATA

Questionnaires were distributed into teachers' main office mailboxes. The attached cover letter requested that completed questionnaires be returned to the researcher's main office mailbox in the envelope provided within a week's time. Of the 119 questionnaires distributed to teachers, 78 were returned for a 66 percent response rate.

This survey considered a number of variables in relation to computer use. Ownership of a home computer, as well as frequency of use and applications of home computer use was questioned. Participants were asked where they used computers and at what location they used a computer most frequently. Professional computer uses considered in this survey included: computer use for class preparation, computer use for instruction or delivery of information, teacher-directed student use of computers, special education accommodation, e-mail communications, and recording of grades. Frequency of use in each of these areas was also measured. Other variables considered in this survey included: programs that respondents were comfortable using, factors that increased respondents professional use of computer based technology, factors that inhibited professional use of computer based technology, previous computer technology training, department serving in and years in education.

Data collected was tallied manually and statistical analysis consisted of counts and percentages. These descriptive statistics were then entered into Microsoft Excel in order to create the tables and figures included in this report.

## Results

Ninety-two percent (72 out of 78) of responding teachers indicated ownership of a home computer. Daily use of their home computer was indicated by 64 percent of respondents. Twenty-four percent utilized their home computer weekly, four percent monthly and eight percent indicated never. This eight percent was the same eight percent who did not own a home computer. The two most frequently indicated uses of the home computer included Internet searches for personal interests at 87.2 percent and personal e-mail at 85.9 percent. These were followed closely by school/professional work which was indicated by 82.1 percent of respondents. Additional uses included shopping, banking, games and tax preparation. A substantial number of respondents indicated "other" uses that included music and video, therefore this became another category of use. Additional "other" responses included home business and news (see Fig. 1).

Daily use of computers at school was indicated by 96.1 percent of responding teachers. Only 2.6 percent indicated weekly and 1.3 percent never. Six professional uses of computers were considered. Teachers were asked to indicate their frequency of use in each of the six areas. Sixty-seven percent of respondents used computers for class preparation either daily or weekly. The remaining third of respondents were fairly equally distributed between monthly, less than monthly and never (see Fig. 2). Half of respondents used computers daily or weekly for presentation/delivery of information

**Figure 1 -- Uses of Home Computers by Teachers (n=78)**

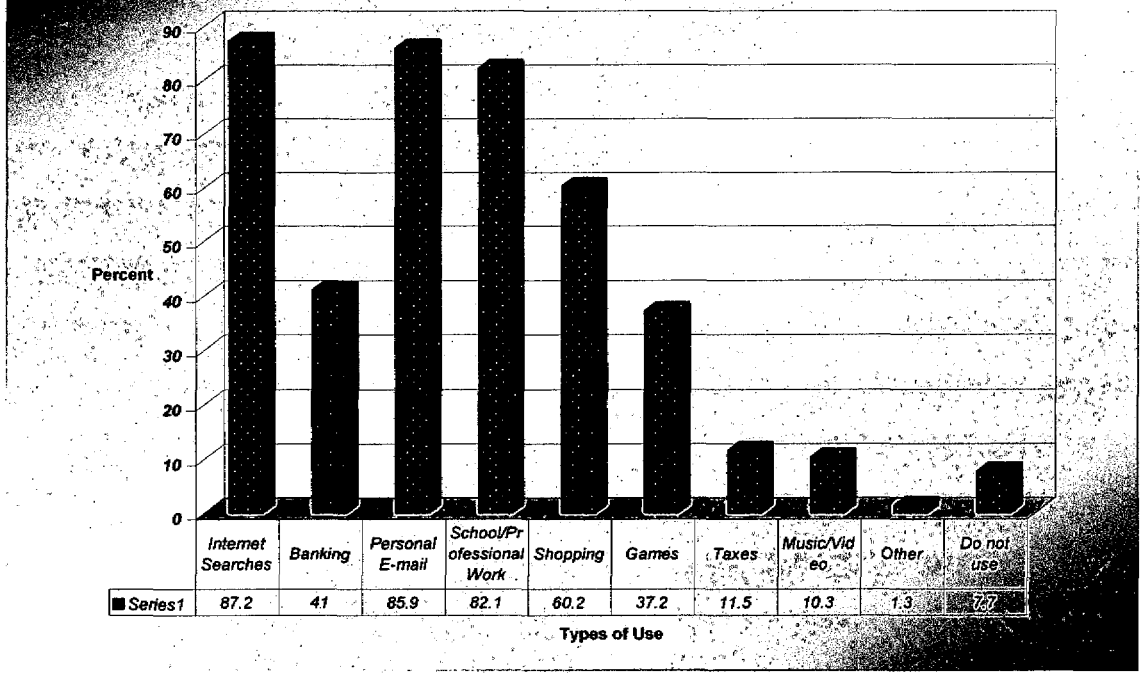
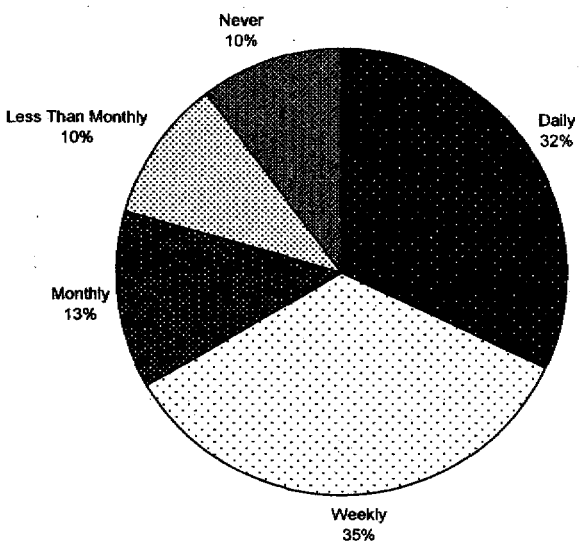



**Figure 2 -- Frequency of Teacher Computer Use for Class Preparation (n=78)**



Twenty-one percent indicated less than monthly, 12 percent monthly and 17 percent never (see Fig. 3). Twenty-two percent of teachers indicated that they never used computers for student assignments during class time. Thirteen percent used computers daily for class assignments, 26 percent weekly, 22 percent monthly and 17 percent less than monthly (see Fig. 4). Sixty percent of teachers responding never used computer based technology for special education accommodation. Eight percent used it daily, 12 percent weekly, six percent monthly and 14 percent less than monthly (see Fig. 5). Eighty four percent of teachers reported using their professional e-mail on a daily basis. Nine percent indicated weekly use, six percent monthly and one percent never (see Fig. 6). Over half (52 percent) of responding teachers reported daily or weekly use of computers for recording grades. Three percent indicated monthly use, four percent indicated less than monthly use and 41 percent said that they never used computers for recording grades (see Fig. 7).

Six possible influences on teacher professional use of computers were questioned. Respondents indicated if each of these influences increased their professional use of computers, decreased it or had no influence on their use. Sixty-seven percent of responding teachers felt that availability of computers increased their professional use of computer based technology. Twenty-seven percent felt that it decreased their use and six percent indicated no influence (see Fig. 8). Reliability of computers had increased usage for 45 percent of respondents, decreased use for 41 percent and had no influence for 14 percent (see Fig. 9). Fifty-eight percent indicated that a friendly and efficient technical staff had increased their professional use of computers. Nineteen percent found the opposite to be true and 23 percent were not influenced (see Fig. 10). The support of

**Figure 3 – Frequency of Teacher Computer Use for Presentation/Delivery of Information (n=78)**

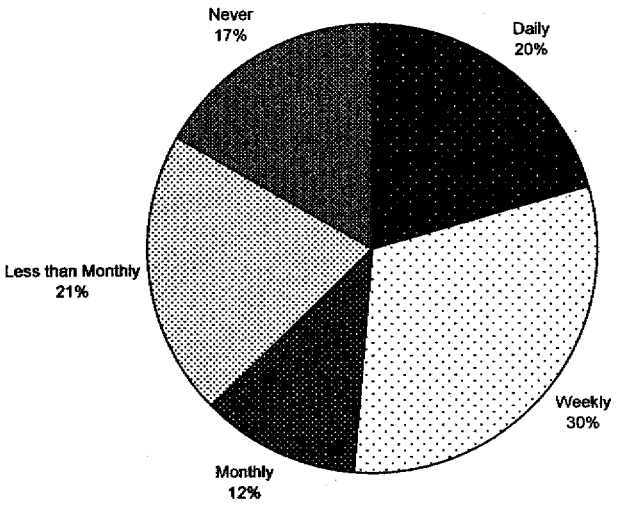



**Figure 4 – Frequency of Teacher Computer Use for Student Assignments During Class Time (n=78)**

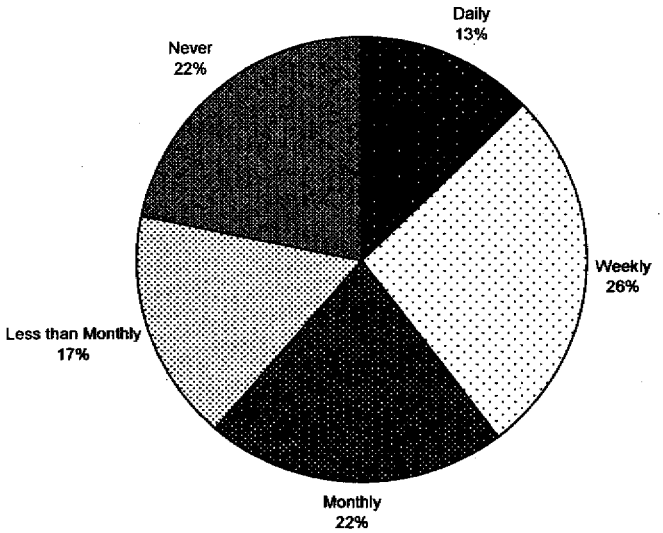


**Figure 5 -- Frequency of Teacher Computer Use for Special Education Accomodation (n=78)**

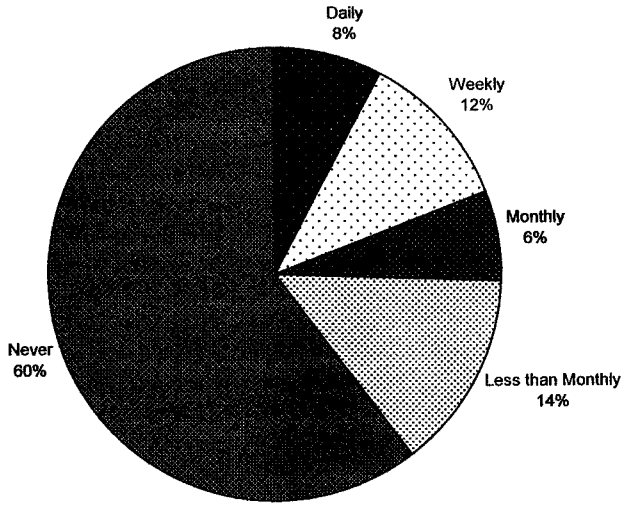



**Figure 6 -- Frequency of Teacher Computer Use for Professional E-Mail (n=78)**

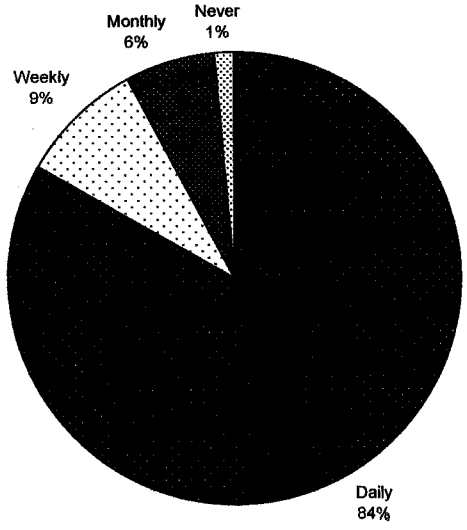


**Figure 7 – Frequency of Teacher Computer Use for Recording Grades (n=78)**

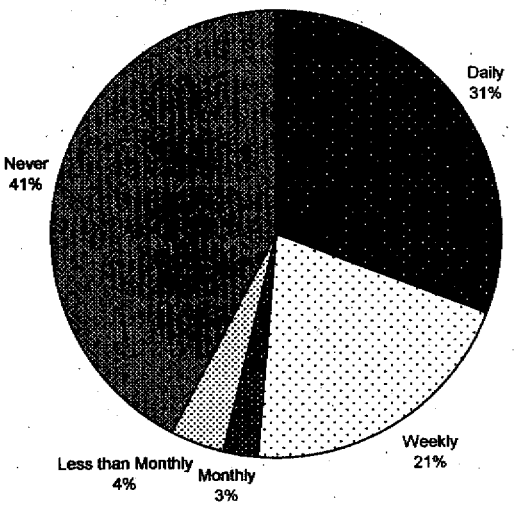



**Figure 8 – Influence of Availability of Computers on Teacher Professional Computer Use (n=78)**

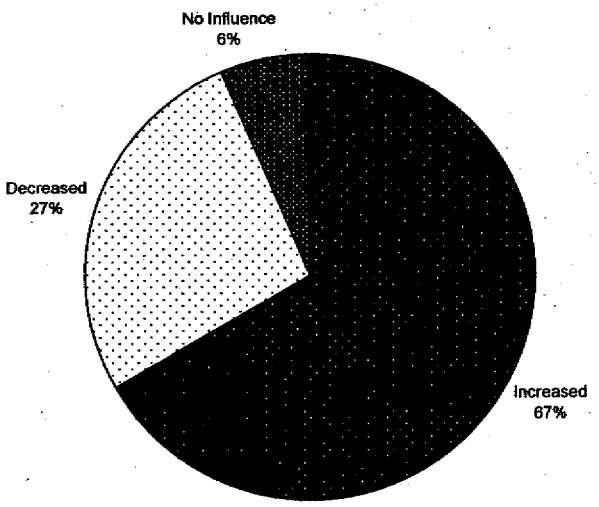


**Figure 9 -- Influence of Reliability of Computers on Teacher Professional Computer Use (n=78)**

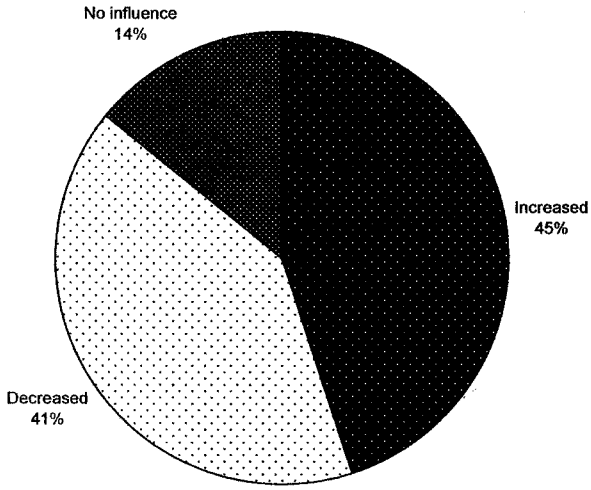
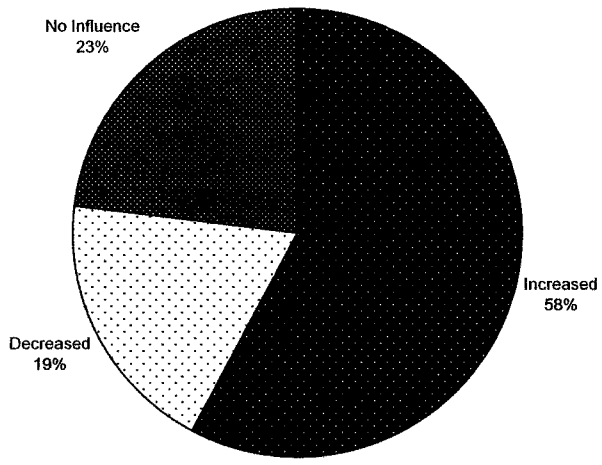



**Figure 10 -- Influence of Computer Technician Staff on Teacher Professional Computer Use (n=78)**



administration increased use for 59 percent of respondents, decreased use for six percent and had no influence on 35 percent (see Fig. 11). Being required to use computers professionally increased computer use for 47 percent of respondents, decreased use for 17 percent and had no influence for 36 percent (see Fig.12). Seventy-three percent of teachers surveyed indicated that availability of training had increased their professional use of computers. Four percent felt it decreased their use and 23 percent found it to have no influence (see Fig. 13).

Of the faculty members who responded to this survey, 91 percent indicated that some of their computer skills were self taught. Friends and colleagues have assisted 83.3 percent of respondents. Eighty-two percent gained some computer knowledge through district provided professional development. Other sources of skill development include college courses, private workshops, on-line tutorials, and assistance of the library media specialist. Respondents indicating "other" added reading and help from computer technicians (see Fig. 14). Of the various sources of computer knowledge, responding teachers were asked to indicate which provided the most valuable training. Forty-three percent of those who responded felt that their self-training was the most valuable, 27 percent indicated friends and colleagues and 14 percent found district provided professional development to be the most valuable (see Fig. 15).

Teachers participating in this study indicated all places that they use a computer. The two most frequently indicated places include classroom at 96.2 percent and home at 92.3 percent. Department office was indicated by 47.4 percent of respondents. Other places reported include faculty lounge, school library and public library. A significant number of "other" responses indicated school computer labs, so this category was added.

**Figure 11 -- Influence of Supportive Administration on Teacher Professional Computer Use (n=78)**

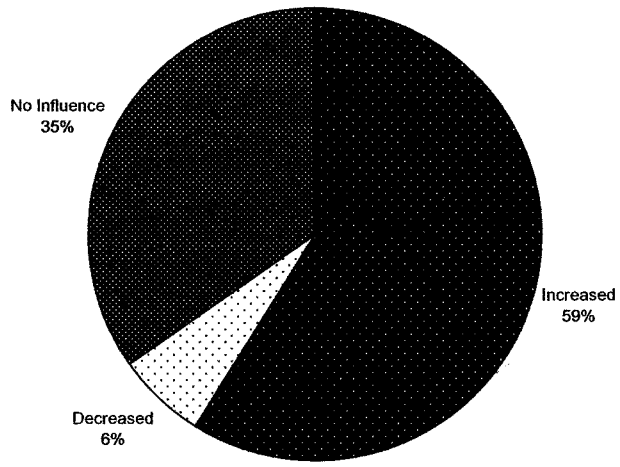



**Figure 12 -- Influence of Requirement to Use on Teacher Professional Computer Use (n=78)**

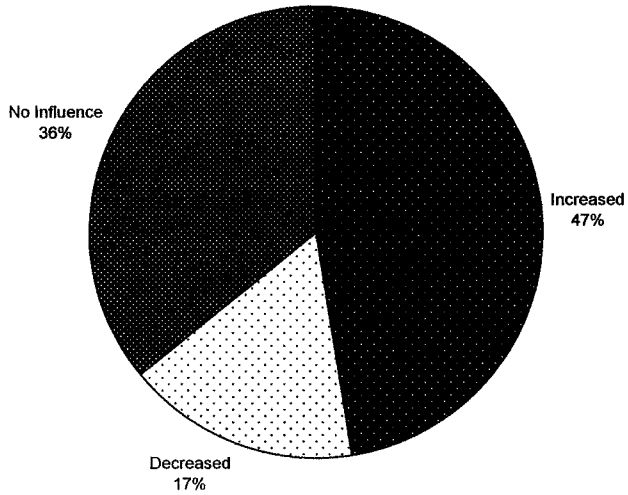


**Figure 13 -- Influence of Availability of Training on Teacher Professional Computer Use (n=78)**

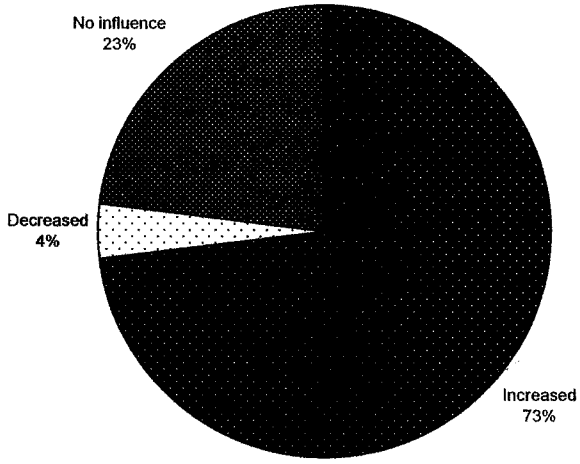



**Figure 14 -- Faculty Development of Computer Skills (n=78)**

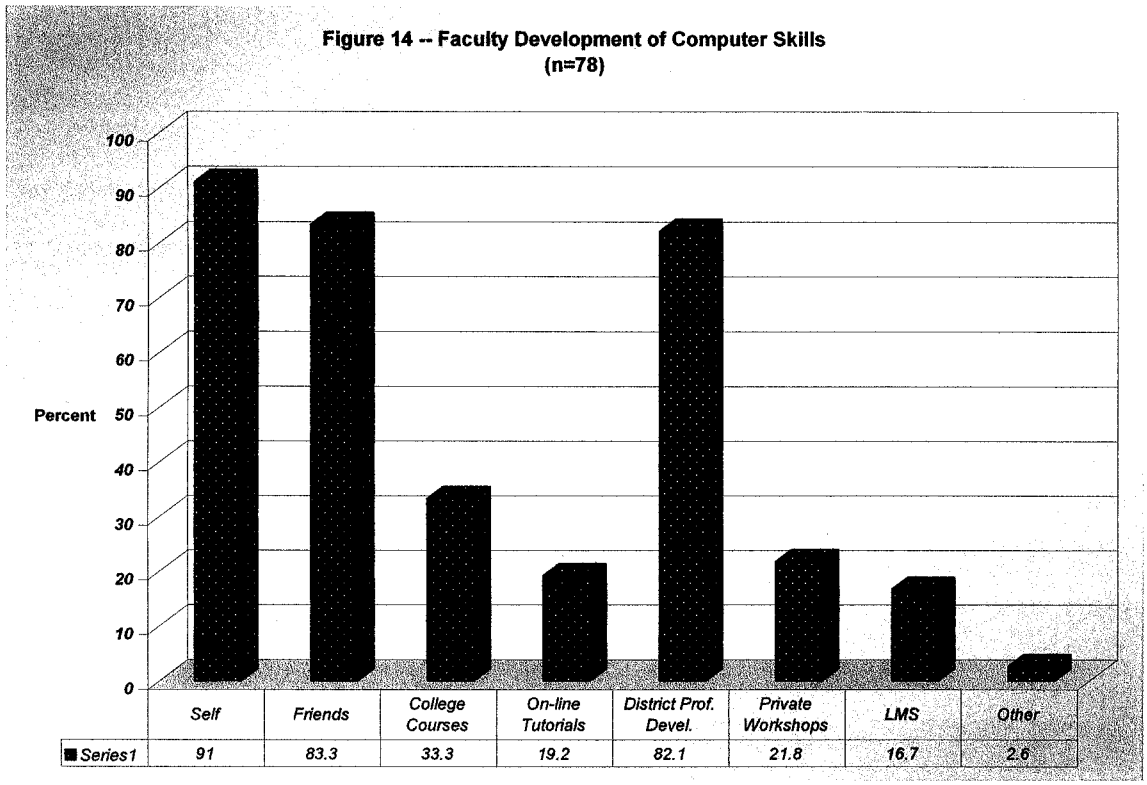
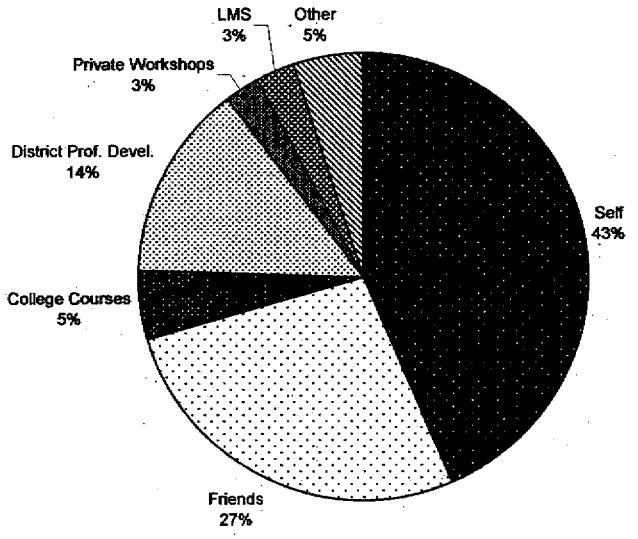


**Figure 15 – Computer Training that Faculty Found Most Valuable (n=78)**

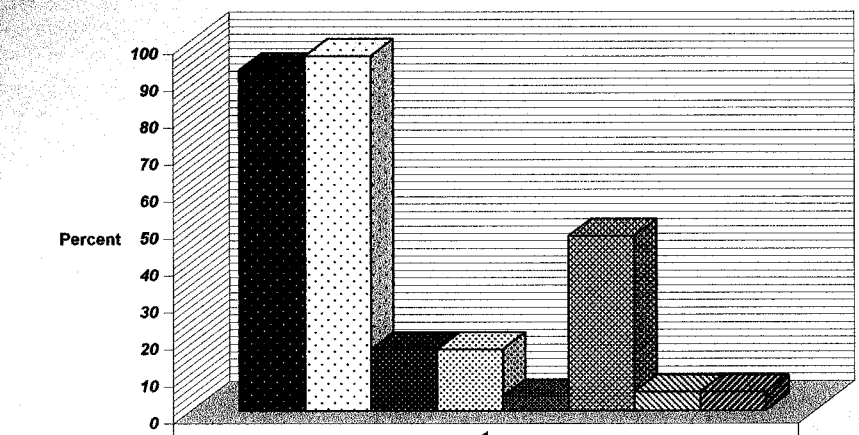



l "other" responses included college, church, business and friend's house (see _ _ _ _. Of these locations, the most frequently used location was the classroom as indicated by a 51 percent respc_se rate; home was second at 40 percent, department office eight percent and faculty lounge one percent (see Fig. 17).

Respondents were asked to indicate which programs they felt comfortable using. Table 1 shows various software programs and summarizes the number of respondents who expressed comfort using each of these programs. Programs that were added due to a large number of "other" responses include Grade Quick and multi-media manipulation programs.

For this sample 35 percent of teachers responding had been in education for 20 or more years. Seventeen percent had been teaching for 11 to 19 years, 22 percent for 6 to 10 years, 21 percent for 2 to 5 years and five percent for one year or less (see Fig. 18).

**Figure 16 – Where Teachers Reported Using Computers (n=78)**




| | 1 |
|---|---|
| Home | 92.3 |
| Classroom | 96.2 |
| Faculty Lounge | 16.7 |
| School Library | 16.7 |
| Public Library | 3.8 |
| Department Office | 47.4 |
| School Lab | 5.1 |
| Other | 5.1 |

**Figure 17 -- Where Faculty Most Frequently Use a Computer (n=78)**

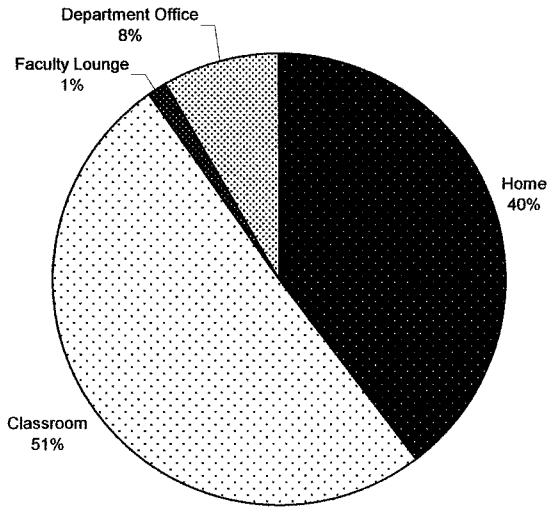
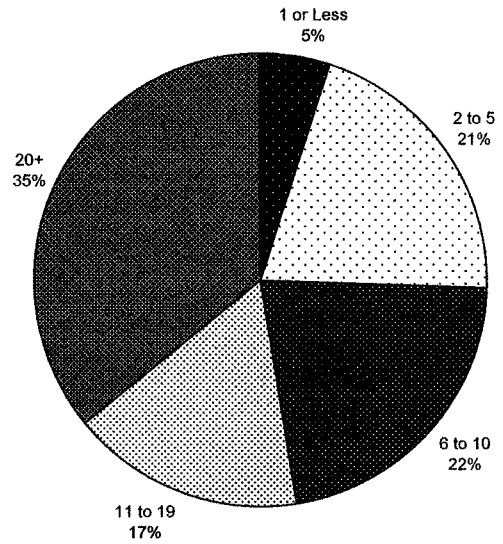


Table 1 (n=78)
Programs Comfortable Using

| | # of Responses | Percent of Respondents |
|---|---|---|
| Microsoft Word/Works | 76 | 97.4 |
| Microsoft Excel | 35 | 44.9 |
| Microsoft Power Point | 46 | 59 |
| Microsoft Publisher | 39 | 50 |
| Adobe Photoshop | 24 | 30.8 |
| Hyperstudio | 2 | 2.6 |
| Access | 13 | 16.7 |
| Quicken | 4 | 5.1 |
| Turbobax | 4 | 5.1 |
| Grade Quick | 5 | 6.4 |
| Multi-Media Manipulation Programs | 8 | 10.3 |
| Other Programs | 4 | 5.1 |

**Figure 18 -- Percent of Responses by Years Experience in Education (n=78)**




Most academic departments participating were fairly well represented. Special Education, Science and Social Studies had the most respondents. Physical Education had

the least number of respondents (see Fig. 19). Given the actual number of teachers in each department, the percentage of each department that responded is represented by Figure 20. The highest percentage of returns include Social Studies with 91 percent, Fine Art and World Language with 86 percent, and Science and Business with 83 percent. On the low end, English had a 47 percent participation rate and Physical Education had a 33 percent participation rate.

Each of the professional uses of computer based technology was considered in regard to the respondents' number of years in education. The percentage of responding teachers that indicated daily or weekly use in each of the categories of professional use was broken out by years in education (see Table 2). These same categories of professional use were also analyzed in regard to the department that each respondent taught in. Table 3 shows the percent of those who indicated daily or weekly use of computer based technology for each of the professional uses by department.

**Figure 19 -- Percent of Responding Sample by Department (n=78)**

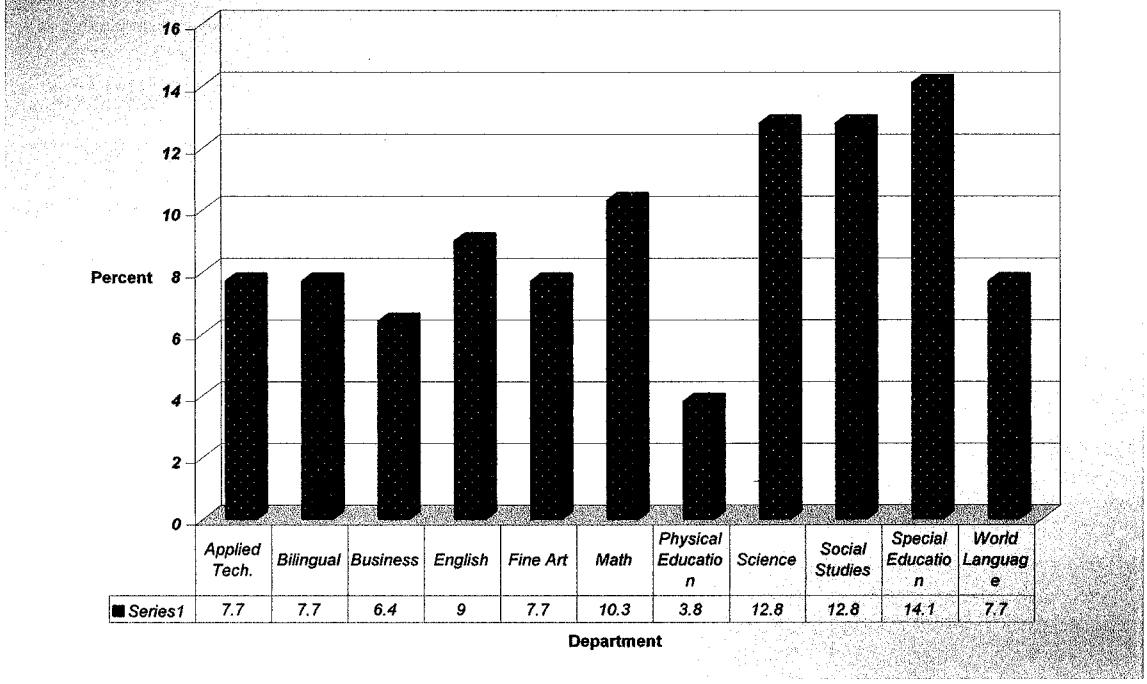



**Figure 20 -- Percent of Each Department that Responded (n=78)**

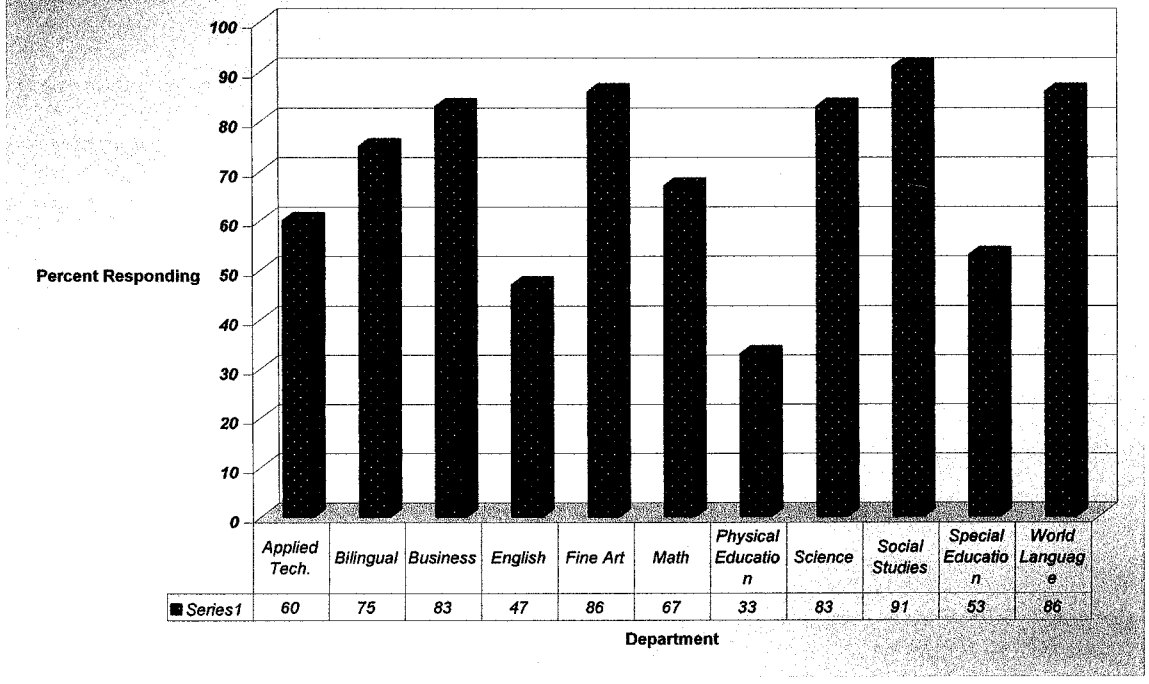


Table 2
Professional Computer Uses by Years of Service
Percent of Daily/Weekly Responses (n=78)

| | 1 or less years | 2-5 years | 6-10 years | 11-19 years | 20+ years |
|---|---|---|---|---|---|
| Preparation | 50 | 87.4 | 70.6 | 69.2 | 49.9 |
| Presentation | 25 | 68.7 | 58.8 | 46.1 | 42.8 |
| Student Assignment | 50 | 31.3 | 41.2 | 46.1 | 39.3 |
| Special Ed. Accom. | 75 | 12.5 | 23.5 | 15.4 | 14.2 |
| E-mail | 100 | 93.7 | 94.1 | 92.3 | 89.3 |
| Grades | 75 | 56.2 | 76.5 | 46.2 | 32.2 |

Table 3
Professional Computer Uses by Department
Percent of Daily/Weekly Responses
(n=78)

| | Preparation | Presentation | Student. Assign. | Spec. Ed. Accom. | E-mail | Grades |
|---|---|---|---|---|---|---|
| English | 100 | 47.6 | 28.6 | 14.3 | 88.4 | 33.3 |
| Fine Art | 16.7 | 0 | 33.4 | 33.3 | 83.3 | 16.7 |
| Special Ed. | 36.4 | 36.3 | 36.3 | 45.5 | 90.9 | 36.4 |
| Language | 83.3 | 50 | 33.3 | 16.7 | 83.3 | 66.7 |
| Math | 62.5 | 50 | 12.5 | 12.5 | 87.5 | 75 |
| Soc. Stud. | 70 | 70 | 30 | 0 | 100 | 40 |
| Science | 60 | 40 | 50 | 0 | 100 | 40 |
| Appl. Tech. | 83.3 | 83.3 | 100 | 50 | 100 | 83.3 |
| Bilingual | 83.3 | 50 | 0 | 0 | 83.3 | 33.3 |
| Business | 100 | 100 | 100 | 40 | 80 | 60 |
| Phys. Ed. | 33.3 | 33.3 | 33.3 | 0 | 66.6 | 66.6 |

## Summary

One hundred and nineteen questionnaires were distributed to the faculty at Vineland High School South. Responses indicated on the 78 questionnaires returned were counted and percentages determined. All academic departments were represented.

The data presented in this chapter were utilized in the formation of the findings and conclusions of this study.

# CHAPTER V

# SUMMARY AND CONCLUSIONS

The purpose of this study was to evaluate teacher use of computer based technology for personal use and for professional use at Vineland High School South. This study also sought to identify factors that contributed to faculty use or non-use of computer based technology in the classroom. Professional use of computer based technology by teachers was examined within specific categories, including: class preparation, delivery of information, in-class student use, special education accommodation, e-mail communications, and recording of grades. The teachers of Vineland High School South indicated the ways in which they acquired their computer knowledge and what sources were most valuable to them. This descriptive study provided a "snap-shot" of computer use at Vineland High School South and discussed implications for future staff development and training, as well as potential areas of contribution of the library media specialist.

## Findings

Of the 78 teachers who responded in this survey, only six did not have a home computer. These home computers were used frequently by the teachers of Vineland High School South as indicated by the 88 percent that used their home computer daily or weekly. The only respondents who indicated never using a home computer were those

who did not own a home computer. While personal Internet searches and e-mail communications were the most frequently indicated home computer use, a large number of teachers (82.1 percent) indicated using their home computer for school/professional work.

An overwhelming 98.7 percent of responding teachers indicated that they used a computer at school daily or weekly (primarily daily at 96.1 percent). The other 1.3 percent indicated never using a computer at school. This remaining minority may now no longer exist, as recording report card grades on-line became a school wide requirement approximately two months after teachers completed this survey.

Approximately two-thirds of the teachers at Vineland High School South used computer technology for class preparation on a daily or weekly basis. Teachers in the English and Business departments were more likely to use technology for this purpose, while the Physical Education and Fine Art departments were least likely. Years of service in education had no apparent influence on this category of use.

Half of the responding teachers used computer technology for presentation of information on a daily or weekly basis. Only 17 percent of teachers never used computer based technology for delivery of information. The researcher felt that this was significant because research has shown that students are comfortable learning with technology. The Business and the Applied Technology departments were the most likely to use technology for class presentation, with Physical Education and Science the least likely. The researcher found this interesting, as this application seemed to lend itself well to the sciences. The number of years teaching had no apparent influence on a teacher's inclination to use technology for this purpose.

Seventy-eight percent of faculty responding indicated that they did use computer based technology at some time for student assignments during class time. While different subject areas can lend themselves more easily to computer applications, the researcher felt that this number should be 100 percent. All teachers, at some point in the school year should incorporate technology into their class assignments. The Applied Technology and Business departments were most likely to use technology for class assignments, while the Math and English departments indicated themselves to be least likely. Teachers' use of technology enhanced assignments during class time was influenced little by the teachers' years of service.

The majority of teachers at Vineland High School South never used computer technology for Special Education Accommodation. The departments most likely to use computer based technology for special education accommodation were Special Education and Applied Technology, while the least likely were Physical Education, Bilingual, Social Studies and Science. The overwhelming majority (75 percent) of teachers who indicated this use have been in education for less than one year. The researcher believes that this is true due to the fact that the majority of new teachers were in the Special Education department.

An 84 percent majority of teachers indicated using computers for professional e-mail communications on a daily basis. Only one percent never communicated professionally by e-mail. While all departments indicated high percentages for this use, the departments most likely to use e-mail communications were Applied Technology, Social Studies and Science. The department least likely to communicate by e-mail was Physical Education. Although not statistically significant, the findings of this study

indicate a slight decrease in the tendency to use e-mail for communication over the number of years of service in education.

At the time of this study, 59 percent of respondents utilized computers for the recording of grades. The researcher determined that this number was no longer accurate given policy changes. Shortly after completing this survey, teachers at Vineland High School South were required to complete marking period grades on-line. Despite this, at the time this data was collected, the Applied Technology and Math departments were the most likely to use computers to record grades and the Fine Arts department was the least likely. There was also a significantly stronger tendency for teachers with ten or less years in education to utilize computers for recording grades.

A number of factors were considered that could potentially increase or decrease a teacher's tendency to utilize computer based technology in the classroom. While each teacher's individual experiences strongly influences his response, the results of these questions cast a positive light on the state of technology at Vineland High School South. Sixty-seven percent of teachers reported that the availability of computers has increased their use of technology, while only 27 percent said that it has caused a decrease. Other factors that had increased use include: a friendly and efficient technical staff for 58 percent, a supportive administration for 59 percent, requirement to use for 47 percent and availability of training for 73 percent. The only questionable factor was the reliability of the technology. Forty-five percent of respondents said that reliability had increased their use of computer technology and 41 percent said that it decreased their use. Again, this is largely dependent upon personal experience, but it is definitely an area that can be worked on for improvement.

The faculty members of Vineland High School South had gained their computer skills in a variety of ways. The most common ways included self-taught, help from friends and colleagues and district provided professional development. Of these sources, 43 percent found the skills that they taught themselves to be most beneficial. Twenty-seven percent credited their friends and colleagues with the best training. Despite this 70 percent influence of self and friends, the district had provided the best training for 14 percent of its teachers. Although only 14 percent of teachers found district training to be most valuable, 82.1 percent of respondents did recognize the contribution of district provided professional development to their computer knowledge.

The places that teachers at Vineland High School South most frequently reported using a computer included home and classroom. Department office was a distant third and followed even further by faculty lounge, school library and school computer lab. Teachers reported using a computer most frequently in the classroom (51 percent), followed by home (at 41 percent). Seventy-six percent of the teaching staff expressed comfort with using Microsoft Word/Works. There was no other program that even half of the teaching faculty at Vineland High School South expressed comfort using.

## Conclusions

While some academic departments at Vineland High School South were more likely than others to cooperate with this study, the sample included representation from all departments. It is also true that some academic departments at Vineland High School South have been more resistant than others to incorporate computer based technology into their professional lives. This district, as well as this school, has made great strides to

provide adequate and reliable technology to all classroom teachers. This question of the reliability of computer technology at Vineland High School South, as determined by this study, has proven to have had the largest negative influence on teacher computer use. Obviously, policies requiring attendance and grades to be submitted on-line have increased teacher usage. While technology skills had primarily been self-taught or learned by the assistance of friends and colleagues, teachers also found district provided training beneficial. This district (and school) has made a commitment to providing technology training to all teachers. This support has also shown to have a positive impact on increased computer use.

The vast majority of teachers at Vineland High School South use computers on a daily basis. This is largely due to a strong reliance on e-mail for professional communication, as well as daily attendance being taken on-line. While a large percentage of teachers indicated using technology for student assignments at some point during the school year, all teachers need to incorporate technology. This is an area that could benefit from additional training. Staff development could include lesson plan ideas for specific academic areas, especially Math and English who reported using computer based technology the least for student assignments. The only computer program that at least half of the responding teachers expressed comfort with was Microsoft Word/Works. Further training in specific programs could increase teacher use of computer based technology for student assignments and presentation of information. Another area in which the teachers at Vineland High School South could benefit from additional training is special education accommodation. Most departments reported very low usage for this purpose. Due to inclusion practices, nearly all teachers have special education students at

some time. Professional development could include computer applications that would address students with specific special needs.

As a library media specialist, the researcher feels a responsibility to contributing to the professional development of the faculty at Vineland High School South. There are several areas that a library media specialist can be of assistance. With expertise in the area of technology, the library media specialist can train teachers not only to utilize specific programs, but also help teachers tailor specific technology based projects in their academic area, as well as for specific subject matter. This training and assistance can take a variety of forms ranging from formal in-service training to daily conversations and collaboration in individual lessons and assignments.

While the findings of this study are applicable only to the immediate situation at Vineland High School South, the concepts discussed are important issues considered by many high schools. Other school districts or schools can utilize a similar method to analyze their technology uses and needs. The researcher also feels that conducting a similar study at regular intervals would be beneficial to tracking the progress made at this school regarding technology use.

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# APPENDIX A

## Questionnaire – Computer Based Technology

*For Confidentiality, Please seal in attached envelope and return to Diane Stokes' Mailbox in the Main Office*

**Do you have a computer at home?** ____ Yes ____ No

**How often do you use your home computer?**

____ Daily ____ Weekly ____ Monthly ____ Less than monthly ____ Never

**How do you utilize your home computer? (Check all that apply.)**

____ Internet search (personal interests)
____ Shopping
____ Banking/Bill paying
____ Games
____ Personal E-mail
____ Tax preparation
____ School/Professional work
____ Do not use
____ Other (Please specify _____)

**Where do you use a computer? (Check all that apply.)**

____ Home ____ School library ____ Other (Please specify
____ Classroom ____ Public library _____)
____ Faculty lounge ____ Department Office

**Of the above mentioned locations, where do you most frequently use a computer?**

**(Choose one.)** _____

**How often do you use a computer at school?**

____ Daily ____ Weekly ____ Monthly ____ Less than monthly ____ Never

**What programs do you feel comfortable using? (Check all that apply.)**

____ Microsoft Word/Works
____ Hyperstudio
____ Microsoft Excel
____ Access
____ Microsoft PowerPoint
____ Quicken
____ Microsoft Publisher
____ Turbo Tax
____ Adobe Photoshop
____ Others (Please specify _____)

**--OVER--**

**How often do you use computer based technology for each of the following?**

****Class Preparation**
____ Daily ____ Weekly ____ Monthly ____ Less than monthly ____ Never

****Delivery of Information/Presentation**
____ Daily ____ Weekly ____ Monthly ____ Less than monthly ____ Never

****Student Assignments During Class Time**
____ Daily ____ Weekly ____ Monthly ____ Less than monthly ____ Never

****Special Education Accommodation**
____ Daily ____ Weekly ____ Monthly ____ Less than monthly ____ Never

**** Professional E-mail Communications**
____ Daily ____ Weekly ____ Monthly ____ Less than monthly ____ Never

**** Recording Grades**
____ Daily ____ Weekly ____ Monthly ____ Less than monthly ____ Never

**The following items may affect your use of computer technology at school. Next to each item, write a "+" if it encourages your use. Write a "-" if it hinders your use. Leave it blank if it has no influence.**

____ Availability of computers ____ Availability of training

____ Reliable technology ____ Supportive administration

____ Friendly and efficient technical staff ____ Required to use technology

**How have you developed your knowledge/skills with computer technology? (Check all that apply.)**

____ Self taught ____ District/school provided professional development

____ Tips from friends ____ Privately sponsored seminars/workshops

____ College courses ____ Assistance of school library media specialist

____ On-line tutorials ____ Other (Please specify _____)

**Of the sources listed above, which provided you with the most valuable training?**

**(Choose one.)** _____

**In which department do you teach?** _____

**How many years have you been in education?** ____ 1 year or less ____ 2 - 5 years

____ 6 - 10 years ____ 11-19 years ____ 20 or more years

**Thank you for your assistance – Please return by Friday, February 18th**

# APPENDIX B

# Memo

**To:** All Teachers

**From:** Diane Stokes

**Date:** 4/14/2005

**Re:** Graduate Thesis

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Hello colleagues. I am currently working on my thesis for my graduate program at Rowan University. I am in need of your assistance and ask that you kindly complete the attached questionnaire. It should only take a few minutes of your time. Upon completion, please place in envelope provided and return to my mailbox in the main office to ensure anonymity. Please return by Friday, February 18th. The results of this study will be made available in the library after April 30th to any interested parties. Your participation and support are greatly appreciated.