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ABSTRACT

Taming Technology:

Harnessing the Power of Computers in the Ministry of the Church

by

C. Milton Lowe

Humankind, created in the image of God, are co-creators with him and are therefore stewards of all subsequent discoveries, inventions, and creative imaginativeness including technology. This study sought to design, implement, and evaluate a workshop to train ministers in the use of technology in ministry. Pre- and post-assessment instruments measured changes in attitude, knowledge, and skill occurring in workshop participants. The post-assessment instrument also measured the participants' satisfaction ratings of course design, content, and methodology.

Thirty-one ministers, varying in age and ministerial experience, participated in the nine-hour workshop covering five areas of technology in ministry: publication, communication, presentation, research, and administration. Workshop design included presentation, demonstration, and simulation through lab experience. Significant positive changes occurred in ten of fourteen attitude items measured, twenty-two of twenty-three knowledge items, and all twenty-three skill items. A significant majority of participants expressed strong satisfaction with course design, content, and methodology.

DISSERTATION APPROVAL

This is to certify that the dissertation entitled

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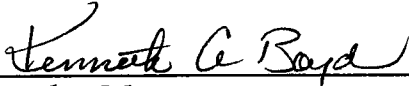
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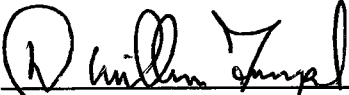
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by
C. Milton Lowe

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CHAPTER 1

Overview of the Study

On a Sunday morning early in November of 1996, I woke up in an unfamiliar motel room in Holland, Michigan. My plans for the day included attendance at one of the worship services at Central Wesleyan Church in Holland. Early November is not yet winter from my perspective but when I pulled back the curtain to look outside I saw everything covered with snow. Twelve inches of snow had to be shoveled off the walk and off my rental car before I could leave for church. This provided less than a perfect start for the day but all that changed when I arrived at the church. Starting with the music playing in the parking lot as I got out of my car, all that followed contributed to the most enjoyable and inspirational corporate worship experience of my life.

Entering the church I found myself in a spacious, functional foyer that led to other areas of the church, all marked with easy-to-read directional signs. Making my way to the sanctuary, I found a 1300-seat auditorium with comfortable padded pews and great sight lines from every location. A beautiful country scene was visible on a large rear projection screen behind the platform and soothing, inspiring music was playing through a state-of-the-art sound system. The service started exactly on time with an opening congregational hymn accompanied by piano, pipe organ, full orchestra, and a large choir. Words to all the songs were projected on the screen and the

lighting on the platform, choir, and congregation changed in ways that enhanced the mood and effect of the music. Announcements were also projected on the big screen along with the sermon outline, through the use of Microsoft PowerPoint presentation software. The voices of all those participating in the service sounded clear and natural because of the quality of the sound system and the expertise of the personnel in the sound booth. Transitions among platform personnel were smooth and unnoticeable. Technology contributed to the effectiveness of this corporate worship experience in multiple ways.

In many less noticeable ways Central Wesleyan Church uses computers in the administration of the church. Financial and contribution records are maintained on the computer for the church's \$4,600,000 annual income. Attendance is tracked for the 3100 persons who attend worship each weekend. Computer technology enhances the effectiveness of the ministry of Central Wesleyan Church and I wonder why more churches do not take advantage of the benefits of technology.

The Problem and Its Context

Why change the method of delivery of the church's message?

Although God's Word remains eternally relevant and life changing, the method for the effective delivery of the message changes with each successive generation. Jesus said in Matthew 9:17, "Neither do men pour new wine into old wineskins. If they do, the skins will burst, the wine will run out and the

wineskins will be ruined. No, they pour new wine into new wineskins, and both are preserved." For 200 years, the Church, the *wineskin*, quickly spread the Good News, the *wine*, from coast to coast in North America (Easum 12). These same congregations find it difficult to communicate the message with relevance to a hurting and unchurched world because the wineskin, the delivery system, is old and brittle (12). A ministry effective in an industrial society proves ineffective in an informational society (13).

According to Anfuso (1994) sixty-two percent of unchurched people in America consider the church unrelatable to them. Reaching the unchurched in America today requires change in the communication or delivery system of God's message. If the goal of ministry today is to communicate God's Word with relevance, then new wineskins or delivery systems are needed.

Transitioning out of the industrial age prompts paradigm shifts as did transitioning into the industrial age. John Wesley, when faced with the paradigm shifts of a changing culture, created a system of ministry that reformed not only countless individuals but English society as a whole (Henderson 11). Wesley's proactive approach that incorporated methods different from those used in the church for generations parallels the innovative approach that characterizes media-sophisticated techniques used in ministry today.

We, like Wesley, find ourselves in the midst of dramatic cultural change accompanied by multiple paradigm shifts (Easum 34), echoing the

sentiment of Dickens that “these are the best of times and the worst of times.” With the onset of the information age, multiple paradigm shifts induce changes in every area of life as successful methods of the past are proven no longer effective. Individuals in the church are caught in a crack of history between what was and what is emerging (Easum 23). These shifts manifest themselves in these cultural areas: religion, education, knowledge, technology, morality, relationships, organizational structures, ethnicity, and community and global inclusiveness (Easum 25-33). The most visible impact of these paradigm shifts appears in the way individuals assimilate and process information in a media-sophisticated society.

Culturally, learning styles transition with paradigm shifts. Learning styles once dominated by oral transmission transformed by the printing press to written communication, now find sight and sound as the most effective means of conveyance of information (Easum 24). Advertising, in recognizing this shift in learning styles, effectively reaches the masses with sophisticated visual media techniques. Likewise, to be effective in the communication of the timeless Gospel the church must avail itself of the same sophisticated media techniques to respond to the shift in learning styles of today’s society.

Should the Church embrace or avoid technology as a tool for ministry? Living in the Information Age means few areas of society remain untouched by technology. Schools, businesses, and government harness the power of computers to increase efficiency, effectiveness, and productivity. Harnessing

this power to enhance the efficiency, effectiveness, and productivity within the context of ministry is possible.

In recent years several periodicals emerged dedicated to the use of technology in ministry. These include Christian Computing, Scroll (formerly Church Bytes) and Computing Today published by Christianity Today. These three periodicals cover a broad range of topics related to computer technology in the life of the church. To illustrate the far-reaching impact of such periodicals, the premiere issue of Computing Today (March/ April, 1997) was distributed to over 100,000 readers. Other specialized periodicals such as Technologies for Worship Magazine are surfacing. Failure to embrace technology as a tool for ministry robs the Church of ministry opportunities never before available in its history.

Technology provides avenues to influence people we could not reach before and to more effectively minister to people living in this current age. Fulfilling the mission of the church in the Information Age requires the responsible use of technology. Technology provides a means of transmitting our faith and extending the message to the most remote places of our world (Sutinen 588). According to E. V. Clemans, computers offer the most powerful educational tool the church has ever experienced (14). The enormous power of technology makes it a helpful servant but that same capacity if misused becomes a controlling master. Consider the amount of pornography available on the internet. The forces of evil in the world wasted

no time in taking advantage of this new medium. As human beings created in the image of God with free will and given dominion over all of creation we must do our best to claim new technologies for the work of the kingdom of God both inside and outside the church.

Within the church context technology serves in the following areas: productivity and efficiency, information storage and retrieval, better planning and evaluation, and monitoring and tracking (Landauer 324). As a servant of ministry, technology enhances these specific ministry areas: communication, publication, administration, education, counseling, worship, outreach, study, and presentation (Hardee 233-235). As technology is used more and more as a tool for ministry, concerns arise for the good stewardship of such power and the moral, ethical, and theological impact upon the church (Gorsuch 188).

The intrusion of technology into society and church persists. Throughout history, technological discoveries advance the progress of civilizations from the use of fire to warm a primitive home to the unlocking of a car door through satellite communications. Philosophically, Jacques Ellul connotes the danger of drifting with technology instead of controlling it (Society 23-60). Humankind's dominion over all the earth involves responsible use of technology (Genesis 1:28). Theologically, the danger lies in trusting technology as a cultural, if not personal savior (Gorsuch 189). To properly exercise the dominion given to us by God, we must use technology wisely as God's stewards of this world (190). Ethically, the basic nature of

technology is not evil; it is the use of that technology which may serve evil purposes. Ethical considerations are for the users of technology and not the tools of technology (Clemans 13). To realize the benefit of technology and exercise moral and ethical technological integrity, those who use it in the context of ministry require training.

Due to the complexity and sophistication of the technological tools, computer-aided ministry requires intentional training (Hardee 240). This training should be based on sound instructional design principles and take into consideration the particular learning style of the student. To enhance acquisition and generalization of technological knowledge and skills, the instructional design should include a variety of learning techniques (e.g., presentation, demonstration, simulation, and discussion) and occur in multiple settings (e.g., classroom and lab). By incorporating multiple teaching methodologies and classroom settings, the intent is to provide for the many learning preferences of the participants as identified in the Kolb Learning Style Inventory.

Current technological training includes program offerings at the undergraduate, graduate, and continuing education levels. The focus of the training is the practical use of technology for the enhancement of ministry. More specifically, technology instruction involves a curriculum that extends beyond how software works to how software strengthens ministry. For the generations involved in ministry in the twenty-first century, training in

technology will be an essential part of the educational curriculum accompanying Christian doctrine and biblical interpretation.

As Director of Training for Suran Systems, Inc. (a company providing software for ministry), I visit churches all over America setting up church management software systems and training office and pastoral staff. The need for training in the use of technology in ministry arises in many of these settings, both large and small.

My first-hand experience of how effectively technology enhances ministry and the apparent need for more churches to use technology as a tool for ministry contributed to my interest in designing a workshop. Designing and teaching a workshop at Minister's Conference at Asbury Theological Seminary provided an opportunity to address directly the training needs observed in the field.

Statement of Purpose

The purpose of this study was to design, implement, and evaluate a conference workshop to train ministers in the use of technology in ministry. Through pre- and post-assessment, the benefit of the instruction to ministers in the field was explored, addressing the following research questions:

Research Question #1: What kind of knowledge, skill, and attitude changes, as measured by a pre- and post-instrument, occur in the individuals who participated in the workshop on technology in ministry?

Research Question #2: What aspects of the course design, content, and methodology were associated with high satisfaction ratings of the participants on the post-workshop assessment measure?

Research Question #3: What effect does the participant's learning style based on the Kolb Learning Style Inventory have on the changes exhibited in knowledge, skill, and attitude in technology for ministry?

Description of the Project

This study evaluated the usefulness and effectiveness of a technology workshop designed for use with ministers in the field. The workshop was delivered at the 1998 Minister's Conference held at Asbury Theological Seminary. Subjects in the study were the participants who registered for the technology seminar.

The workshop, "The Computer as a Ministry Tool," was one of four full-day pre-conference seminars offered at the 1998 Asbury Theological Seminary Ministers' Conference. A concise description of the seminar appears in Appendix A. The workshop encompassed a total of nine hours made up of two four-and-one-half hour segments on two consecutive days.

The specific timeframe follows:

Segment 1	Monday, February 2, 1998	1:00-5:30 p.m.
Segment 2	Tuesday, February 3, 1998	8:00 a.m.-12:30 p.m.

Based upon appropriate instructional design principles, the workshop encompassed these five content areas: publication, communication,

presentation, research, and administration. The specific tasks covered in each content area are illustrated in the following chart:

Content Area	Specific Tasks
Publication	Mail merge letter Creative church newsletter design
Communication	Internet activity and the World Wide Web E-mail activity
Presentation	Creating and using PowerPoint slides Technology and media in worship
Research	Use of Bible study software Use of personal resource management software and report generation
Administration	Church records data entry Generation of financial reports Visitation records and reports

Method

The method employed was a pre-experimental design and data collection occurred through the use of pre- and post-assessment instrumentation. Prior to course instruction, participants completed a pre-assessment instrument measuring their knowledge, skill, and attitude toward technology in ministry and the Kolb Learning Style Inventory. Following course instruction, participants completed a post-assessment instrument measuring the change in their knowledge, skill, and attitude toward technology in ministry and evaluating the effectiveness of the course design, content, and methodology. Post-workshop evaluation included informal

video interviews and the Speaker/Lecture Questionnaire provided by the seminary.

Mean scores on the pre- and post-assessment instruments were evaluated and compared and t-Test scores were calculated. Common themes from open-response sections on the post assessment instrument were identified. Analysis of variance was used to determine if learning style, based on the Kolb Learning Style Inventory, affected participants' growth. The resulting quantitative and qualitative data were used to answer all of the research questions.

Subjects

Voluntary participants who attended Ministers' Conference and registered for this specific workshop comprised the population of this study. The majority of the thirty-one participants were full-time ministers who varied in age and experience.

Independent and Dependent Variables

The independent variable of this study was the workshop designed for the 1998 Minister's Conference at Asbury Theological Seminary. Dependent variables include the following: the changes in knowledge, skill, and attitude as measured by the pre- and post-assessment instruments completed by the participants and the effectiveness data on the course design, content, and methodology as measured by the post-assessment instrument completed by the participants. Intervening variables include the background and

experience of the participants (self-selecting population) registering for the seminar and their particular learning style based on the Kolb Learning Style Inventory.

Instrumentation

Data collection for this study was compiled from two assessment instruments. The Pre-workshop Survey consisted of Likert type scale items to evaluate participants' entry level of technological attitude, knowledge, and skill. Prior to the beginning of the workshop participants also completed the Kolb Learning Style Inventory (LSI). On the Post-workshop Survey both the Likert type scale items and open-ended response questions determined the change in technological attitude, knowledge, and skill as well as evaluated course design, content, and methodology. Changes were evaluated in light of the participants' particular learning style to determine any correlation between learning style and ability to learn technology. Post-workshop evaluation included informal video interviews and the Speaker/Lecture Questionnaire provided by the seminary's continuing education office.

The Likert type scale items were rated on a five-point scale. The Likert type scale items for assessing attitude included these ranks: Strongly Disagree, Disagree, No Opinion, Agree, and Strongly Agree. On the items for assessing knowledge, the five-point Likert type scale uses these ranks: No Knowledge, Little Knowledge, Some Knowledge, Much Knowledge, and Extensive Knowledge. The skill areas assessment includes these Likert type scale

ratings: Beginner, Novice, Amateur, Expert, and Master. Open-ended items provide opportunity for participants to report additional information to further support the operational definitions of the research questions. The themes generated from these open-ended items are used to support the quantitative information gathered from the Likert type scale items. Qualitative data derived from the informal video interviews provides additional supportive information.

Delimitations and Generalizability of the Study

Study limitations and reduced generalizability data result from the pre-experimental Single Group Pretest and Posttest research design. The focus on a single experience limits generalizability, and the self-selecting population provides a narrow sample. Multiple training experiences involving more varied populations are needed to extend the findings of this study.

Though narrow in its scope, this study does provide an instructional model for technology training. Using research-supported instructional design principles for course development strengthens the generalizability of the instructional model. The pre- and post-assessment provides effectiveness data which supports future course design. Focusing on the ministerial population increases the generalizability to similar populations in educational institutions which are preparing individuals for ministry.

Overview of the Study

This study intended to deliver insight into technological training needs, to provide a model for technological instruction design for training ministers, and to contribute data on training effectiveness. Chapter 2 anchors the study within the research related to theology, technology, societal transformation, technology integration, and training. Chapter 3 encompasses the research design and its methodology. Chapter 4 reports the results generated from the research design. Chapter 5 summarizes the findings of the study and targets future directions.

CHAPTER 2

Review of Selected Literature

In a society so profoundly impacted by technology, the church must understand and take advantage of these advances or miss opportunities for ministry. In response to technology, the church faces a two-fold task. First, the church's responsibility is to minister within the context of current culture or risk proclaiming a message which is unheard and unheeded (Warren 165). Since current culture is so permeated with technology, we must understand its impact on society in order to minister appropriately in today's world. Second, the church should take advantage of technology to enhance ministry and increase effectiveness. In its use of technology the church must be careful to assure that technology serves the purposes and goals of ministry rather than ministry becoming the servant of technology. The goal of ministry involves a personal touch which invokes positive change and healing in the lives of hurting people and not the glitzy, hi-tech facade which impresses but does not impact. In order for technology to be successfully integrated into ministry, the church must be intentional in its effort to understand and use technology appropriately.

The parameters of this literature review encompass five issues highlighted in the context of this study: theology, technology, societal transformation, technology integration, and training. First, the theological and ethical ramifications of technology in society in general and ministry in

particular are discussed. Second, the availability of different types of technology as tools for ministry is described and evaluated within this study. Third, the rapid and dramatic changes in our culture, prompted by advances in technology, create challenges for an effective ministry and are considered here. Fourth, consideration is given to the integration of technology into the life and ministry of the church. Fifth, the availability of adequate training and the appropriate design and development of training in the use of technology in ministry are explored and addressed.

A perusal of current periodicals (i.e., Christian Computing, Scroll (formerly Church Bytes), Computing Today, and Your Church) reveals an abundance of computer software designed to aid and enhance ministry. Ministers, church leaders, and software developers in increasing numbers recognize the computer as a valuable tool for ministry. This comes as no surprise in a culture inundated with technological opportunities from cell phones to E-mail, from electronic banking to internet access, and from teleconferencing to multimedia presentations. Failure to recognize computer technology as a tool for ministry would be tantamount to the publishers of the Bible failing to recognize the value of the Gutenberg printing press.

Michael Slaughter in his book Out on the Edge states that we live at a hinge point in history (31). The world we live in is post-modern, post-Christian, and post-literate. Post-modern means post-scientific in that people

no longer believe all truth can be defined by science. People are recognizing the inherent spiritual quality woven into the fabric of creation. Described by Slaughter as Post-Christian, today's society is not anti-God, but anti-Christian, considering Christianity intolerant and exclusive (34). Post-literate means that the printed text, unlike a generation ago, is not the main source of information for most people (36). Sharing the Gospel in today's society requires consideration of the current societal context and a clear understanding of who we are as persons created in the image of God and called to be stewards of all creation. As we transition into the information age, technology gives us more power and dominion over the world, but such power does not equal wisdom. Technology with its gift of power magnifies our sin when we are unfaithful in the stewardship of that power (Gorsuch 188). Hence, we must consider the theological, philosophical, and ethical ramifications of the church's entrance into the information age (Gorsuch 188).

Theological, Philosophical, and Ethical Ramifications

The technology era uses information access as power. Although the church must compete with this power, it must do so within a moral framework that governs the usage of technology. Considerations of the theological, philosophical, and ethical dimensions lead to appropriate development of a moral framework for technological development in our society and the church.

Theological Ramifications

In the account of the creation of humankind in Genesis we read, “Let us make humankind in our image, according to our likeness” (Genesis 1:26 NRSV). Humans have a certain freedom as the result of being created in the image of God. This freedom, according to Bonhoeffer, is not for self but for others. Freedom is not a quality, an ability, or a capacity; it is a relationship. Only in relationship with God is a person truly free (Bonhoeffer 37). Humankind is the only created entity able to hear the word of God through which he exists. Therefore, unlike all other creatures, humankind are co-workers with God in the work of creation (Jensen 251). Creation continues; it is an ongoing process with humankind involved in what happens (Soelle 37). According to Pannenberg in What Is Man?, humankind determines what is to become of the world (7). The world was not just put into existence once and for all by the creator and left to evolve and operate on its own from that point forward says Pannenberg in Toward a Theology of Nature. The act of creation did not take place only at the beginning but continues every moment and this process continues toward the ultimate goal of the glorification of all creation (35).

The creation account also includes the phrase “let them have dominion over . . . all” (Genesis 1:26 NRSV). The same passage also mentions the dominion over the earth given by God to humankind (Genesis 1:28 NRSV). Immediately after humankind was created they were given

dominion over creation. In his book, Anthropology in Theological Perspective, Pannenberg indicates present-day exegetes do regard the commission to have dominion over creation grounded in the image of God (75).

Dominion over creation establishes the role of humans, who are co-creators with God, as stewards of all subsequent discoveries, inventions, and creative imaginativeness. Created in the image of God, people are to be involved in the creative process, a sharing of the exercise of power or dominion (345). The verb, *have dominion*, does not mean exploitation but care-giving and nurturing (Alexander 346). It is humankind's gift of creativity that is most dangerous, leading to the employment and domination of nature for our own purposes instead of the purposes of God. Nature becomes a warehouse of the raw materials necessary for modern and comfortable living (Gilkey 143). Anthropocentric, or human self-centeredness, describes almost every aspect of Western culture, especially science and technology, according to Sean McDonagh. Humans have power over the natural world which is seen only as raw material to be molded and manipulated for humankind's own purposes and betterment according to their human-centered agenda (125).

The command in Genesis 1:28 including words like subdue, rule, and conquer related to nature is often used to legitimize human exploitation of the world. Clive Ponting sees this attitude as he looks at European culture

and says, "A strong conviction running through both classical and Christian tradition has been that human beings have been put in a position of dominance over the rest of a subordinate nature. Although the ideas that humans have a responsibility to preserve a natural world of which they are merely guardians can be traced through a succession of thinkers, it has remained a minority tradition" (142). David Hopper says that Christianity and Judaism have opened the door for the modern technological drive to exploit the natural order for human purposes by denying a divine status to nature (98). Neither evangelical theology emphasizing personal conversion nor liberal theology emphasizing liberation from oppression have provided an integrated vision of life including a biblical emphasis on the redemption of creation (Granberg-Michaelson 25).

In speaking of the dominion mandate in Genesis 1:28, David Chilton states the basic characteristic of spirituality is dominion. "Spirituality does not mean retreat and withdrawal from life; it means dominion" (4). Gary North speaks to this same issue of dominion and writes, "Satan has run many things on earth ever since the Fall of man, because Adam defaulted on his assignment Dominion is still God's assignment to man, not to Satan. God's assignment to man to exercise dominion across the face of the earth is still in force God is in charge, waiting for His people to challenge the rulers of the earth and take the steering wheel from them The battle for the earth is currently going on" (23-24). Historically, Christians have wrestled

with the biblical definition of dominion. To illustrate, Steven Bouma-Prediger, with the support of several other authors, notes the connection between the male domination of women with the domination of nature (25). Male domination as the plan of God for the family is a popular teaching in some churches, but this is really part of the curse as a result of the fall, according to Don Joy (24). Just as male domination results from the fall of humankind the inappropriate domination of creation and the natural world also result from the fall.

Thus, Christians living in the transition into the computer age have the responsibility to consider carefully their role as stewards of God's creation and co-creators with him and how computers fit into that role (Gorsuch 185). Computers are the result of God's good creation including matter and mind and part of what we exercise dominion over in the world (Clemans 12). In light of this, computers and the use of technology must be analyzed from a theological perspective (Gorsuch 187). We must be involved not just in the use of computers and the creation of new technologies for our own selfish ends. We must approach technology with the final goal in mind, the redemption of all creation.

"Does Silicon Valley hold the keys to the kingdom?", asks David Lyon in The Silicon Society (qtd. in Gorsuch 189). Some contend the computer can somehow make better decisions than we and trust it to become our cultural if not personal savior (189). Clemans indicates that if you put foolishness into a

computer, foolishness comes out; but that foolishness, having passed through a very expensive device now has more credibility and value than it deserves (Clemans 14). The danger here is the tendency to turn over to the computer the power and authority given to us by God to have dominion over all the earth which results in computer idolatry (Gorsuch 189). Therefore, we must always return to the point where computers and technology are servants of ministry helping to achieve the goals, not determine the goals.

Clearly, the church is called to continue to be the church in the midst of the computer revolution. To be true to that calling we must use technology wisely as good stewards of God's world (Gorsuch 190). We must not only use it wisely for the building of God's kingdom on earth, but we must work to discourage its misuse by others such as those who would distribute pornography over the internet. We should reclaim these new mediums for the purposes of good, not evil. The computer revolution represents the exercise of God's gift of intelligence and as a result, this growth in technology helps us better fulfill the mandate of dominion over the world entrusted to us by God (193). Computers used to fulfill God's mandate require certain philosophical and ethical questions to be considered and answered.

Philosophical Ramifications

Philosophical, ethical and moral concerns regarding technology continue. These concerns have been considered and debated throughout history. Jacques Ellul's writings on technology in a philosophical context

force the deliberation of these often overlooked concerns (Society and Bluff). For Ellul, technology is not a way to “do” but a way to “think”. For the word *technology* Ellul substitutes the word *technique* by which “he means not only the machine technology so many thinkers have attacked, but the standardization of procedures and behavior in order to develop ‘the one best method’ for the achievement of any result” (Society, cover flap). Ellul’s historical treatment of the effect of *technique* on society provides insight into the dangers of drifting with technology instead of controlling it (Society 23-60).

Ellul, in his book The Technological Bluff, addresses five dangers that impede our ability to objectively use technology. First, the theme of normalization portrays the computer’s influence over the standardization of language that leads to other areas of normalization in the workplace (223). Second, society’s obsession with change makes anything novel appear revitalizing rather than genuine renewal offered through spiritual growth and servanthood (224). Third, the focus on change at all costs alters the perception of a progressive society to encompass no tolerance for zero growth (224). Fourth, the focus on speed pushes people to believe that decisions and results must occur quickly to be effective (224). Fifth, judgment depends on the technology making decisions isolated from technology invalid, and it eliminates moral judgment due to its nonreliance upon the science (225).

Ellul warns of these dangers present in a technological society and challenges us to beware of how we assimilate today's technology.

Throughout the ages technology occurred by discovery and not intentional design. Civilizations progress from one invention to another with more regard for means than ends. Problems occurred when society either feared and rejected technology or embraced it completely with no evaluation of purpose. Primitive society's struggle to survive led to the discovery of invention and technology (Ellul, Society 23-27). Greek society, with its focus on philosophical activity and intellect, rejected the potentiality of technology (Society 28-29, Hopper 34). The Roman civilization in its overwhelming desire for technology, lost the balance provided by philosophy and intellect (Society 31-32). Christianity used technology in transmitting the message of the Reformation but criticized the economic well-being and luxury considered by some to be the result of technology (Society 35-38; Hopper 35, 48-50). During the Renaissance era, much like in the Greek society, the pursuit of ideas and ideals curtailed technological progress due to their rejection of any system of conformity (Society 40-42, Hopper 43-48). The Industrial Revolution brought about the development of a clear, technical consciousness which marked exceptional growth in technology (Society 57-59). This exceptional growth then led to the Information Age in which today's society finds itself entrenched.

Ethical Ramifications

Central to any ethical considerations is the revolutionary impact of technology on our culture. Technology promotes its own culture, one which is lacking in context and form or boundaries (Postman 18). Mark Slouka, in his book War of the Worlds, addresses this moral dilemma and cautions us on how technology creates its own logic separated from human values and ethics (13). Slouka warns that technology advances are not amoral because they tap into our sensibilities, thoughts, and behaviors (109). For example, the web provides the opportunity to communicate anonymously without accountability for irresponsible behavior. Slouka and Neil Postman parallel Ellul who reminds us that the greater ethical concern focuses on what the technology convinces us to believe, not what it can do for us. Although technology is not intrinsically evil, it does embody the values of the society from which it emerges. These may not be the official cultural values expressed through ethical codes or religious beliefs but they are the implemented values--those considered appropriate and not taboo (Ferre' 44).

A contention exists that considers technology to be a powerful evil and that it must be treated as such. Granted, the computer is a powerful tool, but it is a tool just the same. Powerful tools are often feared because to the extent they can be beneficial, they can also be harmful (Clemans 13). The essence of technology is not what determines whether or not it is evil; the use of that technology makes that determination (13). Therefore, a discussion of the

ethics of technology is more appropriately a discussion of the ethics of those who use technology (13). The issue for Christians is not what computers can do, but what God's people will do with computers. Computers can empower the church in almost every area of ministry like the printing press did in the fifteenth century (Rossman 46). Just as the printing press was not left only for the pornographers but claimed and used for the kingdom of God, so should the computer.

The term creation, as discussed under theological ramifications, refers to the bringing into existence of everything that is not God but also covers the subsequent origination of new things brought to be out of the previously created material (Erickson 373). In describing the meaning of the doctrine of creation, Erickson states that nothing created is intrinsically evil (375). This puts a responsibility upon humankind. Sinful behavior cannot be blamed on the surrounding environment since the material world is not inherently evil. This sinful behavior is the exercise of a person's own freedom and comes from within. (376).

The people who program and use computers are the final arbiters of whether the computer accomplishes good or evil (13). People who have the integrity to use technology wisely need to be trained to use it in the church (Clemans 14).

Some of the specific ethical issues worth consideration in the realm of technology in the church include copyright laws, the treatment of church

office personnel, and privacy (Sargent 116). Computer software is easy to copy and use but this practice is obviously illegal because of copyright laws.

Church leaders must be careful to avoid the introduction into the church computer system of illegally copied software, especially that brought in by well-meaning church members from their home computers in an effort to support the ministry of the church (117).

Rossmann and Kirby suggest three key ethical words for computer users: compassionate, collaborative, and responsible. The compassionate computer user uses the computer to support a life of servanthood seeing the world's need from God's perspective and attempts to make a difference in the lives of others. Collaboration must exist between developers and customers to cut down on the pirating of software reducing funds available for continued research and development. Moral responsibility comes with this technology so as to direct it to serve all of God's creatures (Rossmann 101).

In the area of church personnel two issues surface. First, as the church office is computerized, consideration must be given to the church employee who cannot or will not use a computer (Rossmann 118). In consideration of such individuals, the church leadership must exercise patience while they learn, wait for them to retire or move to another job, or hire someone else to use the computer and move them to other non-computerized responsibilities (119). Second, some volunteers in the church lose their ministry as the office is computerized. Some jobs are best accomplished manually rather than take

away someone's ministry in the church (119). Sensitive, confidential records must be handled with care in the church. Counseling notes, contribution records, and attendance records should not be available indiscriminately. Appropriate security, including the use of passwords, must be exercised in the maintenance of such records (120). Church records are legal documents and as such should be carefully preserved, but they should not be made available to the point of embarrassment or harm to individuals within the church.

I Peter 1:1-2 describes the elect as God's chosen people. Being chosen carries several connotations: (a) chosen according to the purpose of God, (b) made a holy people, (c) chosen by God's Spirit, (d) obedient to Jesus Christ, (e) purified by his sacrifice (Rossman 110). Living according to this passage makes a difference in the way we use computers. Technology used in the context of our election by God will direct its use to serve all of God's creatures.

In the proper philosophical context, with an appropriate theological perspective and under the direction of firm ethical guidelines, structure can be created for the appropriate use of technology. The church can provide a model for using technology as a means to a productive end, the goal of ministry. Consider the practical reasons for using emerging technology in present-day ministry.

Why a Car Instead of a Horse

Contemporary ministers and missionaries use cars instead of horses for obvious reasons of efficiency and effectiveness. Computer technology

provides the same kind of increase in efficiency and effectiveness in all areas of ministry. Schools and businesses are harnessing the power of computers for educational ends. E.V. Clemans claims the "church need not be far behind"(14). "Used responsibly, computers may well be the most powerful educational tool available since the advent of oral and written communication"(14). Erkki Sutinen cites technology as an emerging and essential tool for the Christian faith to be used in transmitting as well as presenting the message (588). As further support for technology in ministry, Sutinen notes the significance of computers in communication, creativity, and mission (588).

Outfitting individuals to fulfill the mission of the church in today's culture and society requires the minister to adopt the role of an equipper and enabler (Stubblefield 19). To fulfill this ministerial role in today's demanding society, pastors must consider the technology tools which will enhance their ability to serve. The danger here is to allow technology to direct the ministry rather than serve it.

In the first chapter of Genesis God names us as his stewards of this planet. Living during this time of transition into the computer age, we must consider our role as stewards and how computers fit into that role (Gorsuch 185). To act as responsible stewards of creation's resources requires the time and effort to learn how to use the tools in ways which enhance ministry (Clemans 14). A period of transitional learning is required with the

introduction of any new technology as previously experienced with the introduction of fire, the chariot, or the automobile. During this time we must learn to make the tool the servant rather than serving the tool (14).

Technology is Transformational for Society

In today's society the transformation of learning styles occurs at a rapid pace. We live in a media-sophisticated era where people, especially youth, learn more from sight and sound than from print. This phenomenon promises to increase as the cost of technology goes down and the quality and availability go up (Anfuso and Loveless 1994). This dramatic change in the frequent use of technology and in the way we learn prompts paradigm shifts in many areas of contemporary life, which in turn compel changes in the way we communicate the message of the Gospel.

William Easum lists sixteen paradigm shifts affecting society today (25-33). The first paradigm shift specifically related to the church concerns the move from domination in the church by clergy to domination by the laity (25). For a variety of reasons, clergy are equipping laity to participate in and lead the ministries of the church. Second, prior to 1960, American society was characterized as "churched" but "unchurched" describes today's society (25). The third paradigm shift points to the end of the age of discovery and the beginning of the age of discernment. Sorting through and discerning the applications of the last three decades of discoveries is now a priority (26). Fourth, one of the paradigm shifts finds truth less defined by religion and

faith than before and more defined by technology and science (27). Moral standards degrade as paradigm shift five finds people more concerned about self than the local, national, or global community. Ethics build upon whatever is good for the individual (28).

Paradigm shift six points to society's move toward relationships with people who meet their individual needs rather than connections with institutions. Thus belonging becomes more important than joining (Easum 28). The increased speed of the appropriation of knowledge indicates those who learn the most will accomplish the most in the emerging world according to the seventh paradigm shift (29). Shift eight focuses on the disappearance of the middle class and nine highlights the emergence of a global community where world-wide connectedness is on the rise (30). Paradigm shift ten accents the decline of neighborhood involvement and number eleven reminds us of how people learn today through sight and sound more than print (31). Decentralization in government and the corporate world as well as the increased speed in the way information is transmitted and received make up paradigm shifts twelve and thirteen (31-32). More ethnic diversity and less male domination mark the emerging world according to shifts fourteen and fifteen (32). According to paradigm shift sixteen, compassion and empathy replace obligation and duty just as the Protestant work ethic moves aside for an emphasis on fulfillment and personal meaning (33).

Changes in the way ministry is provided as well as windows of opportunity to future ministries open up because of these sixteen paradigm shifts (33). As society shifts so must our approach to ministry as we seek to bring the timeless message of the Gospel to a rapidly changing society.

It takes a contemporary church to convey a timeless message to a contemporary society. Luke 11:52 states, "Woe to you experts in the law, because you have taken away the key to knowledge. You yourselves have not entered, and you have hindered those who were entering." Ways must be found to unlock the doors in others' lives that we might effectively communicate God's Word to them (Anfuso and Loveless 1994). John Wesley used new and innovative approaches to ministry in his day to reach as many people as possible. These include not only his small-group approach to discipleship but also approaches like concept formation by hymn singing, penny collections, inexpensive mass publication, primary schools for the poor, and economic development projects for the poor (Henderson 155-158).

Jesus' communication pattern adapted to the language and culture of those he attempted to reach. His communication made relevant connections to those he shared with (Anfuso and Loveless 1994). We too must communicate with relevance if we wish to compel and motivate people to respond to God's call upon their lives (Anfuso and Loveless 1994).

Technology as a Servant of Ministry

Harnessing the power of technology as the servant of ministry requires an understanding of the various functions achievable through computers and the multitude of tools available to perform the tasks. Thomas Landauer lists four ways to use computers to increase productivity which relate to how the computer can enhance ministry:

1. Reduce unnecessary and duplicate work by storing and transporting information electronically.
2. Improve the coordination and synchronization of work by better planning, monitoring, tracking, and analysis.
3. Support new high-productivity products and services that depend on powerful information processing.
4. Help individuals perform information work more efficiently. (324)

Technology becomes the servant of ministry as it enhances ministry productivity in the areas of communication, publication, administration, education, counseling, worship, outreach, study, and presentation (Hardee 233-235). Since the intent is to bridle the power of technology for the enhancement of ministry, this portion of the review focuses on the various technological tools available and how to use them as servants of ministry.

Table 2-1 identifies broad areas of ministry and the related tasks under each area impacted by the employment of technology. In each area of ministry, the impact of technology surfaces:

Table 2-1
Identification of Ministry Areas and Tasks Using Technology and the Ministry Impact

Ministry Areas	Ministry Tasks	Ministry Impact
Word Processing & Desktop Publishing	Correspondence Bulletins Newsletters Sermon Writing Educational Materials Clip Art	Produce printed material more quickly and efficiently with fewer mistakes and in a more attractive format; edit and revise with ease
Administration	Church Management Membership Attendance Contributions Finances Visitation Scheduling Facility Management	Maintain address lists, group lists, activities, interests; track attendance, gifts, finances, and visitation. Track personal schedules as well as facility scheduling including temperature control.
Study Tools	Bible Study Language Study Sermon Preparation Illustrations Library & Resource Management	Search and compare various translations as well as original languages. Sermon aids and illustrations. Catalog books and resources.
Counseling	Assessment Tools Counseling Notes	Personality inventories and running notes on counseling sessions.

Table 2-1, continued

Ministry Areas	Ministry Tasks	Ministry Impact
Communication & Information	Congregational Communication E-mail Internet Research Advertising Pastoral Interaction & Support Ministerial Relocation	Phone Tree to call members with important news. E-mail among members, churches, and ministers. Unlimited resources on the internet. Church WEB page. Electronic transfer of data about available ministers and churches.
Worship & Music	Liturgies Music Library Management Worship Resources Children's Sermons Electronic Hymnals	Worship aids including orders of worship and children's sermons. Hymnals on disk and management of the music library.
Multimedia	Slide shows	Project song lyrics and sermon points during worship, outlines for classes, video clips to illustrate sermon points.
Education & Games	Activities Adventure Games Arcade Games Drill & Practice Preschool Learning Quiz-based games Tutorials	Learning games and teaching tools including worksheets and lesson outlines.

1. Thoughtfulness and deliberation are necessary to insure the appropriateness of the technology to the task (Clemans 14). Careful selection of software for tasks reduces time required and provides additional time for other types of ministry.
2. Time saved on routine office administration releases the pastor to provide more personal contact with the people (Gorsuch 188).
3. Personalized communication such as individualized correspondence and personal messages through PhoneTree are provided in a fraction of the time formerly required for such tasks which were often neglected in the past due to time restraints (Gorsuch 188).
4. People who have the integrity to use technology wisely can now be trained to use it in the church (Clemans 14). The pool of available people has increased because computer literacy is no longer a prerequisite for the use of a computer (Gorsuch 186). Inexperienced volunteers and retirees are now candidates for such training.

Even though the ministry and mission of the church remains unchanged, the accomplishment of ministry and mission has changed drastically in the current generation due to the availability and power of technology.

Technology can be integrated into the life and ministry of the church in unlimited, positive ways.

Technology Integration into the Ministry of the Church

Central Wesleyan Church in Holland, Michigan has committed to the use of technology for the enhancement of ministry. Examples of this commitment include:

- **inspirational music in the parking lot twenty-four hours a day playing through speakers mounted throughout the area**
- **state-of-the-art sound system for worship services**
- **built-in large screen with rear projection utilizing PowerPoint to display song lyrics, announcements, and sermon outline**
- **lighting changes to match the mood of each segment during the worship service**
- **video vignettes designed to enhance worship used with the rear projection screen**
- **full-time pastor of technical ministries**
- **computers in church offices complete with an internal e-mail system and internet addresses for staff**
- **common productivity software and specialized software applications available on office computers**
- **establishment of a church web site to attract and inform**
- **careful attendance tracking for 3500 weekend worship attenders**

- extensive maintenance of membership, contribution, and financial records through sophisticated church management software
- exceptional printed materials which are attractive, professional, and informative
- “Flock Food” tape ministry designed to enhance the spiritual growth of the membership
- software for musical composition and arrangement
- software for Bible study and education

This extensive use of technology enhances the ministry of Central Wesleyan Church. The direction of that ministry is guided by their mission statement:

CENTRAL WESLEYAN MISSION STATEMENT

We believe God has called Central Wesleyan Church to be grounded in Scripture: therefore we purpose to be a Body-life fellowship where all can worship and experience Christ; where Spirit-filled believers win the lost, disciple believers, and encourage all to grow to maturity in Christ in order to reach Holland and beyond to the glory of God.

The integration of technology as a servant of the mission of Central Wesleyan Church enlarges and expands its outreach into the community and the world. As a result, it stands as the largest Wesleyan church in America and the growth, both numerically and spiritually, continues to spiral upward.

Other churches, such as Ginghamburg United Methodist Church near Dayton, Ohio, use technology to enhance ministry and promote church growth. Ginghamburg, following the God-given vision of Senior Pastor Michael Slaughter, has grown from 90 to almost 3000 in the last twenty years largely due to their high-tech approach to worship, teaching, and discipleship. The worship team utilizes cameras, graphics, video, sound and lighting in producing what has been called the leading worship celebration media experience in North America. This approach to worship not only attracts unchurched people but provides ministry opportunities for countless volunteers. Opportunities to participate in technology-related ministries are provided through varied ministry teams some of which are described in the following chart.

Ministry Team	Ministry Opportunity
CyberMinistry Team	Programmers, graphic artists, and editors working together to further develop and maintain the ever evolving Ginghamburg presence on the world wide web
CyberSermon Transcription Team	Typists, transcriptionists, and editors who translate the weekend message for both print and web page version
CyberDevotional Team	Writers and editors who create daily devotions for posting on the Ginghamburg web page.
Graphics & Visual Media Team	Graphic artists involved in the design and production of print and other forms of communication

Ministry Team	Ministry Opportunity
Photography Team	Amateur and professional photographers who service all ministries within the church
Celebration Media Team	Utilize cameras, graphics, video, sound, and lighting in producing what has been called the leading worship celebration media experience in North America.

Senior Pastor Slaughter says, "I believe media is the new reformation.

Technical media is to this M-TV generation what Gutenberg's press was to the Protestant revolution. Gutenberg's press got the gospel into the hands of the common people. Today, technology and multi-media in the church will get the gospel into the hands of this M-TV generation" (Hutson 4).

Churches across the country and around the world are finding the computer to be a valuable tool for ministry but whether or not it is a powerful tool depends on how it is used by a particular church (Hardee 227). A church does not become computerized overnight. J. Ralph Hardee says computerization in the church usually involves the following four phases: embarkation, efficiency, effectiveness, and enhancement (229-230). These phases are illustrated in Table 2-2. As a church expands its ministry to incorporate technology, an effort to move systematically through these phases of integration should occur. Systematic integration assures the church's commitment to and inclusion of ethical principles which extend people's understanding and use of technology so that it becomes the committed, loyal

Table 2-2
Phases of Computer Integration into the Ministry of the Church

Phase	Description	Computer Use Level	Characteristics
Embarkation Phase	Set-up, Inauguration, or Entrance Phase	Computer hardware and various software applications are acquired.	Idealism and Anxiety. Computerization is anticipated with both excitement and fear.
Efficiency Phase	Start-up, Plunge in, or Launch Phase	Computer use focuses on data collection, storage, and maintenance and is used to do administrative work more efficiently.	Computer reports are used more to retrieve and view data than to generate and apply information.
Effectiveness Phase	Warm-up, Stretch out, or Exploration Phase	Computer is viewed as a way of increasing productivity--a more effective way of doing work.	Reports become information centered and are used comparatively and analytically.
Enhancement Phase	Heat up, Projective, Heightened Intensity Phase	User skills and productivity with computer applications operate at an expert level.	Computer is viewed as a means of growth--a way to enhance personal and professional performance and satisfaction. Computer use is focused on creative, original, unique, or modified approaches to ministry.

(Hardee, 229-230)

servant adding depth and breadth to the ministry of the church. Failure to do so results in frustration and limited productivity. In this instance, technology becomes the half-hearted, disloyal servant who hinders the achievement of the ministry goals.

The integration and implementation of technology in ministry follows two basic avenues:

1. to perform administrative tasks of the church which include clerical, business, and recordkeeping functions
2. to perform growth-oriented tasks to creatively expand the ability of the church to serve its constituency (Hardee 230-232).

This decade marks widespread acceptance, acquisition, and use of technology within the church. As churches embark on computerization, force from within must support this move to technology. In most instances, the force within is the pastor who becomes the primary catalyst to cast the vision of a technologically-enhanced ministry (Hardee 239).

Churches who resist this vision due to real or perceived roadblocks often fail to realize their full potential for ministry. These roadblocks include financial barriers, fear of computers, donated substandard hardware, and lack of professional training in the use of computers (Hardee 240). The elimination of these roadblocks occurs when churches, and especially pastors, become aware of the multiple benefits of computer-aided ministry and receive adequate support and training (240). Specific technology training

integrated into preparation programs and continuing educational experiences prevents the tragedy of countless churches entering the twenty-first century without computer-aided ministries.

Focus on the Training of Pastors for Technologically Enhanced Ministry

Personal experience provides an overview of preparation programs and continuing educational opportunities available to ministers and ministerial students. Preparation programs include offerings at the undergraduate and graduate level. At Asbury College a specifically designed technology course is offered to Christian Ministries majors. Within this course, activities focus on the authentic tasks of ministry. Another example is a course entitled *PM627 Creative Use of Computers in the Church* offered at Asbury Seminary. The course description states: "This course is designed for the novice or beginner wanting to gain experience in the use of computers as a tool for effective ministry" (Boyd & Groeling course syllabus). Areas covered in this course include word processing, church and Bible-related applications, communications, desktop publishing/graphics, and computer operating systems. Seminary course offerings include *CE/YM 674, Instructional Media in the Church* which focuses on using technology in worship. Other courses (e.g., preaching and church administration) at the seminary include segments on technology in ministry. Many seminary professors also model the use of technology through the use of media center services and PowerPoint presentations. Southern Wesleyan University in

South Carolina in its Masters of Christian Ministries program offers modules dedicated to the use of technology in ministry. These examples are not all inclusive, but they serve to provide insight into current offerings by institutions of higher education.

Continuing education opportunities offer additional training to active ministers. Some Christian colleges and seminaries offer workshops on technology in ministry at their annual minister's conferences. In several instances ministerial meetings on a district or conference level include workshops on available technology. Christian Computing magazine sponsors several expositions annually which include multiple workshops in areas such as church management software, internet use, multimedia, church web site design, and demonstrations of numerous church software applications. Some church software companies (e.g., Cokesbury Electronic Publishing, Shelby Systems, Automated Church Systems, and Suran Systems) provide training in the form of printed tutorials, on-site training visits, and regional training seminars.

Research uncovers limited information about the design of the aforementioned training opportunities and how best to instruct ministers about technology. Using resources from education, a related field, provides tools for developing guidelines for instruction. Using research from the field of education, the following portion of the literature review focuses on theory

and technique of instructional design which generalizes to the training of ministers in technology.

Instructional Design for Training in Technology

Instructional design requires consideration in the planning, implementation, and evaluation of a workshop intended to train ministers in the use of technology in ministry. Instructional techniques used prior to the influx of technology in our society do not suffice. Some still hold a dominant view that teaching is primarily the flow of information from teacher to student, particularly through lecture, instead of the development of problem-solving abilities and skills (Shlechter 62). Computer-based simulations are effective instructional methods and can be especially productive in teaching ministers computer skills related to ministry (Shlechter 62). Models of instruction proven effective in technological training demand integration into a workshop of this nature.

Theory Used in Technology Instruction

Technology instruction relies on a portion of cognitive learning theory, *constructivism*. Perkins describes constructivism in the following manner: "Central to the vision of constructivism is the notion of the organism as 'active'. . . engaging, grappling, and seeking to make sense of things" (qtd. in Poole 405). "Constructivism is a view of learning and development that emphasizes the active role of the learner in building understanding and making sense of the world" (Eggen and Kauchak 53). The linking of new

knowledge to previously acquired knowledge in the student characterizes constructivism. The constructivist teacher moves from lecturing to providing opportunities for students to engage in inquiry and problem solving (53). By employing a constructivist learning theory in technology instruction, the student's ability to learn and discover extends beyond classroom experiences (Jonassen, 12).

In Debon's Knowledge Spectrum, he identifies the stages experienced by the learner in constructing technological information (qtd. in Poole 407). Debon's model describes the learning construction process which progresses from data with little meaning to meaningful information and understanding which integrates the learner's educational experience and personal values. Characteristics of constructivism include the following: learners construct their own understanding, new learning depends on current understanding, learning is facilitated by social interaction, and meaningful learning occurs within authentic learning tasks (Eggen and Kauchak 280-281). Due to the rapid changes in the field of technology, constructivist theory or the learner's ability to extend educational experiences and learn independently provides a framework for the development of technology instruction.

Design of Technology Instruction

Technology instruction is the bridge between the rudiments of instructional design and the practical tasks which are to be accomplished in the training process (Newby, Stepich, Lehman, and Russell 15). P.L. Smith

and T.J. Ragan define instructional design as “the systematic process of translating principles of learning and instruction into plans for instructional materials and activities” (2). Instructional design is a process by which a specific instructional program is developed to accomplish a desired instructional task (Venezky and Osin 97).

Important to any instructional lesson is the sequencing. Effective lessons are similar to good stories with a beginning, middle, and end. This same lesson sequencing occurs in the instructional design for this study. The beginning arouses interest and establishes the basic framework giving students an overview including what activities will occur. Details and examples are given as the lesson objective is expanded and developed in the middle through presentation and demonstration. Simulation and application occur in the middle. The ending brings closure through discussion, comment, and preparation for the next lesson (Briggs, Gustafson, and Murray 179-181).

Dick and Carey provide the following systems approach model as a framework for making sequencing and design decisions related to instructional design.

1. Identify an instructional goal.
2. Conduct an instructional analysis.
3. Identify entry behaviors and characteristics.
4. Write performance objectives.
5. Develop criterion-referenced tests.

6. Develop an instructional strategy.
7. Develop and select instruction.
8. Design and conduct the formative evaluation.
9. Revise instruction.
10. Conduct summative evaluation (8-11)

Instruction is divided into four decision-making phases: (1) planning--preparation for class; (2) teaching--actual instruction in class; (3) evaluating--evaluation of teaching event; (4) application--making decisions about subsequent teaching actions (Kellough 97).

Newby includes the first three of these phases and states the purpose of instructional design is to provide an overall strategy for the development of a course or workshop which includes reflection on planning, implementation, and evaluation (Newby et.al., 14). These phases will be considered in the context of a course design intended for technology training for ministers.

Planning. The planning phase centers on three key components:

1. what tasks students must be able to do
2. what students already know that will help in learning these tasks
3. what activities are needed to teach these tasks (Newby, et.al., 14)

First, any course design establishes goal setting as the starting point. In the field of education, certain goals or benchmarks in technology are defined for students in teacher preparation programs. These goals or benchmarks represent certain competencies that professional educators must possess to perform their teaching duties. In like fashion, to train ministers in

technology certain goals or benchmarks must be established which parallel education benchmarks. Examples of such goals are:

- ability to operate a personal computer system
 - ability to set up and operate peripherals
 - ability to use productivity software
 - ability to use presentation software
 - ability to use telecommunications software
- (Northrup and Little 218)

Second, due to limited research, what students already know that will help in learning these tasks may be determined through informal interviews with a cross-section of ministers and a pre-class evaluation of the learners in the class.

Third, the areas for which activities need to be included to teach the previously mentioned course goals have been developed, in part, through a perusal of Christian Computing and Scroll (formerly Church Bytes) magazines. Activities should be developed in each of the following areas:

- word processing
- desktop publishing
- telecommunications
- music
- multimedia
- hardware options
- research systems
- Bible study
- language study
- internet access
- counseling
- church administration
- worship
- Christian education

Given consideration to the key elements of planning in course design, the implementation phase follows.

Implementation. This phase focuses on methodology, learner characteristics, and practical activities employed during technology instruction. The ASSURE model provides an overall structure for instructional methodology (Heinich, Molenda, Russell, and Smaldino 34). This model includes six stages, four (stages two to five) of which occur during the implementation phase. They are:

1. **Analyze learners' knowledge level of technology (accomplished during planning phase).**
2. **State objectives indicating what the student should be able to do as a result of instruction.**
3. **Select methods, media and materials to be used during the specific lesson.**
4. **Utilize media and materials within instructional activities.**
5. **Require learner participation and interaction with media and materials.**
6. **Evaluate lesson effectiveness and revise accordingly which occurs during the evaluation phase (34-35).**

Using the ASSURE model as a guide for lesson development, technology instruction requires specialized technique. The Show/Do/Cue teaching technique provides a procedure for successfully accomplishing steps

four and five of the ASSURE model (Schatz 86). Show/Do/Cue steps are as follows:

1. Introduce briefly the software application.
2. Show the class a finished project.
3. Demonstrate the building of a portion of the finished project to give the students a picture of the procedure.
4. Provide step-by-step instructions for completing a task during the computer lab segment of the class.
5. Give students a computer-based tutorial to cue them through the same procedure when in another setting.

This technique insures retention and the student's ability to apply further the skills taught in the class.

During the implementation phase, teaching technology to an adult population requires more than technique. It requires an understanding of adult learning characteristics especially as they apply to software instruction. Practical activities used during software instruction must be selected to correspond with adult learning characteristics (Ference and Vockell 25-31). Ference and Vockell describe fourteen adult learning characteristics, the recognition of which contributes to effective instruction. These characteristics follow:

- active-learner--willing to participate in the learning process

- experienced-based--prior life experience enhances the learning situation
- expert--adults are often experts in many fields
- independent--capable of being self-reliant and accomplishing tasks for themselves
- hands-on--prefers hands-on experiences and learning
- life-centered--tends to focus attention on real-world situations
- task-centered-- goal and solution oriented in task performance
- solution-driven--actively seeks solutions to problems
- value-driven--seeks purpose behind tasks
- skill-seeking--desires new and improved skills to meet and solve problems
- self-directing--desires involvement in planning and directing learning activities
- motivation (external)--motivated by career opportunities
- motivation (internal)--motivated by personal improvement opportunities (FERENCE and VOCKELL 25)

By considering these adult learning characteristics in technology instruction, practical activities become more effective (FERENCE and VOCKELL 25). For example, considering adults' problem-solving capabilities, activities

which incorporate “what-if” scenarios provide valuable learning opportunities. An example of a “what-if” activity for ministers is as follows:

Scenario: What if you needed to notify a church committee about an important called meeting? What would you do?

Student Response: *Solutions could include the generation of personalized correspondence through sophisticated church management software or through the word processing mail merge function. PhoneTree could also be used to make personalized calls.*

Another example which captures the adult’s characteristic of life-centeredness is the proposing of a question relevant to a real-life situation.

Scenario: How would you handle a church contribution check returned for insufficient funds? How do you handle the recording of the transaction and the notification of the individual?

Student response: *Possible solutions would incorporate accounting software in this step-by-step procedure:*

- 1. Make a general ledger entry debiting check amount against the income number to which it was originally credited.*
- 2. Adjust individual’s contribution record.*
- 3. Return check to individual with a gracious explanation.*

If the unique learning characteristics of adults are considered during technology instruction, enhancement of in-class learning and improvement of out-of-class retention occurs.

Evaluation. The last phase of instructional design focuses on evaluation. A technique or instrument determines if the original class goals were attained. Evaluation should include a measure of the overall effectiveness, efficiency, and appeal of the instruction (Newby, et.al. 14). For the purposes of this study, a post-class evaluation instrument may be administered to measure instructional effectiveness, course goals, and the relevancy of course activities. Informal video interviews with participants may provide additional supportive data.

Learning Styles

Most people develop styles of learning that emphasize some learning abilities over others because of heredity, past life experiences, and the influence of present environment (Kolb, "Learning Styles" 227). Some individuals learn better through abstract concepts and others through concrete experience (McCarthy 26). Everyone develops unique learning styles with both strong and weak preferences. Even though individuals become more reflective and analytical as they mature, people seem to develop consistent cognitive styles that remain with them for life (Kolb, "Learning Styles" 227).

David A. Kolb developed a brief inventory measuring learning style differences along two dimensions: abstract-concrete and active-reflective (Kolb, "Learning Styles" 227). Along the dimension of abstract-concrete, areas of perception related to thinking and feeling are addressed (McCarthy 21). Processing what we learn falls along the continuum of active-reflective, involving doing or watching (21). From these two dimensions emerge four basic learning styles which are prevalent among persons taking the Learning Style Inventory or LSI (Kolb, "Learning Styles" 228). Basic learning styles fall under four categories titled as follows: Converger, Diverger, Assimilator, and Accommodator (228).

Convergers demonstrate abstract conceptualization and active experimentation as their dominant learning abilities (McCarthy 26). Strength in the practical application of ideas belongs to convergers and they seem to prefer dealing with things rather than people, often appearing unemotional (Kolb, "Learning Styles" 228).

Divergers are the opposite of convergers displaying strength in concrete experience and reflective observation (McCarthy 26). They are characterized by the ability to brainstorm and generate ideas as well as displaying good people skills (Kolb, "Learning Styles" 228).

Assimilators are able to create abstract models and display the dominant learning traits of abstract conceptualization and reflective

observation (228). They set goals, plan systematically, and seem disinterested in the practical use of theories (McCarthy 26).

Opposite from assimilators are accommodators exhibiting strength in concrete experience and active experimentation (Kolb, "Learning Styles" 228). Adaptive, intuitive, and at ease with people describe persons with this learning style (McCarthy 26). They enjoy doing things, getting involved with new experiences, and are willing to take risks. They are good in situations where present circumstances call for adaptation and often find themselves in action-oriented jobs (Kolb, "Learning Styles" 228).

Learning styles may affect a person's ability to gain additional knowledge and develop skills in the area of technology. Consideration should be given to learning styles when designing and planning a course in technology for ministry. Some teaching methodologies may prove more effective depending on the student's particular learning style.

Conclusion

In preparation for this study the literature review provided an overview of available resources in technology for ministry; addressed philosophical, theological, and ethical concerns with technology; discussed the integration of technology into the life and ministry of the church; and explained the development of instructional design as it might relate to the creation of a course for the training of ministers in the use of technology. In addition, this review revealed the lack of current research in this area. This

could be due in part to the transition into the information age in which we find ourselves. One gap in the research is the lack of an adequate model for the training of ministers in technology. The upcoming project, supported by this literature review, addresses this need and includes a detailed model for such instruction.

Table 2-3 illustrates the relationship between workshop components and anticipated changes in knowledge, skill, and attitude of the participants. The table includes the workshop sections along with knowledge, attitude, and skill objectives and the instructional strategies to be employed. The combination of content and teaching strategies should produce the desired changes in workshop participants.

Table 2-3
Workshop Components, Strategies and Objectives

Workshop Section	Instructional Strategies	Knowledge	Attitude	Skill
Publication	Presentation Demonstration Simulation Discussion	Express purpose and identify steps of mail merge and newsletter production	Express or show more comfort with mail merge and newsletter production	Produce mail merge letter and formatted newsletter
Presentation	Presentation Demonstration Simulation Discussion Discovery	Express purpose and identify steps of PowerPoint slide production and use of media in worship	Express or show more comfort with PowerPoint slide production and media in worship	Produce PowerPoint slide
Communication	Presentation Demonstration Simulation Discussion Discovery	Express purpose and identify steps of internet access, bookmark placement, and e-mail usage	Express or show more comfort with internet access, bookmark placement, and e-mail usage	Access particular internet sites and place a bookmark Compose & send e-mail
Research	Presentation Demonstration Simulation Discussion Problem-Solving	Express purpose and identify steps of Bible study and resource management software usage	Express or show more comfort with Bible study and resource management software usage	Do search in Bible study software and enter and print search report of personal resources
Administration	Presentation Demonstration Simulation Discussion Problem-Solving	Express purpose and identify steps of church management software data entry and report generation	Express or show more comfort with church management software data entry and report generation	Enter membership and financial records and produce reports

CHAPTER 3

Design of the Study

This chapter describes the design of the study. Included are descriptions of the following major method components: purpose of the study, restatement of the operationalized research questions, description of the project, description of subjects, explanation of the study instruments, discussion of the independent and dependent variables, explanation of data collection procedures, and discussion of data analysis procedures.

Purpose of the Study

The purpose of this study was to design, implement, and evaluate a workshop to train ministers in the use of technology in ministry. Through pre- and post-assessment, the benefit of the workshop instruction to ministers in the field and students in training was explored.

The benefit of this project was measured through workshop effectiveness ratings. Workshop effectiveness entails personal growth of the participants and their evaluation of the workshop itself. The personal growth of the participants is measured by a pre- and post-instrument in the areas of knowledge, skill, and attitude. Workshop evaluations completed by the participants assess workshop design, content, and methodology.

Research Questions

The following research questions guided the proposed research study through the stages of planning, implementation, and evaluation:

Research Question #1: What kind of knowledge, skill, and attitude changes, as measured by a pre- and post-instrument, occur in the individuals who participated in the workshop on technology in ministry?

Currently, over fifty percent of churches in America have a computer (Anfuso & Loveless 1994). Subsequently, many ministers own or have access to a computer; but due to a lack of formal training many use it only in minimal ways. One of the purposes of the workshop focuses on increasing the pastors' awareness of and comfort with technology usage in ministry. Using the pre- and post-workshop survey, a mean increase in any one or all of the three categories (i.e., knowledge, skill, and attitude) suggests an increase in the awareness of and comfort with the technology.

The following operational questions isolate the three categories of assessment (i.e., knowledge, skill, and attitude) on the pre- and post-survey instrument and address each of the five content areas (i.e., publication, communication, presentation, research, and administration).

Operational Question 1: How did the scores on the pre- and post-assessment vary based upon factors related to knowledge acquisition?

Operational Question 2: How did the scores on the pre- and post-assessment vary based upon factors related to technological skill?

Operational Question 3: How did the scores on the pre- and post-assessment vary based upon factors related to attitude change?

Research Question #2: What aspects of the course design, content, and methodology were associated with high satisfaction ratings of the participants on the post-workshop assessment measure?

Another purpose of the workshop emphasizes the effectiveness of the instructional methods used to train ministers in the area of technology usage. For this study, course design, content, and methodology define workshop effectiveness. The post-workshop satisfaction survey measures each effectiveness area in this manner:

Effectiveness Term	Assessment
Course Design	Organization of Workshop Overall Layout of the Course Lab Session Classroom Session Areas of Technology Addressed
Course Content	Types of software presented: <ul style="list-style-type: none"> • Word processing • Internet access and e-mail • Presentation • Research tools • Church management
Course Methodology	Leader preparation of workshop Presentation techniques of leader Demonstration techniques of leader Lab techniques of leader Leader response to participants Leader’s knowledge level of content Workshop materials & handouts

The following operational questions dissect the effectiveness areas (i.e., design, content, and methodology) evaluated on the post-workshop satisfaction instrument.

Operational Question 1: How did the participants rate the effectiveness of the workshop design?

Operational Question 2: How did the participants rate the appropriateness of the workshop content?

Operational Question 3: How did the participants rate the effectiveness of the workshop methodology?

Research Question #3: What effect does the participant's learning style based on the Kolb Learning Style Inventory have on the changes exhibited in knowledge, skill, and attitude in technology for ministry?

Consideration of individual learning styles guides the choice of incorporated teaching methodologies to provide the most meaningful and beneficial learning experience for all participants. The Kolb Learning Style Inventory provides data about participants' learning styles which is taken into consideration during course implementation. Following the class, data analysis determines the effect of the participants' learning styles on their growth rates related to attitude, knowledge, and skill.

Operational Question 1: How did the participants' learning style affect their growth related to knowledge acquisition?

Operational Question 2: How did the participants' learning style affect their growth related to technological skill?

Operational Question 3: How did the participants' learning style affect their growth related to attitude change?

Methods

This portion of the chapter outlines a description of the project divided into three main subheadings. The first subheading addresses the experimental design used in the project. In the second subheading information concerning the conference workshop and its contents are discussed. Data collection procedures appear last.

Experimental Design. Due to the nature of this project, a pre-experimental design, One Group Pretest-Posttest Design, was chosen (Creswell 132). This design uses a pretest, treatment, and posttest for a single group and does not include a control group to compare to the experimental group. The notation form for this study follows:

01-----X-----02

Pretest-----Treatment-----Posttest

Pre-Workshop Test-----Workshop-----Post-Workshop Test

Workshop Design and Development. The workshop is designed to help meet the need for training in the use of technology in ministry. It is not intended to provide direct instruction in all applications of technology in

ministry but to increase participant capacity in knowledge, skill, and comfort level. A workshop description, overview, and outline follow.

Conference Workshop Description

This nine-hour workshop addresses technology tools for ministry. It is designed for individuals actively involved in ministry or in training for ministry. Areas covered by the workshop include publication, presentation, research, administration, and communication. Within each of these areas, software options are explored in an interactive setting. Interactive opportunities include the following types of software applications: word processing, desktop publishing, internet access, presentation software, personal resource management, research resources, and church administration. Participants receive a workshop guide, software demos, copies of periodical literature related to technology, and written products designed during the workshop.

Conference Workshop Overview

The overview of the workshop consists of these components: introductory comments, pretest, and workshop outline for both sessions including the workshop guide. Presentation software (PowerPoint) provides the delivery method for the workshop outline.

<u>Time Frame</u>	<u>45 minutes</u>
Introductory comments	15 minutes
Pretest & General Data Sheet	20 minutes
Workshop outline	10 minutes

The workshop includes two sessions (Session I and II) of four and one-half hours each. At the beginning of Session I, a pretest given to participants determines their level of knowledge, skill, and attitude toward technology in ministry. In addition, participants complete a General Data Sheet to obtain appropriate demographic information. At the conclusion of the workshop, a posttest given to participants measures growth in the areas of knowledge, skill, and attitude and evaluates the satisfaction level of the workshop content, design, and methodology.

Session I includes the introduction, demonstration, participation, and experimentation for these workshop sections: publication, presentation, and communication. Session II includes the introduction, demonstration, participation, and experimentation for these workshop sections: research and administration. The following table outlines the sections of the workshop sessions:

<p style="text-align: center;">Session I Workshop Sections</p>	<p style="text-align: center;">Session II Workshop Sections</p>
<p style="text-align: center;">Overview & Pretest Publication Presentation Communication</p>	<p style="text-align: center;">Research Administration Conclusion & Posttest</p>

Appendix B provides a general overview of the workshop and an overview for each workshop section detailing objectives, lesson plan,

instructional strategies, and assessment. Each of these workshop sections contains the specific knowledge, attitude, and skill components.

Conference Workshop Outline

Overview - Pretest (45 minutes)

I. Publication

This area addresses word processing and mail merging.

Time Frame: 1 hour 30 minutes

Introduction

- Description of various uses of word processing in the church

Demonstration

- Show examples of correspondence, newsletters, and bulletins

Participation

- Expose participants to Microsoft Word

Experimentation

- Edit a newsletter
- Complete a mail merge letter

II. Presentation

This area addresses the use of presentation software in ministry.

Time Frame: 1 hour 30 minutes

Introduction

- Description of various uses of presentation software in the church

Demonstration

- Show examples of slides for worship, preaching, and education.

Participation

- Expose participants to Microsoft PowerPoint

Experimentation

- Create a slide for a worship hymn or sermon outline

III. Communication

This area addresses internet access and usage.

Time Frame: 45 minutes

Introduction

- Describe internet options for the minister

Demonstration

- Show examples of internet sites beneficial for ministry

Participation

- Log-on to various internet sites

Experimentation

- Do a bookmark on a helpful site

IV. Research

This area addresses personal resource management for ministers.

Time Frame: 1 hour 30 minutes

Introduction

- Describe software to help with the management of personal resources and outside research for Bible study and sermon preparation

Demonstration

- Show examples of personal resource cataloging and retrieval and Bible study software capability

Participation

- Expose participants to PRM+ and various Bible software programs

Experimentation

- Create a personal resource report
- Complete a phrase search and view in various translations in Bible study software

V. Administration

This area addresses membership, contributions, and finance as they relate to church administration.

Time Frame: 2 hours 30 minutes

Introduction

- Describe various church management software programs available

Demonstration

- Show examples of the capabilities of those church management software programs

Participation

- Expose participants to a church management software program

Experimentation

- Update financial information and print report
- Enter a visitation record and print report

Conclusion - Posttest (30 minutes)**Subjects**

The subjects involved in this study come from a self-selecting group of ministers and students in attendance at the 1998 Minister's Conference at Asbury Theological Seminary. Conference attendees chose seminars they wish to attend. The ministers and students who participate in the seminar on Technology in Ministry do so by choice based on personal interest or need. Similarities among seminar participants include graduates of an undergraduate program, ordained ministers or those in the process of seeking ordination, individuals involved in some level of ministry, and conference registrants. Seminar participants vary in gender, age, denomination, locale, pastoral experience, graduate education experience, and computer expertise.

Instrumentation

The two assessment instruments used in this study are designed by the researcher. Both instruments use these five workshop content categories (i.e., publication, communication, presentation, research, and administration) to measure participants' knowledge, skill, and attitude levels toward

technology in ministry. Pre-workshop evaluation includes the administration of the Kolb Learning Styles Inventory. The post-workshop instrument includes additional information on participant satisfaction with workshop design, content, and methodology. A general data sheet provides participant demographic information. Informal video interviews with participants and the standard evaluation form provided by the seminary provide additional supportive data.

Pre-Workshop Survey. Appendix C includes a copy of the Pre-Workshop Survey. To assess the participant's technological knowledge, skill, and attitude three different Likert type scale formats are used. In the instrument the Likert type scales appear in the following order: attitude, knowledge, and skill. A person's attitude toward technology in ministry affects their knowledge or willingness to learn and impacts the skill level subsequently developed. This rationale supports the Likert type scale order on this instrument.

The first Likert type scale measures attitude about the general use of technology in ministry across the five workshop content categories. Fourteen close-ended questions (Fink and Kosecoff 27) are measured on a scale of one to five, using the following descriptors:

- | | | |
|---|---|-------------------|
| 1 | - | Strongly Disagree |
| 2 | - | Disagree |
| 3 | - | No Opinion |
| 4 | - | Agree |
| 5 | | Strongly Agree |

The second Likert type scale measures knowledge levels about specific uses of technology in ministry across the five workshop content categories. Twenty-five close-ended questions (27) are measured on a scale of one to five, using the following descriptors:

1	-	No knowledge
2	-	Little knowledge
3	-	Some knowledge
4	-	Much knowledge
5	-	Extensive knowledge

The third Likert type scale measures skill levels of various software applications for technology in ministry across the five workshop content categories. Twenty-three close-ended questions (27) are measured on a scale of one to five, using the following skill levels and descriptors:

Beginner	1	-	No experience (never uses)
Novice	2	-	Little experience (seldom uses)
Amateur	3	-	Some experience (occasionally uses)
Expert	4	-	Moderate experience (often uses)
Master	5	-	Extensive experience (always uses)

Post-Workshop Survey. Appendix D includes a copy of the post-workshop survey. The post-workshop survey contains the same two Likert type scale formats for measuring growth in knowledge and attitude, but the skill measurement scale differs in its descriptors as listed:

Beginner	1	-	No experience (will never use)
Novice	2	-	Little experience (will seldom use)
Amateur	3	-	Some experience (will occasionally use)
Expert	4	-	Moderate experience (will often use)
Master	5	-	Extensive experience (will always use)

In addition, this instrument measures participant satisfaction with workshop design, content, and methodology. Seventeen close-ended questions are measured on a scale of one to five, using the following descriptors:

1	-	Strong dissatisfaction
2	-	Moderate dissatisfaction
3	-	Neutral
4	-	Moderate satisfaction
5	-	Strong satisfaction

Of the seventeen close-ended questions (27), Questions one through four and question eleven measure workshop design effectiveness. Questions five through ten evaluate workshop content and Questions twelve through seventeen assess workshop methodology. Four additional open-ended survey items provide participant recommendations for improvement of workshop design, content, and methodology. The open-ended survey items (27) are:

What did you find most helpful about the workshop?
 What did you find least helpful about the workshop?
 What do you wish had been included in the workshop?
 List one improvement you would make in the workshop.

General Data Sheet. Appendix E contains the General Data Sheet which provides demographic information about the workshop participants. Using a checklist format, participants furnish data in these areas:

- gender
- age
- ministry employment status
- average worship attendance
- church setting

- denomination
- experience in ministry
- number of computers owned
- number of computers at the church
- years of experience with computers
- on-line use of computers
- listing of software applications currently used

Instrumentation Validity and Reliability

To insure the reliability and validity of the pre- and post-workshop surveys, a validation study in the form of an expert review was proposed (50). Since the post-workshop survey contains all the items of both instruments, it is the only assessment tool used in the validation study. For the purposes of the validation study, copies of the workshop description and outline, and the post-workshop survey were distributed for the students to evaluate. Students in the *Instructional Media in the Church* class at Asbury Theological Seminary in the summer of 1997 reviewed the entire instrument, compared its content to the workshop outline, and provided written feedback on the instrument concerning its clarity, format, and relevancy. Reliability is assured by addressing issues of survey clarity and format. Validity concerns focus on the relevancy of the instrument and its reflection of the topics offered in the workshop.

Independent and Dependent Variables

The independent variable for this study is the conference workshop. A description and outline of the conference workshop appeared previously in this chapter. Controls for internal consistency result from the planning

process and implementation methodology used in the conference workshop. The intentional effort to produce a prescribed workshop curriculum establishes parameters to assure the effects of the treatment.

The cause and effect relationship of the independent variable upon the dependent variable yields these dependent measures: changes in technological knowledge, skill, and attitude and the satisfaction data on the workshop design, content, and methodology. The extent to which change can occur in knowledge, skill, and attitude is restricted by the limited duration of the workshop and the experience levels of the participants. Participants' workshop expectations, various levels of experience, and ministry context confound satisfaction ratings. The workshop scope and process were structured to provide better controls for generalizability.

Data Collection Procedures

The implementation of two assessment instruments provide pre- and post-treatment data. Both assessments use a Likert type scale format. The pre-workshop survey (pretest) administered prior to any instruction addresses the knowledge, skill, and attitude levels of the participants related to technology in ministry. This survey specifically addresses research question one and provides data on the entry level of the participants. The post-workshop survey (posttest) administered following instruction addresses the change in knowledge, skill, and attitude levels of the participants related to technology in ministry. This survey addresses both research questions by

measuring the change in the participants' technological knowledge, skill, and attitude and their satisfaction level with the workshop design, content, and methodology. A general data sheet administered prior to instruction provides personal and demographic data on workshop participants. Pre-workshop evaluation includes the administration of Kolb's Learning Style Inventory. Informal video interviews and the minister's conference evaluation form provide additional data. This information, combined with pre- and post-test results, provides a framework for data analysis and discussion of findings.

Data Analysis

Growth in knowledge, skill, and attitude on survey Likert type scale items on the pre- and post-instruments were depicted by t-Test scores. Extent of growth was evaluated in light of participants' Kolb LSI profile based on an analysis of variance to determine correlation between individual learning style and growth rate. Effectiveness data of the workshop design, content, and methodology result from the mean scores of the satisfaction levels of the Likert type scale items. A decision rule (i.e., mean scores above three are judged effective) was used to determine the overall effectiveness of the workshop. Open-ended item responses are categorized and tallied to further evaluate workshop effectiveness and offer additional information for further studies. Supplemental data emerges from the informal video interviews following the completion of the workshop. Information from the general

data sheet provides numerical data to be scored by frequency tallies. This information expands the background data for this study and provides support for the analysis of results.

CHAPTER 4

Findings of the Study

The purpose of this study was to design, implement, and evaluate a workshop to train ministers in the use of technology in ministry. The workshop was delivered at the 1998 Minister's Conference at Asbury Theological Seminary. Through pre- and post-assessment instruments completed by workshop participants, ministers in the field, and students in training, the benefit of the instruction related to workshop design, content, and teaching methodology will be explored. In addition, a correlation will be drawn between the participants' particular learning styles, based on the Kolb Learning Style Inventory and the improvement in attitude, knowledge, and skill realized through participation in the workshop.

This chapter contains the presentation, analysis, and interpretation of the data collected through the pre- and post-assessment instruments and responses to the research questions in the order of their presentation in Chapter three. The first research question examines the changes in knowledge, skill, and attitude, as measured by pre- and post-assessment instruments, which occur in the individuals who participated in the workshop. One of the purposes of the workshop focuses on increasing the participants' awareness of and comfort with technology usage in ministry. Research question two seeks to determine the participants' level of satisfaction with the workshop design, content, and methodology. Another

purpose of the workshop emphasizes the effectiveness of the instructional methods implemented to train ministers in the area of technology usage.

Included in this chapter is a description, plus demographic data of the self-selecting population who participated in the Minister's Conference workshop. In addition to this demographic data, an evaluation of each participant's learning style is included based on the Kolb Learning-Style Inventory administered at the beginning of the workshop. Correlations are drawn between a participant's learning style and changes in attitude, knowledge, and skill occurring as a result of the workshop as well as satisfaction level with course design, content, and methodology.

Data collection occurred in accordance with the methodology and procedures described in Chapter 3. Using the statistical package Stat Pack Gold, means, standard deviations and t-Test scores were calculated for pre-post comparisons of attitude, knowledge, and skill levels. The calculation of percentage scores provided an overview of the participants' satisfaction level with multiple elements of the class. Statistical analyses took place at Asbury Theological Seminary under the direction of the Doctor of Ministry office.

This chapter contains five subsections to more clearly present the findings and responses to the research questions. The first subsection, "Attitude, Knowledge, and Skill," examines Research Question 1 along with its operational questions listed below:

Operational Question 1: How did the scores on the pre- and post-assessment vary based upon factors related to knowledge acquisition?

Operational Question 2: How did the scores on the pre- and post-assessment vary based upon factors related to technological skill?

Operational Question 3: How did the scores on the pre- and post-assessment vary based upon factors related to attitude change?

Subsection two, "Workshop Satisfaction Ratings," responds to Research

Question 2 along with the following operational questions:

Operational Question 1: How did the participants rate the effectiveness of the workshop design?

Operational Question 2: How did the participants rate the appropriateness of the workshop content?

Operational Question 3: How did the participants rate the effectiveness of the workshop methodology?

Subsection three, "Learning Styles," responds to Research Question 3

along with the following operational questions:

Operational Question 1: How did the participants' learning style affect their growth related to knowledge acquisition?

Operational Question 2: How did the participants' learning style affect their growth related to technological skill?

Operational Question 3: How did the participants' learning style affect their growth related to attitude change?

Sub-section four, "Supportive Workshop Satisfaction Data" provides additional qualitative data in support of the quantitative workshop ratings. In addition, the evaluation results by the seminary for the conference are addressed.

Demographic data on participants make up sub-section five, "Participants Demographics." This data provides contextual information about participants' schooling, ministerial experience, age, gender, and level of technology exposure.

Attitude, Knowledge, and Skill

The study focused on the entry and exit level of the workshop participants' attitude, knowledge, and skill related to technology in ministry. This first section addresses the data analyses of research question one (RQ-1) and its accompanying operational questions one, two, and three (OQ-1.1, OQ-1.2, and OQ-1.3).

RQ-1. What kind of attitude, knowledge, and skill changes, as measured by a pre- and post-instrument, occur in the individuals who participated in the workshop on technology in ministry?

The results indicated significant changes ($p \leq .05$) among all participants in the areas of attitude, knowledge, and skill. Greater increases appeared in the areas of knowledge and skill as noted by significant p scores (.000-.007). In general, these results imply a positive entry-level attitude of participants toward technology in ministry. The greater increases in knowledge and skill indicate the need for the type of exposure and training offered by this seminar workshop.

OQ-1.1. How did the scores on the pre- and post-assessment vary based upon factors related to attitude change?

Significant changes ($p \leq .05$) occurred in ten of fourteen areas designed to measure attitude (Table 4-1), using a five-point Likert type scale ranging from strongly disagree to strongly agree. These significant changes addressed attitudes toward the areas of word processing as a communication tool, internet and e-mail usage, presentation software, research capability, and church administration. Of the four items failing to demonstrate significant changes, participants exhibited high entry-level attitudes (pre-test means of 4.42 to 4.84) on three items leaving little room for change. The remaining item failed to show significant change due to a lack of clarity in the wording of the question. This inference is based upon participants' comments during the assessment.

OQ-1.2. How did the scores on the pre- and post-assessment vary based upon factors related to knowledge acquisition?

Knowledge acquisition (Table 4-2) covered five areas which are publication, presentation, communication, research, and administration. Using a five-point Likert type scale ranging from no knowledge to extensive knowledge, twenty-three items provided an analysis of the participants' pre and post knowledge level. Of the twenty-three items used to evaluate pre and post knowledge level in these five areas, twenty-two of the items showed significant changes based upon p scores less than or equal to .05. These twenty-two items revealed p scores ranging from .000 to .007 which indicates high levels of increased knowledge. The one item failing to show significant

TABLE 4-1

Changes in Pre-Test, Post-Test Scores on Attitude Toward Technology

Attitude Items	Pre-Test		Post-Test		t	p ≤ *
	Mean	SD	Mean	SD		
1-Word processing is a valuable tool in generating printed material for the church.	4.84	.37	4.90	.30	1.00	.163
2-The use of word processing increases communication within the church	4.52	.57	4.81	.40	3.50	.001*
3-The internet provides valuable resources for ministry.	4.16	.69	4.74	.46	4.81	.000*
4-The internet provides new possibilities for ministry.	4.19	.65	4.71	.46	4.25	.000*
5-E-mail increases communication within the church and among churches.	4.23	.92	4.65	.55	3.05	.002*
6-Computer-generated transparencies and/or PowerPoint slides improve teaching and preaching effectiveness.	4.17	.89	4.58	.62	3.54	.001*
7-The computer can help the minister catalog and retrieve personal resources.	4.42	.67	4.58	.56	1.31	.101
8-Bible study software improves the quality of preaching and teaching.	4.03	.80	4.39	.76	2.08	.023*
9-Resource management and Bible study software reduce the time needed for quality preparation.	3.74	.86	4.45	.77	4.21	.000*
10-The computer is a valuable tool in maintaining and monitoring membership and visitation records.	4.45	.62	4.74	.51	2.75	.005*
11-Tracking attendance and following up absentees and visitors are easier with church management software.	4.26	.68	4.65	.55	2.56	.008*
12-Maintaining and reporting from financial records is faster and more accurate with church management software.	4.23	.76	4.55	.51	2.56	.008*
13-Technology is a valuable tool for ministry.	4.65	.55	4.74	.45	1.14	.132
14-Inappropriate uses of technology undermine technology.	3.61	1.12	3.97	1.14	1.69	.051

* p ≤ .05, 1-tailed

TABLE 4-2

Changes in Pre-Test, Post-Test Scores on Knowledge of Technology

Knowledge Items	Pre-Test		Post-Test		t	p ≤ *
	Mean	SD	Mean	SD		
Rate your knowledge level in the use of <u>word processing</u> to produce:						
1-Correspondence	3.84	.82	3.90	.87	.63	.268
2-Worship bulletins	3.33	1.16	3.70	.95	2.63	.007*
3-Newsletters	3.29	1.07	3.77	.92	3.17	.002*
4-Mail merge	1.87	1.06	3.39	.84	8.78	.000*
5-Text and graphic combinations	2.42	1.26	3.19	1.14	4.88	.000*
Rate your knowledge level in the use of <u>communication</u> technology and software to:						
6-Access data through internet	2.65	1.33	3.68	.95	5.85	.000*
7-Send & receive e-mail	3.32	1.45	3.94	.89	3.57	.001*
8-Locate internet links	2.45	1.39	3.52	1.15	6.38	.000*
9-Place bookmarks	2.19	1.47	3.32	1.35	5.11	.000*
10-Use on-line library services	1.55	.89	2.77	1.23	5.81	.000*
Rate your knowledge level in the use of <u>presentation</u> software to:						
11-Produce computer-generated transparencies	1.65	.88	3.23	.99	7.87	.000*
12-Produce PowerPoint slides	1.36	.71	3.29	.90	12.08	.000*
13-Make effective use of projection equipment	1.45	.72	2.87	1.09	6.72	.000*
Rate your knowledge level in the use of <u>research</u> tools to:						
14-Catalog personal resources	1.94	1.09	3.32	.95	6.15	.000*
15-Retrieve personal resources	2.03	1.11	3.36	1.02	5.66	.000*
16-Search & study the Bible	2.48	1.36	3.45	1.06	6.16	.000*
Rate your knowledge level in the use of <u>church management</u> software to:						
17-Maintain membership records	2.03	1.20	3.26	.93	6.28	.000*
18-Monitor visitation	1.77	1.12	3.29	.94	7.53	.000*
19-Track attendance	1.87	1.15	3.26	.97	6.74	.000*
20-Follow up absentees & visitors	1.90	1.17	3.23	.96	6.03	.000*
21-Record contributions	1.90	1.08	3.13	1.02	7.14	.000*
22-Maintain financial records	2.07	1.18	3.03	.95	4.85	.000*
23-Generate financial reports	2.13	1.20	3.03	.95	4.68	.000*

* p ≤ .05, 1-tailed

change occurred in the area of publication where participants were asked to rate their knowledge level in the use of word processing to produce correspondence. A single activity designed to increase knowledge level of correspondence and mail merge produced a significant increase in mail merge but not in correspondence. Obviously, the single activity proved inadequate to raise knowledge levels in both items.

OQ-1.3. How did the scores on the pre- and post-assessment vary based upon factors related to technological skill?

Technological skill (Table 4-3) covered the same five areas and twenty-three items as knowledge acquisition. A five-point Likert type scale ranging from no experience to extensive experience provided the evaluation criteria for the technological skill component of the study. Participants exhibited the highest level of increase in the skill component as demonstrated by *p* scores ranging from .000 to .001 at the .05 significance level on all twenty-three items. These increases covered all five areas of technology addressed, underscoring the appropriateness of the workshop areas included.

Workshop Satisfaction Ratings

This portion of the study examines the participants' satisfaction ratings related to course design, content, and methodology. The focus of this section analyzes the data gathered for research question two (RQ-2) and the accompanying operational questions one, two, and three (OQ-2.1, OQ-2.2, and OQ-2.3).

TABLE 4-3

Changes in Pre-Test, Post-Test Scores on Skill with Technology in Ministry

Skill Items	Pre-Test		Post-Test		t	p ≤ *
	Mean	SD	Mean	SD		
Rate your skill level in the use of <u>word processing</u> to produce:						
1-Correspondence	3.52	.68	4.03	.80	3.54	.001*
2-Worship bulletins	2.97	1.33	3.57	1.31	4.04	.000*
3-Newsletters	2.97	1.02	3.61	1.15	3.53	.001*
4-Mail merge	1.55	.81	3.10	1.14	8.39	.000*
5-Text and graphic combinations	1.97	1.08	3.00	1.32	5.85	.000*
Rate your skill level in the use of <u>communication</u> technology and software to:						
6-Access data through internet	2.45	1.39	3.48	1.09	6.06	.000*
7-Send & receive e-mail	3.07	1.46	3.74	1.00	4.15	.000*
8-Locate internet links	2.19	1.38	3.42	1.21	6.47	.000*
9-Place bookmarks	1.94	1.41	3.26	1.37	6.32	.000*
10-Use on-line library services	1.45	.96	2.71	1.16	7.26	.000*
Rate your skill level in the use of <u>presentation</u> software to:						
11-Produce computer-generated transparencies	1.45	.72	2.71	.94	7.01	.000*
12-Produce PowerPoint slides	1.19	.54	2.77	.92	9.18	.000*
13-Make effective use of projection equipment	1.36	.71	2.55	.96	6.55	.000*
Rate your skill level in the use of <u>research</u> tools to:						
14-Catalog personal resources	1.74	1.03	2.77	1.02	4.03	.000*
15-Retrieve personal resources	1.74	1.03	2.94	1.06	4.75	.000*
16-Search & study the Bible	2.23	1.20	3.13	1.20	4.12	.000*
Rate your skill level in the use of <u>church management</u> software to:						
17-Maintain membership records	1.71	1.07	2.87	1.06	7.52	.000*
18-Monitor visitation	1.58	1.09	2.84	1.00	6.79	.000*
19-Track attendance	1.58	1.09	2.87	1.09	7.66	.000*
20-Follow up absentees & visitors	1.48	.93	2.87	1.02	8.75	.000*
21-Record contributions	1.55	.93	2.77	1.06	7.73	.000*
22-Maintain financial records	1.71	1.07	2.84	1.16	7.43	.000*
23-Generate financial reports	1.71	1.07	2.87	1.20	7.20	.000*

* p ≤ .05, 1-tailed

RQ 2. What aspects of the course design, content, and methodology were associated with high satisfaction ratings of the participants in the post-workshop assessment measure?

Subjects expressed their satisfaction with the seminar along seventeen different dimensions (Table 4-4), utilizing a five-point scale ranging from strong dissatisfaction to strong satisfaction. Overall, subjects were moderately to strongly satisfied with all seventeen factors.

OQ-2.1. How did the participants rate the effectiveness of the workshop design?

Of the seventeen dimensions measuring workshop satisfaction, the first five factors (items 1-5 on Table 4-4) address the effectiveness of the seminar design. The percentage of participants expressing strong satisfaction with these five factors ranged from 67.7 percent to 83.9 percent (Table 4-4). Sixteen to thirty-two percent of participants expressed moderate satisfaction with workshop design. Only one participant, representing 3.2 percent of the responses, indicated moderate dissatisfaction with two of the design factors which were the classroom and lab sessions. No participants indicated strong dissatisfaction along any of the design dimensions. In all, thirty of thirty-one participants expressed moderate to strong satisfaction with the workshop design.

Of the five design factors, items one, four, and five, addressing course layout, workshop organization and included areas of technology, received the highest ratings with 100 percent of the participants expressing moderate or strong satisfaction. Items two and three, addressing the classroom and lab

TABLE 4-4
Seminar Participants' Satisfaction (N = 31)

Satisfaction Items	Strong Dissatisfaction		Moderate Dissatisfaction		Neutral		Moderate Satisfaction		Strong Satisfaction	
	n	%	n	%	n	%	n	%	n	%
1-Overall layout of the course	0	0.00	0	0.00	0	0.00	7	22.6	24	77.4
2-Classroom session	0	0.00	1	3.2	0	0.00	7	22.6	23	74.2
3-Lab session	0	0.00	1	3.2	0	0.00	7	22.6	23	74.2
4-Organization of workshop	0	0.00	0	0.00	0	0.00	5	16.1	26	83.9
5-Areas of technology addressed	0	0.00	0	0.00	0	0.00	10	32.3	21	67.7
Types of software presented:										
6-Word processing	0	0.00	0	0.00	3	9.7	10	32.3	18	58.1
7-Internet access	0	0.00	0	0.00	1	3.2	10	32.3	20	64.5
8-Presentation	0	0.00	0	0.00	1	3.2	9	29.0	21	67.7
9-Research tools	0	0.00	0	0.00	3	9.7	13	41.9	15	48.4
10-Church management	0	0.00	0	0.00	1	3.2	10	32.3	20	64.5
11-Leader preparation of workshop	0	0.00	0	0.00	0	0.00	3	9.7	28	90.3
12-Presentation techniques of leader	0	0.00	0	0.00	1	3.2	3	9.7	27	87.1
13-Demonstration techniques of leader	0	0.00	0	0.00	1	3.2	4	12.9	26	83.9
14-Lab techniques of leader	0	0.00	0	0.00	2	6.5	5	16.1	24	77.4
15-Leader response to participants	0	0.00	0	0.00	0	0.00	4	12.9	27	87.1
16-Leader's knowledge level of content	0	0.00	0	0.00	0	0.00	4	12.9	27	87.1
17-Workshop materials & handouts	0	0.00	0	0.00	1	3.2	3	9.7	27	87.1

sessions, though ranked lower generated moderate or strong satisfaction among 96.8 percent of the respondents.

OQ-2.2. How did the participants rate the appropriateness of the workshop content?

Another five of the seventeen dimensions (items six to ten on Table 4-4) focus on workshop content. Majority percentage scores, ranging from 48.4 percent to 67.7 percent, reveal strong satisfaction in all five areas. In the moderate satisfaction category, percentage scores ranged from 29 percent to 41.9 percent. Unlike workshop design, a range of 3.2 percent to 9.7 percent of the participants remained neutral. No respondents indicated moderate or strong dissatisfaction with any content items. Of the thirty-one participants, a range of twenty-eight to thirty responded with moderate to strong satisfaction with workshop content.

Items seven, eight and ten, related to internet access, presentation, and church management software, received the highest satisfaction ratings in the content area. Although participants gave items six and nine, related to word processing and research software, lower satisfaction ratings, no respondents expressed any dissatisfaction with the inclusion of any of these items.

OQ-2.3. How did the participants rate the effectiveness of the workshop methodology?

The remaining seven of the seventeen dimensions (items eleven to seventeen on Table 4) address workshop methodology. This category received the highest overall ratings with participant percentages in strong

satisfaction ranging from 67.7 percent to 90.3 percent and in moderate satisfaction ranging from 9.7 percent to 16.1 percent. Participants registering a neutral position ranged from 3.2 percent to 6.5 percent. None of the participants indicated any level of dissatisfaction with methodology. Of the thirty-one participants, twenty-nine to thirty-one of them expressed a level of satisfaction with methodology.

Items eleven, twelve, fifteen, sixteen, and seventeen received the highest satisfaction ratings with 87.1 percent to 90.3 percent of the respondents indicating strong satisfaction. Workshop respondents expressed high levels of satisfaction with the instructor's preparation, including workshop materials, presentation techniques, knowledge level, and response to participants. In comparison to the previous factors, items thirteen and fourteen, measuring the leader's demonstration and lab techniques, received the lower satisfaction ratings, yet garnered moderate to high satisfaction rankings.

Learning Styles

As another part of the pre-assessment process, participants completed the Kolb Learning Style Inventory to determine if particular learning styles impacted workshop data. This section provides analysis of research question three (RQ-3) and its corresponding operational questions one, two, and three (OQ-3.1, OQ-3.2, and OQ-3.3) relating the effect of learning style to participants' growth rates in the areas of knowledge, skill, and attitude.

RQ-3. What effect does the participant's learning style based on the Kolb Learning Style Inventory have on the changes exhibited in knowledge, skill, and attitude in technology for ministry?

The Kolb assesses four different learning styles, and the representative percentages of the workshop participants follow:

Level	Learning Style	Participants N=31	Percentages
Level 1	Accommodator	n=12	38.7%
Level 2	Diverger	n=4	12.9%
Level 3	Converger	n=7	22.6%
Level 4	Assimilator	n=8	25.8%

OQ-3.1. How did the participants' learning style affect their growth related to knowledge acquisition?

OQ-3.2. How did the participants' learning style affect their growth related to technological skill?

Participants' pre- and post-assessment responses were analyzed in light of their particular learning style. Differences in change scores were examined by analysis of variance (ANOVA) and four significant differences are noted in Table 4-5. No significant differences in knowledge or skill surfaced related to operational questions one and two.

OQ-3.3. How did the participants' learning style affect their growth related to attitude change?

Out of sixty questions related to attitude, knowledge, and skill, only four questions, all related to attitude, displayed significant differences. Each of the significant differences on the four questions are explored.

Question 3. The internet provides valuable resources for ministry. On this question, accommodators show greater improvement in their perception than convergers. This is the only significant difference in learning styles for this question.

Question 4. The internet provides new possibilities for ministry. Accommodators exhibit greater improvement in their attitude than convergers or assimilators. Likewise, divergers show greater improvement than convergers.

Question 12. Maintaining and reporting from financial records is faster and more accurate with church management software. Convergers demonstrate improvement more so than assimilators; however, accommodators and divergers show greater improvement than convergers.

Question 13. Technology is a valuable tool for ministry. This question reveals how convergers show greater improvement in their attitude than assimilators.

**Table 4-5
Levels of Significance
on the
Kolb Learning Style Inventory**

Study Variables	Comparison of Learning Styles	Comparison of Learning Styles	Comparison of Learning Styles
Q3	Level 1: Level 3 .0033 P ≤ .05	P ≤ .05	P ≤ .05
Q4	Level 1:Level 3 .0027 P ≤ .05	Level 1:Level 4 .0185 P ≤ .05	Level 2:Level 3 .0498 P ≤ .05
Q12	Level 3:Level 4 .0020 P ≤ .05	Level 1:Level 3 .0029 P ≤ .05	Level 2:Level 3 .0194 P ≤ .05
Q13	Level 3:Level 4 .0061 P ≤ .05	P ≤ .05	P ≤ .05

Level 1	Accommodator	n=12
Level 2	Diverger	n=4
Level 3	Converger	n=7
Level 4	Assimilator	n=8

Supportive Workshop Satisfaction Data

In this section additional data related to workshop satisfaction provided by open-response questions on the post-assessment instrument, video evaluations, and the Minister’s Conference Speaker/Lecture Questionnaire is considered. Each of these sources support quantitative workshop instruments and yield additional qualitative data related to workshop satisfaction.

Using the open-response items on the post-assessment instrument, workshop participants responded to four questions related to workshop satisfaction. Qualitative responses to the questions are categorized by a content analysis in Table 4-6 . A brief discussion of the responses to each question follows.

Question 1. What did you find most helpful about the workshop?

Nineteen of thirty-one participants cite the hands-on experience in the lab as the most helpful aspect of the workshop. Other helpful items include resources, materials, skill development, and software and internet exposure.

Question 2. What did you find least helpful about the workshop?

The dominant response to this question indicates that the workshop length needed to be increased to adequately cover content and materials included in the seminar. Several participants provided positive support for the workshop design indicating “everything was helpful.”

Question 3. What do you wish had been included in the workshop?

Several participants indicated their desire to include other software applications such as different word processing programs, Bible study software, Microsoft Windows, and Clip Art. Computer hardware issues also surfaced such items as modems, scanners, and telephone interfaces. A desire for extended workshop length including more lab time was expressed by several participants.

Table 4-6
Content Analysis of
Workshop Satisfaction Open Response Items

Categories of Open-Responses					
Variables	Lab Experiences	Workshop Materials	Knowledge & Skill	Use of Software Applications	Miscellaneous
Question1 What did you find most helpful about the workshop?	Hands-on lab (12) Use of lab (6) Actual time on computer (1)	Resources in packet (1) Manual (1) Materials (2)	Discovering new possibilities (1) Learning & doing (1) Information on data management systems (1) Feel better about my skills (1) Information on variety of topics (1) Personal resource information (1) Discussion/ question time (1) Great mix of classroom learning (1)	“Spruce up publications” (1) Word processing for newsletter (1) Found our web page (1) Software demos (1)	Find out others’ technical level (1) Everything (1)

Categories of Open-Responses				
Variables	Workshop Length	Workshop Content	Workshop Materials	Miscellaneous
Question2 What did you find least helpful about the workshop?	Not enough time (3) Too short (1)	Too much to cover (2) Some material not relevant to my software (1)	Notebook pages need to be numbered (1)	Powerpoint (1) Bible study info (1) Don’t know (1) Repetition from classroom to lab (1) Hard to know how to apply to my computer (1) Want more email and internet experience (2) Everything was helpful (3) Not applicable (2)

Table 4-6 (continued)

Categories of Open-Responses				
Variables	Workshop Software	Workshop Hardware	Workshop Length	Miscellaneous
Question 3 What do you wish had been included in the workshop?	How to for Works and Word Perfect (1) Clip Art (1) Bible software (1) Internet Access Training (1) Windows (1) All the software I have (1)	Church computers (1) Computer components-modem (1) Scanners (2) Computer telephone interfaces (1)	Additional time (2) More computer lab time (2)	Nothing else (3) Helping members to use technology (1) More work on ministry preparation (1)
Categories of Open-Responses				
Variables	No Changes to Workshop	Computer Lab Time	Workshop Materials	Miscellaneous
Question 4 List one improvement you would make in the workshop.	Nothing/None (4) Good as possible (1) Great workshop (1) Difficult to improve (1)	More availability of computers (1) Have computers in classroom (1)	Notebook (1) Page numbers (1)	Information on other software applications (1) Pop available at breaks (1) Demonstration videos (1) More work on ministry preparation (1) Movement from basics to scenarios to application (1) Have two classes (i.e., pre conference and conference seminar - 1)

Question 4. List one improvement you would make in the workshop.

Seven participants indicate complete satisfaction with the workshop and recommended no changes. Others cite a need for more computer availability and lab time.

In summary, the content analysis reveals that the lab time and hands-on experience was of the greatest significance to workshop satisfaction. Twenty-three of the ninety-three responses (25%) related to this aspect of the workshop.

Video evaluations occurred following the conclusion of the workshop. Eight participants volunteered to share their comments concerning seminar effectiveness. A transcript of their comments appears in Appendix F. Each of the participants provided additional positive support for the design, content, and methodology of the workshop. In particular, lab time, workshop materials, and the included technology issues received the most positive reviews.

In addition to the assessment instruments included in this study, the seminary distributed its own evaluation form, the Speaker/Lecture Questionnaire. The quantitative data from this instrument is located in Table 4-7. The questionnaire contained four questions related to speaker presentation and lecture material. Responses were based on a Likert type scale of one to five, with one being the highest. The average scores for all

four questions ranged from 1.18 to 1.38, yielding further support of high workshop satisfaction.

Table 4-7
Minister's Conference Evaluation Instrument
Speaker/Lecture Questionnaire N= 31

Instrument Question	Average Score (Based on Likert Type Scale 1-5, with 1 being the highest)
Speaker: Presentation	1.18
Lecture Material: New Information	1.41
Lecture Material: Practical/Usable Information	1.24
Lecture Material: Useful Review of Material	1.38

1	Excellent
2	Good
3	Average
4	Fair
5	Poor

Participants' Demographics

As part of the pre-assessment instrument, participants completed a general data sheet providing basic demographic information. This information is located in Appendix G. Of thirty-one participants, twenty-eight were male and three were female. Ages ranged from mid-twenties to mid-sixties, with the majority falling between ages thirty and fifty-nine. Twenty-six of the participants were in full-time ministry, and twenty of these were full-time solo pastors. The majority, twenty-eight, were Methodists. Experience in ministry ranged from four years to thirty plus years. All but one participant owned a computer and the majority of churches represented had computers. Computer experience ranged from six months to fifteen

years. Twenty-one of thirty-one participants had access to the internet or e-mail.

Summary of Findings

The three research questions with their corresponding operational questions were designed to evaluate changes in participants' attitude, knowledge, and skill levels as a result of the workshop on technology in ministry. In addition, participants' level of satisfaction with workshop design, content, and methodology was measured. An additional effort was made to uncover any significant correlation between learning style and participants' changes in attitude, knowledge, and skill.

An analysis of the data revealed that participants experienced significant changes in attitude, knowledge, and especially skill as a result of the workshop. Quantitative study data and additional supportive qualitative data indicate a high level of satisfaction among all participants with the seminar's design, content, and methodology. Different learning styles, as revealed by the Kolb, produced significant differences in only four of sixty possible questions. These questions were all associated with the attitude scale. Conclusions and implications of this study are presented in Chapter 5.

CHAPTER 5

Summary, Discussion, Conclusions, and Recommendations

As the new millennium approaches, the Y2K (year 2000) problem has become one of the most common topics addressed by the media. Radio and television ads as well as magazine articles bombard their constituencies with warnings about what might happen when January 1, 2000, arrives. The warnings range from the malfunction of ATM's to the complete shutdown of utility providers including water and electricity. Some people take this problem so seriously they have stocked up enough food to last up to seven years. Whether or not the Y2K problem is as serious as some would intimate, the attention it is receiving indicates just how much we have come to depend on computers and modern technology for our very existence. It touches virtually every area of life and almost everyone depends on computer technology at one time or another. Technology has also become an important and necessary tool for the church if the church is to minister effectively in the twenty-first century.

People today live in a media-sophisticated society, supported and enhanced by technology in ways the previous generation never even dreamed. If the church is going to reach people with the gospel, especially the unchurched, it must make responsible use of current and emerging technology in fulfilling its mission.

Some fear technology and decline to use it. It is often difficult to distinguish between authentic respect for tradition and fear of change. Some profess respect when in reality they are only trying to hide their fear because they feel threatened by technological change which can result in a loss of control of the familiar (Newman 101). If allowed to be the master and not the servant, technology can and would be dangerous; but as a tool, used responsibly, it offers immeasurable opportunities for the advancement of the Kingdom of God in this modern age. It must, however, be used within a strong ethical and moral framework promoting its use for good, not evil.

Technology is a part of God's creation over which humankind has been given dominion. With this opportunity comes the responsibility to be good stewards of what God has entrusted to us. It must be used appropriately to support and advance the mission of the church to reconcile all people to God. A problem emerges in that the inexperienced and untrained cannot use technology appropriately. Therefore suitable training must be provided.

Training is needed on the undergraduate, graduate, and continuing education levels. It must however provide more than information about technology. Those in ministry must learn to use technology to do more than just increase efficiency and productivity in the church office. Technology must be used to enhance the extent and effectiveness of ministry.

Therefore, this chapter presents a synthesis of the results, conclusions, and recommendations emerging from the design, implementation, and

evaluation of a workshop developed to train ministers in the use of technology in ministry. The findings related to the research questions and their related operational questions form the discussion section. Thematic insights and limitations of the study form the basis for the conclusions. These conclusions shape the recommendations, and some final reflections complete Chapter 5.

Summary

The results of the assessment instruments indicated favorable response to the workshop by all participants. Participant response supports the need for technology in ministry and especially the need for training in ministry-related technology. The data emerging from the instruments lends credibility to the workshop and to the teaching style used in the delivery of the material. The high level of increase in participant skill level supports the effectiveness of the lab experience as a desirable teaching method. The lab experience accomplishes the stage of the ASSURE model which requires learner participation and interaction with media and materials (Heinich, Molenda, Russell, and Smaldino 34). This reflects the current move in educational circles to more kinesthetic, or hands-on, learning. The traditional method of presentation and demonstration would prove inadequate in technology training. Learners must learn to apply and use technology through actual experience if they are to make the connections necessary to use technology in the context of ministry.

Discussion of the Results

The results of the post-assessment instrument on attitude, knowledge, and skill indicated changes in participant skill level outpaced changes in knowledge level which increased more than attitude. In particular, attitude change was contingent upon the participant's entry-level disposition. The entry mean scores on the attitude section were much higher than in the areas of knowledge and skill, leaving less room for improvement. Four of the fourteen items revealed little change due to the high entry level of the class population. This could be due to the amount of exposure they already have to basic software applications such as word processing, which is a tool frequently used in ministry. The fact that these participants chose this seminar at Minister's Conference would indicate a class bias toward a positive perspective on technology as a tool for ministry. Ministers see the need to use technology as a tool for ministry, partly because it permeates society so extensively, but in many cases they lack the knowledge and skill to use it effectively. This gives credibility to the higher increases in knowledge and skill than in attitude.

The knowledge section of the post-workshop assessment instrument included twenty-three items covering the five areas of technology addressed: publication, presentation, communication, research, and administration. Significant change was observed in all five areas of technology and all but one of the twenty-three individual items. The one item failing to produce

significant change was *Correspondence* under the area of *Word Processing* which overall achieved slightly lower change levels than the other four areas.

Related to the publication area, my personal experience indicates that the first thing people usually use personal computers for is word processing; and one of the first word processing products is correspondence. The mean score on the correspondence item left almost no room for improvement. Of the other four items under word processing, *Worship Bulletins* and *Newsletters* displayed significant increases but still less than *Mail Merge* and *Text and Graphic Combinations*. There was obviously a need and desire to learn more about these advanced word processing functions and how to use them. Increased knowledge levels were impacted by applications contextualized in ministry. For example, as the workshop began personalized letters produced through the mail merge process were given to each participant as an example of the attractiveness and effectiveness of personalized correspondence.

Significant levels of knowledge increase appeared in the area of communication as class participants, some for the first time, learned how to send and receive e-mail and access the internet. There was obvious excitement among class members as they learned of the web site provided for their church free of charge by the American Bible Society. To illustrate, one student in his video evaluation (Appendix F) indicated he had always wanted a web page for his church and this met his need. On the Workshop

Satisfaction Open Response Items (Table 4-6), one student noted the location of the church's web page as the most helpful workshop experience.

Related to the area of presentation, some participants had never seen a software application like Microsoft PowerPoint and appreciated the opportunity to enlarge their technological perspective and open new possibilities for enhanced ministry. In fact, the item related to the production of PowerPoint slides generated the largest "t" score (12.08) on the entire knowledge section.

In the areas of research and church management, the results of the knowledge evaluation indicated lack of understanding about the extent to which these applications could contribute to study and administration compared to the entry-level results of the attitude section indicating an awareness of research and church management software. Changes in knowledge related to research and church management were significantly high.

The data gleaned from the knowledge assessment supports the need for information such as provided through the presentation and demonstration portions of the workshop. However, knowledge about technology is not enough. Practical skills, framed within the context of ministry, must be developed if technology is to be used effectively to advance the mission of the Church.

The skill portion of the post-workshop assessment covered the same five areas of technology using the same twenty-three items. Significant levels of increase were realized in all five areas and on all twenty-three items. Demonstration and presentation in the classroom led to increased knowledge acquisition, but the practice and contextualized application in the lab led to significantly high increases in participants' skill level. These heightened skill levels should lead to more application and actual usage in the context of ministry by the participants following the workshop. One participant, a layperson responsible for her church's newsletter practiced her newly developed skills when she e-mailed her pastor and told him she could not wait to get back and start work on the newsletter applying some of the advanced formatting techniques she had learned. Only through the use of these skills can individuals exercise their God-given dominion over the technological part of creation of which we are to be stewards.

The positive changes in attitude, knowledge, and skill were impacted by course design, content, and methodology. The design of the seminar was based on the five areas of technology addressed: publication (word processing), presentation (PowerPoint slides and media in worship), communication (e-mail and internet access), research (personal resource management), and administration (church management software). The classroom environment, teaching methodology, organization of the workshop, and lab session were designed to create a bridge between the

rudiments of instructional design and the practical tasks which are to be accomplished in the training process (Newby, Stepich, Lehman, and Russell 15). The goal of the workshop was to help participants feel more comfortable with technology, learn more about available applications, and develop new or improve existing skills to help effectively use technology in the context of ministry.

Leader preparation included not only experience with the areas of technology covered, but almost twenty years of pastoral experience. For many, technology is new and can be intimidating to learn when calling upon learning modes never used before, so the contextualization of the learning process becomes important. This contextualization included activities like distributing personalized mail merge letters, working on an actual newsletter, creating PowerPoint slides of a sermon outline or chorus words for worship, and working with actual personal study resources and church administration data. My ministerial experience and pastor's heart helped me frame the instruction in the context of ministry and be a teacher who was not a "sage on the stage, but a guide by the side." The workshop provided a level playing field where instructor and students alike could learn from each other during the process. This approach made the workshop experience less like a traditional student/teacher classroom and more like a setting that fosters discipleship and mentoring. Knowledge acquisition did not seem limited to

the classroom and skill development to the lab. New knowledge was discovered during the process of application in the lab sessions.

The post-workshop assessment instrument included a seventeen-item response form for measuring seminar participants' satisfaction levels with workshop design, content, and methodology. Participants were moderately to strongly satisfied with all seventeen factors. The first five items on the satisfaction instrument addressed workshop design and thirty of thirty-one participants expressed strong to moderate satisfaction with these elements. These design elements reflect the need for intentional and systematic preparation as defined by Smith and Ragan (2). By addressing and attending to design components (i.e., course layout, classroom time, lab time, organization, and areas of technology addressed) prior to the workshop, this contributed to a relevant, productive, and effective learning experience for the participants.

Items six to ten on the satisfaction instrument dealt with the content of the workshop, addressing the types of software presented. Software applications included word processing, internet access, presentation, research tools, and church management. Although the ratings were slightly lower compared to design and methodology, participants expressed moderate to strong satisfaction with the workshop content. Word processing and research tools received the lower ratings. Personal speculation attributes lower ratings in word processing to the same entry-level familiarity as observed on the

attitude scale. The lower levels of satisfaction with research tools may be due to the type of material covered. Although not dissatisfied with the content in the research portion, open response items indicated a need for extended exploration with Bible study software. In my original plan, this type of software was to be covered, but time limitations prohibited its inclusion. In comparison, internet access, presentation (i.e., PowerPoint slides), and church management garnered higher satisfaction ratings. Lack of familiarity with these content areas possibly contributed to higher satisfaction levels, because as one participant stated on his video evaluation, “. . . . it opened up new possibilities.” Further support for these higher satisfaction levels appeared on the open-response and video assessments.

The last seven items addressed workshop methodology and included leader preparation, presentation techniques, demonstration techniques, lab techniques, leader response to participants, leader’s knowledge level of content, and prepared materials. This methodology component of the satisfaction scale yielded higher satisfaction ratings than the other two components, design and content. Almost 90 percent of the class expressed strong satisfaction with all seven items related to methodology. This supports the selection of appropriate teaching methodology for the adult learner. In order to produce satisfaction among adult learners, a fit needs to exist between instructional methodology and adult learning characteristics (FERENCE and VOCKELL 25-31). Further support for these higher ratings are

observed in the open-response items that state what participants found most helpful about the workshop (i.e., lab time, resource packet, materials, learning and doing method, and question and answer time). Informal video evaluations provide additional support for the high ratings in methodology.

As an additional piece of the workshop pre-assessment, the Kolb Learning Style Inventory (LSI) was administered to the class to determine if particular learning styles impacted growth increases in attitude, knowledge, and skill. Workshop membership related to the four learning styles breaks out into the following percentages: Accommodator 38.7 percent, Diverger 12.9 percent, Converger 22.6 percent, and Assimilator 25.8 percent. It would be expected that a greater percentage of Accommodators would register for this type of workshop due to their reliance on concrete experience and preferred style of active learning (McCarthy 26). Learning style interaction was significant only on four attitude questions. Overall, Accommodators demonstrated greater improvement over the other three learning styles. In contrast, Assimilators experienced the least amount of improvement on the attitude questions. Learning style theory suggests that Accommodators have the opposite strengths from Assimilators (Kolb, "Learning Styles" 228). This pattern observed on the workshop LSI corresponds to the characteristic strengths of the two learning styles. Accommodators' greatest strengths lie in doing things and becoming involved in new experiences whereas Assimilators' greatest strengths lie in creating theoretical models de-

emphasizing the practical use of theories (Kolb article 228). Obviously Accommodators would show greater improvement on the attitude scale in light of the teaching methodology employed in the workshop. Related to the other two learning styles, Divergers and Convergers, the population samples were too small to infer any significant conclusions.

External to the study was the Minister's Conference evaluation instrument, Speaker/Lecture Questionnaire, administered by the Office of Continuing Education. This evaluation provides additional support to high workshop satisfaction ratings. On a Likert type scale of one to five, with one being excellent, an average of 1.30 across content and presentation represents high satisfaction.

Overall, workshop participants experienced significant increases in attitude, knowledge, and skill levels related to technology contextualized in ministry. Significantly high levels of satisfaction with workshop design, content, and methodology emerged from the data analysis. By all indications, the workshop accomplished its goal of helping to train ministers in the use of technology for ministry. This is further substantiated by the fact that I was invited to repeat the workshop at the 1999 Minister's Conference due to the number of requests for this type of training.

Conclusions

Training related to technology in ministry is needed by ministers and those preparing for ministry. Personal computers and related technology

provide tools for ministry undreamed of just a few years ago. The forces of evil in the world take full advantage of technological advances, especially the internet. The number of pornographic sites available on the net are virtually incalculable, not to mention the number of adults attempting to take advantage of young people who are surfing the net in ever increasing numbers.

Christians are responsible to use the technological tools available to promote good and advance the kingdom of God, especially in this highly technological and media-sophisticated society in which we live. Jesus adapted his communication pattern to the language and culture of his day in order to more effectively reach people with the Gospel. We must do the same if we are to succeed in conveying a timeless message to contemporary society. Our responsibility as stewards of God's creation includes the appropriate use of technology within a proper moral and ethical framework.

Churches must also avoid the temptation to use technology and its related techniques simply to attract people to the church but then fail to offer them anything of substance once they are a part of the church family. Media-supported worship, high-tech television ads, professionally produced printed materials, internet access, and church web pages can all be helpful but there must be more. Several of the large, vibrant, fast-growing churches I have visited have gone beyond the glitz of modern technology as a means to attract

people to church and offered them an experience of vital Christianity once in the church.

At least five common characteristics were observed in all of these churches that appear to make them fast-growing, vibrant churches. First, there is relevant, vital, media-supported worship. The worship experience is either broad enough to meet the needs of people of different generations and backgrounds or multiple services are offered to meet these needs. Second, membership standards are higher than in the average American church. Courses in church membership and basic Christianity must be completed and potential members are expected to make concrete commitments of time and resources to the ministry of the church. Small group participation is the third common characteristic. A small group network is available to all constituents for the purpose of study, growth, and support. These churches intentionally encourage and equip members for involvement in ministry which is characteristic four. Persons attend classes, complete profiles, and participate in interviews in an attempt to determine their place in ministry and the church attempts to provide that place. Finally, common characteristic five is a strong emphasis on missions. Members are urged to give to and participate in missions on a local, national, and global scale. Most of these churches lead the way in their denomination in the areas of missions giving and involvement. These churches are visionary and forward-thinking in their approach to ministry and mission and therefore the extensive use of

technology comes naturally to them. They neither fear it nor misuse it. It enhances their ministry to people from the point of entry to the point of involvement.

Romans 10:14 states, "How, then, can they call on the one they have not believed in? And how can they believe in the one of whom they have not heard? And how can they hear without someone preaching to them?" Likewise, how can ministers use technology appropriately without someone to train them? Appropriate training must be provided on the undergraduate, graduate, and continuing education levels to ministers and to those in training for ministry. Training opportunities must be developed on a sound instructional design foundation and implemented with a style similar to that of discipleship training or mentoring. Training must be relevant (applicable to ministry), current (relate to the latest technology), and contextualized in ministry (provide for the possibility of immediate integration in the life of the church). Content, activities, and teaching methodology must be placed in the context of ministry and the learning characteristics of adult learners should be considered throughout the planning, design, and implementation of such training.

Ference and Vockell list fourteen adult learning characteristics (25). Taking these characteristics into consideration when designing a workshop on technology contributes to its effectiveness. Adults are active learners, willing to participate in the learning process and prefer hands-on experiences.

They are solution-driven, seeking solutions to problems and looking for purpose behind tasks. New and improved skills are desirable to adults and they are motivated by personal improvement opportunities. The teaching methodology employed in the workshop made for a good fit, considering the learning characteristics of the participants, and contributed to the overall success of the workshop.

The previous factors contributed to the effectiveness of the study, but certain limitations arose. They include the small population, thirty-one participants, included in the workshop. Though the participants varied in age and experience it was a self-selecting population which narrows the sample and further limits the inferences that can be made from the study. The workshop covered a total of nine hours of instruction and lab experience which limits the amount of material considered. The focus on a single experience limits the generalizability of the data gleaned from the study. A follow-up study to measure the amount of integration experienced by the participants seemed impractical and an attempt to replicate the study within any timeframe less than a year would have been impossible.

Recommendations

A review of the data reveals high levels of positive change in attitude, knowledge, and skill among workshop participants. High satisfaction levels were registered by the participants related to workshop design, content, and methodology. Based on the results of this study, recommendations are

offered under three categories: (1) Replication of the Study; (2) Future Training Needs; (3) Curriculum Integration.

Replication of the Study

This study was limited by the small sample size (n=31) and the single experience applied through the workshop. Additional applications of a similar experience to additional samples would be helpful. The samples should not necessarily be larger because implementing the same kind of workshop with classroom and lab time would be difficult with larger groups. Additional workshops supplying collateral data would be beneficial. The nine-hour framework of the workshop was inhibiting. Additional time in future workshops would reduce concerns about and limitations to this study. A one- or two-week intensive would be desirable such as that employed in the Asbury Theological Seminary course, *CE/YM 674, Instructional Media in the Church*. Within the time frame of this course, the class structure provided adequate time to discover, implement, and integrate ministry-related technology.

With extended time, additional technology issues could be explored, including Bible study software, multiple word processing applications, computer hardware, and operating systems, as suggested on the Workshop Satisfaction Open Response Items (Table 4-6). A follow-up evaluation, if possible, would prove beneficial to determine levels of integration achieved by participants in actual ministry settings following the workshop.

Future Training Needs

Training should remain available through continuing education opportunities like the context of this study but should also be offered on the undergraduate and graduate levels of ministerial training. Training should include not only technology skills, but integration of skills into the context of ministry. Most ministers with computer skills are self-taught but this approach does not provide the moral, ethical, and theological framework needed to use technology appropriately in ministry. To act as responsible stewards of creation's resources, including technology, requires the time and effort to learn how to use the tools in ways which enhance ministry (Clemans 14).

Curriculum Integration

Hardee says the integration and implementation of technology in ministry follows two basic avenues: (1) to perform administrative tasks of the church which include clerical, business, and recordkeeping functions, and (2) to perform growth-oriented tasks to creatively expand the ability of the church to serve its constituency (230-232). Not only should basic technology skills be developed during ministerial preparation but this training should be woven into particular areas of study on the undergraduate and graduate levels contextualizing it in ministry. For example, Bible study software, as well as the wealth of internet resources, should be explored at some point in English Bible courses since one of the goals is to acquaint students with the

tools of Bible study and train them in their use. Youth and Family Ministry courses of study could include information about the internet. Persons working with families and especially youth will be working with people who regularly surf the net. As spiritual leaders and mentors they need to know how to frame internet use in the proper moral and ethical context and help protect families from the evil influence so prevalent on the net. Students, early in their educational experience, would benefit from exposure to personal resource management software which would allow them to draw more effectively from the resources developed in college and seminary and then study and prepare more efficiently in ministry.

Final Thoughts

With the kind of self-selecting sample used in this study there is no way to control who participates based on the amount of computer knowledge and experience they possess. Therefore, a class like this one contains persons with little or no experience and some with extensive experience even to the point of computer science degrees. It was a concern there would be persons in the class with so much more knowledge and experience than the instructor that they would be bored and find the workshop a waste of time and money. To my surprise, participants on both ends of this spectrum seemed to enjoy and benefit from the workshop. This offers validity to the study and supports the need for continued offerings of technology training, as does my invitation to repeat the workshop at the 1999 Minister's Conference at Asbury Seminary.

Ministers do want to learn more about technology and how to use it in the context of ministry.

Jesus communicated in relevant ways through the use of parables and contemporary illustrations to more effectively reach the people with his message. John Wesley used new and innovative approaches to ministry in his day to reach as many people as possible. If we are to convey the timeless message of the gospel to a contemporary society, we must deliver it in contemporary ways, which include the use of modern technology. May we use everything placed at our disposal, as stewards of God's creation, to help others come to know him, worship him, and serve him.

Appendix A

Minister's Conference Seminar Description

PRE-CONFERENCE SEMINARS

MONDAY, FEB. 2 AND TUESDAY, FEB. 3

These seminars run concurrently with the half-day seminars. Please choose one.

FULL-DAY SEMINARS

MONDAY AND TUESDAY

**Experiencing God: A Retreat***Dr. Reg Johnson*

Back by popular demand! Come aside for a time of rest and renewal through personal and corporate prayer, Scripture, storytelling, journal writing and small-group sharing. This mini-retreat may be just what you need as you begin your week at Ministers' Conference. (Register early — enrollment is limited!) You are urged to dress casually, bring your Bible, notebook or journal and an expectant heart. Dr. Reg Johnson is dean of the chapel and professor of spiritual formation at Asbury Seminary and is a popular speaker at retreats and conferences.

**The Computer as a Ministry Tool***Rev. Milton Lowe*

Experience how the computer can increase productivity and effectiveness in ministry through word processing, telecommunication, multimedia, Bible study, church administration and personal resource management. The seminar includes software demonstrations and hands-on experience in the computer lab. A technology resource packet including software demos will be provided for each participant. Milton Lowe is a bivocational minister, working full-time in the area of software for ministry.

**Storytelling: A Retreat for the Inner Life***Dr. Chuck Killian*

The Christian life is the creating of one's own unique story, shaped and understood by the Christ story. Experience fellowship and spiritual renewal as you retreat from life's busyness. Locate your story and learn how to share it. Dr. Chuck Killian is a professor of preaching and coaches Asbury Seminary's Dramatic Ministry Team, which has performed nearly 40 different productions throughout the country.

**What's Your Temperament?***Dr. Fred Van Tatenhove*

The Taylor-Johnson Temperament Analysis is especially designed for use in premarital, marital and family counseling in pastoral care situations. It is a quick and convenient method of measuring important personality traits which influence personal and interpersonal functioning and adjustment. It helps to identify similarities, differences or areas of misunderstanding. The test takes about 45 minutes and can be administered to individuals, couples or groups. Seminar participants will be certified to administer, score and process T-JTA results. Dr. Fred Van Tatenhove is a certified clinical member of the American Association for Marriage and Family Therapy and has taught seminars on marriage, parenting and psychological testing.

SPECIAL EVENTS

- **What's New at Asbury Seminary!**

6 p.m., Monday, Feb. 2, Cordelia Thomas Dining Room

You are cordially invited to worship with Mr. Albin Whitworth, professor of church music and Seminary organist, in an evening of music. Featuring sacred classics and great hymns of the church, Albin will be accompanied by brass and timpani. Mr. Whitworth is known worldwide for his mastery as a keyboard performer, composer and arranger and has published more than 20 books of church keyboard music. The memorable performance is free and open to all. (Please join us for refreshments following the concert.)

- **A Glorious Evening of Music**

7:30 p.m., Monday, Feb. 2, McKenna Chapel

You are cordially invited to worship with Mr. Albin Whitworth, professor of church music and Seminary organist, in an evening of music. Featuring sacred classics and great hymns of the church, Albin will be accompanied by brass and timpani. Mr. Whitworth is known worldwide for his mastery as a keyboard performer, composer and arranger and has published more than 20 books of church keyboard music. The memorable performance is free and open to all. (Please join us for refreshments following the concert.)

- **Alumni Banquet**

4:45 p.m., Wednesday, Feb. 4, Stevens-Pike Dining Room

Join the Asbury alums at this year's alumni banquet, featuring Dr. Chuck Killian, a professor of preaching at Asbury Seminary, in "An Evening with H.C. Morrison." Alumni honor years are those ending in 3 and 8. Tickets are \$10. Please indicate your attendance on the registration form and send payment with your registration.

- **Women in Ministry Luncheon**

12 noon, Wednesday, Feb. 4, Cordelia Thomas Dining Room

Lunch with an opportunity to network and share with other women serving in ministry. Meet the Rev. Joy J. Moore, Asbury's new director of women's and ethnic ministries. Tickets are \$5. Please note your attendance on the registration form and send payment with your registration.

Appendix B
Workshop Overviews

Workshop Section Overviews

(Instructor and Student Manuals Separate from Dissertation)

Session I Workshop Sections	Session II Workshop Sections
Overview & Pretest Publication Presentation Communication	Research Administration Conclusion & Posttest

Definition of Terms

Declarative Knowledge:	Factual content knowledge (why do it; purpose knowledge)
Procedural Knowledge:	Process Knowledge (how to do it)
Attitude:	Feelings and values (comfort level doing it)
Skill:	Application Knowledge (do it)

Section Outline -- (Basis for Lesson Plan)

Provide Advance Organizer
 Introduce publication.
 Introduce Newsletter
 Demonstrate Newsletter Formats & Graphics
 Introduce Mail Merge
 Demonstrate Mail Merge
 Lab Experience

Strategies in Instruction for Seminar Workshop (Heinich, Molenda, Russell, Smaldino, 9-13)

Presentation Demonstration Discussion Drill & Practice Tutorial	Cooperative learning Gaming Simulation Discovery Problem Solving
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Common Section Strategies

Presentation--tell them about it
 Demonstration--show them how to do it
 Simulation--let them do it
 Discussion--talk about it

Assessment of Section

Knowledge--Post-Workshop Survey
 Attitude--Post-Workshop Survey & discussion ("will use" questions)
 Skill--Post-Workshop Survey & products from lab experience

Workshop Section Overview -- Publication

Knowledge	Attitude	Skill
<p style="text-align: center;">Declarative</p> <p>Purpose of Mail Merge Produce multiple personalized letters quickly and efficiently</p> <p>Newsletter Format & Graphic Art Word Art Title, Drop Cap, Insert Graphic</p>	<p style="text-align: center;">Express or show more comfort with mail merge</p> <p style="text-align: center;">Express or show more comfort with newsletter formatting</p>	<p style="text-align: center;">Produce mail merge letter with names exported from church membership database</p> <p style="text-align: center;">Produce newsletter with inserts and advanced formatting.</p>
<p style="text-align: center;">Procedural</p> <p>Demonstrate steps of mail merge & lab setting</p> <p>Demonstrate Newsletter Formatting & lab setting</p>		

Objectives for Publication Section

Declarative Knowledge

- List the multiple uses of mail merge in the church.
- Discuss the rationale for publication formatting.

Procedural Knowledge

- List the steps of mail merge in the notetaking guide.
- List the steps of two types of formatting for publication in the notetaking guide. (Word Art and Drop Caps)

Attitude

- Express ways to use mail merge and publication formatting in personal ministry setting.

Skill

- Complete successfully mail merge and publication activities in lab setting.

Section Outline – (Basis for Lesson Plan)

Provide Advance Organizer
 Introduce publication.
 Introduce Newsletter
 Demonstrate Newsletter Formats & Graphics
 Introduce Mail Merge
 Demonstrate Mail Merge
 Lab Experience

Section Strategies

Presentation, Demonstration, Simulation, Discussion

Workshop Section Overview -- Presentation

Knowledge	Attitude	Skill
<p>Declarative Purpose of Presentation software Produce appropriate large print slides for presentation in group settings</p>	<p>Express or show more comfort with PowerPoint slide creation</p>	<p>Produce PowerPoint slide using appropriate color and font size</p>
<p>Procedural Demonstrate steps PowerPoint slide production & lab setting</p>		

Objectives for Presentation Section

Declarative Knowledge

- List the multiple uses of PowerPoint slides in the church.
- Discuss the rationale for PowerPoint slide usage.

Procedural Knowledge

- List the steps of PowerPoint slide production in the notetaking guide.

Attitude

- Express ways to use PowerPoint slides in personal ministry setting.

Skill

- Complete successful creation of PowerPoint slide in lab setting.

Section Outline -- (Basis for Lesson Plan)

Provide Advance Organizer
 Introduce PowerPoint slide production.
 Demonstrate PowerPoint slide production
 Lab Experience

Section Strategies

Presentation
 Demonstration
 Simulation
 Discussion
 Discovery

Workshop Section Overview -- Communication

Knowledge	Attitude	Skill
<p style="text-align: center;">Declarative</p> <p>Purpose of Internet access and e-mail usage Quick & efficient communication as well as access of pertinent information for ministry</p>	<p>Express or show more comfort with Internet Access and communication</p>	<p>Access particular internet sites and place a bookmark</p>
<p style="text-align: center;">Procedural</p> <p>Demonstrate steps of internet access, e-mail, and bookmark placement & lab setting</p>		

Objectives for Communication Section

Declarative Knowledge

- List the multiple uses of internet access and communication in the ministry setting.

Procedural Knowledge

- List the steps of internet access, communication, and bookmark placement in the notetaking guide.

Attitude

- Express ways to use internet access, communication, and bookmark placement in personal ministry setting.

Skill

- Access internet, send e-mail, and place bookmark in lab setting.

Section Outline -- (Basis for Lesson Plan)

Provide Advance Organizer
 Introduce use internet access, communication, and bookmark placement.
 Demonstrate internet access, communication, and bookmark placement.
 Lab Experience

Section Strategies

Presentation
 Demonstration
 Simulation
 Discussion
 Discovery

Workshop Section Overview -- Research

Knowledge	Attitude	Skill
<p style="text-align: center;">Declarative</p> <p>Purpose of Bible Study and Resource Management software More in-depth study and preparation and retrieval of personal resources</p>	<p>Express or show more comfort with Bible Study and Resource Management software</p>	<p>Do search in Bible Study software. Enter and print search report of Personal Resources</p>
<p style="text-align: center;">Procedural</p> <p>Demonstrate steps of Bible Study software search and Personal Resource management entry and retrieval & lab setting</p>		

Objectives for Research Section

Declarative Knowledge

- List the importance of Bible Study and Resource Management software in ministry.
- Discuss the rationale for publication formatting.

Procedural Knowledge

- List the steps of using sample Bible Study software in the notetaking guide.
- List the steps of entering and printing a search report of personal resources

Attitude

- Express ways Bible Study and Resource Management software are useful in personal ministry (intended future uses).

Skill

- Perform search in Bible Study software
- Enter and print search report of Personal Resources

Section Outline -- (Basis for Lesson Plan)

Provide Advance Organizer
 Introduce Bible Study software.
 Demonstrate Bible Study software
 Introduce Personal Resource Management software
 Demonstrate Personal Resource Management software
 Lab Experience

Section Strategies

Presentation, Demonstration, Simulation, Discussion, Problem-Solving

Workshop Section Overview -- Administration

Knowledge	Attitude	Skill
<p>Declarative Purpose of Church Management software Maintain and report membership, attendance, contribution and financial records</p>	<p>Express or show more comfort with church management software</p>	<p>Enter membership, visitor attendance, and financial records and produce appropriate reports.</p>
<p>Procedural Demonstrate steps of data entry in church management software</p>		

Objectives for Administration Section

Declarative Knowledge

- List the multiple uses of church management software in the church.
- Discuss the benefits of church management software for record keeping compared to manual record keeping.

Procedural Knowledge

- List the steps of church management software data entry and report generation in the notetaking guide.

Attitude

- Express ways to use church management software in a personal ministry setting.

Skill

- Complete successful data entry and report generation in lab setting.

Section Outline – (Basis for Lesson Plan)

Provide Advance Organizer
 Introduce church management software.
 Demonstrate church management software
 Lab Experience

Section Strategies

Presentation
 Demonstration
 Simulation
 Discussion
 Problem-Solving

Appendix C
Pre-Workshop Survey

Technology in Ministry

Pre-Workshop Survey

INSTRUCTIONS: Please take the next 15 minutes to complete this survey. Please note the different rating scales used in each section and respond accordingly. Thank you.

Share your opinion in these areas based on the following scale:

Opinion	Rating
Strongly Disagree	1
Disagree	2
No Opinion	3
Agree	4
Strongly Agree	5

Attitude Areas	Strongly Disagree 1	Disagree 2	No Opinion 3	Agree 4	Strongly Agree 5
Word processing is a valuable tool in generating printed material for the church.	1	2	3	4	5
The use of word processing increases communication within the church.	1	2	3	4	5
The internet provides valuable resources for ministry.	1	2	3	4	5
The internet provides new possibilities for ministry.	1	2	3	4	5
E-mail increases communication within the church and among churches.	1	2	3	4	5
Computer-generated transparencies and/or PowerPoint slides improve teaching and preaching effectiveness.	1	2	3	4	5
The computer can help the minister catalog and retrieve personal resources.	1	2	3	4	5
Bible study software improves the quality of preaching and teaching.	1	2	3	4	5
Resource management and Bible study software reduce the time needed for quality preparation.	1	2	3	4	5
The computer is a valuable tool in maintaining and monitoring membership and visitation records.	1	2	3	4	5
Tracking attendance and following up absentees and visitors are easier with church management software.	1	2	3	4	5
Maintaining and reporting from financial records is faster and more accurate with church management software.	1	2	3	4	5
Technology is a valuable tool for ministry.	1	2	3	4	5
Inappropriate uses of technology undermine technology.	1	2	3	4	5

Rate your knowledge level in these areas based on the following scale:

Knowledge level	Rating
No Knowledge	1
Little Knowledge	2
Some Knowledge	3
Much Knowledge	4
Extensive Knowledge	5

Knowledge Areas

No Knowledge	Little Knowledge	Some Knowledge	Much Knowledge	Extensive Knowledge
1	2	3	4	5

Rate your knowledge level in the use of word processing to produce:

• Correspondence	1	2	3	4	5
• Worship bulletins	1	2	3	4	5
• Newsletters	1	2	3	4	5
• Mail merge	1	2	3	4	5
• Text and graphic combinations	1	2	3	4	5

Rate your knowledge level in the use of communication technology and software to:

• Access data through internet	1	2	3	4	5
• Send & receive E-mail	1	2	3	4	5
• Locate internet links	1	2	3	4	5
• Place bookmarks	1	2	3	4	5
• Use on-line library services	1	2	3	4	5

Rate your knowledge level in the use of presentation software to:

• Produce computer-generated transparencies	1	2	3	4	5
• Produce PowerPoint slides	1	2	3	4	5
• Make effective use of projection equipment	1	2	3	4	5

Rate your knowledge level in the use of research tools to:

• Catalog personal resources	1	2	3	4	5
• Retrieve personal resources	1	2	3	4	5
• Search & study the Bible	1	2	3	4	5

Rate your knowledge level in the use of church management software to:

• Maintain membership records	1	2	3	4	5
• Monitor visitation	1	2	3	4	5
• Track attendance	1	2	3	4	5
• Follow up absentees & visitors	1	2	3	4	5
• Record contributions	1	2	3	4	5
• Maintain financial records	1	2	3	4	5
• Generate financial reports	1	2	3	4	5

Rate your skill level in these areas based on the following scale:

Skill	Rating	Descriptor
Beginner	1	No experience (never uses)
Novice	2	Little experience (seldom uses)
Amateur	3	Some experience (occasionally uses)
Expert	4	Moderate experience (often uses)
Master	5	Extensive experience (always uses)

Skill Areas

Beginner	Novice	Amateur	Expert	Master
1	2	3	4	5

Rate your skill level in the use of word processing to produce:

• Correspondence	1	2	3	4	5
• Worship bulletins	1	2	3	4	5
• Newsletters	1	2	3	4	5
• Mail merge	1	2	3	4	5
• Text and graphic combinations	1	2	3	4	5

Rate your skill level in the use of communication technology and software to:

• Access data through internet	1	2	3	4	5
• Send & receive E-mail	1	2	3	4	5
• Locate internet links	1	2	3	4	5
• Place bookmarks	1	2	3	4	5
• Use on-line library services	1	2	3	4	5

Rate your skill level in the use of presentation software to:

• Produce computer-generated transparencies	1	2	3	4	5
• Produce PowerPoint slides	1	2	3	4	5
• Make effective use of projection equipment	1	2	3	4	5

Rate your skill level in the use of research tools to:

• Catalog personal resources	1	2	3	4	5
• Retrieve personal resources	1	2	3	4	5
• Search & study the Bible	1	2	3	4	5

Rate your skill level in the use of church management software to:

• Maintain membership records	1	2	3	4	5
• Monitor visitation	1	2	3	4	5
• Track attendance	1	2	3	4	5
• Follow up absentees & visitors	1	2	3	4	5
• Record contributions	1	2	3	4	5
• Maintain financial records	1	2	3	4	5
• Generate financial reports	1	2	3	4	5

Appendix D
Post-Workshop Survey

Technology in Ministry

Post-Workshop Survey

INSTRUCTIONS: Please take the next 15 minutes to complete this survey. Please note the different rating scales used in each section and respond accordingly. Thank you.

Share your opinion in these areas based on the following scale:

Opinion	Rating
Strongly Disagree	1
Disagree	2
No Opinion	3
Agree	4
Strongly Agree	5

Attitude Areas	Strongly Disagree 1	Disagree 2	No Opinion 3	Agree 4	Strongly Agree 5
Word processing is a valuable tool in generating printed material for the church.	1	2	3	4	5
The use of word processing increases communication within the church.	1	2	3	4	5
The internet provides valuable resources for ministry.	1	2	3	4	5
The internet provides new possibilities for ministry.	1	2	3	4	5
E-mail increases communication within the church and among churches.	1	2	3	4	5
Computer-generated transparencies and/or PowerPoint slides improve teaching and preaching effectiveness.	1	2	3	4	5
The computer can help the minister catalog and retrieve personal resources.	1	2	3	4	5
Bible study software improves the quality of preaching and teaching.	1	2	3	4	5
Resource management and Bible study software reduce the time needed for quality preparation.	1	2	3	4	5
The computer is a valuable tool in maintaining and monitoring membership and visitation records.	1	2	3	4	5
Tracking attendance and following up absentees and visitors are easier with church management software.	1	2	3	4	5
Maintaining and reporting from financial records is faster and more accurate with church management software.	1	2	3	4	5
Technology is a valuable tool for ministry.	1	2	3	4	5
Inappropriate uses of technology undermine technology.	1	2	3	4	5

Rate your knowledge level in these areas based on the following scale:

Knowledge level	Rating
No Knowledge	1
Little Knowledge	2
Some Knowledge	3
Much Knowledge	4
Extensive Knowledge	5

Knowledge Areas	No Knowledge	Little Knowledge	Some Knowledge	Much Knowledge	Extensive Knowledge
	1	2	3	4	5
Rate your knowledge level in the use of word processing to produce:					
• Correspondence	1	2	3	4	5
• Worship bulletins	1	2	3	4	5
• Newsletters	1	2	3	4	5
• Mail merge	1	2	3	4	5
• Text and graphic combinations	1	2	3	4	5
Rate your knowledge level in the use of communication technology and software to:					
• Access data through internet	1	2	3	4	5
• Send & receive E-mail	1	2	3	4	5
• Locate internet links	1	2	3	4	5
• Place bookmarks	1	2	3	4	5
• Use on-line library services	1	2	3	4	5
Rate your knowledge level in the use of presentation software to:					
• Produce computer-generated transparencies	1	2	3	4	5
• Produce PowerPoint slides	1	2	3	4	5
• Make effective use of projection equipment	1	2	3	4	5
Rate your knowledge level in the use of research tools to:					
• Catalog personal resources	1	2	3	4	5
• Retrieve personal resources	1	2	3	4	5
• Search & study the Bible	1	2	3	4	5
Rate your knowledge level in the use of church management software to:					
• Maintain membership records	1	2	3	4	5
• Monitor visitation	1	2	3	4	5
• Track attendance	1	2	3	4	5
• Follow up absentees & visitors	1	2	3	4	5
• Record contributions	1	2	3	4	5
• Maintain financial records	1	2	3	4	5
• Generate financial reports	1	2	3	4	5

Rate your skill level in these areas based on the following scale:

Skill	Rating	Descriptor
Beginner	1	No experience (will never use)
Novice	2	Little experience (will seldom use)
Amateur	3	Some experience (will occasionally use)
Expert	4	Moderate experience (will often use)
Master	5	Extensive experience (will always use)

Skill Areas

Beginner	Novice	Amateur	Expert	Master
1	2	3	4	5

Rate your skill level in the use of word processing to produce:

• Correspondence	1	2	3	4	5
• Worship bulletins	1	2	3	4	5
• Newsletters	1	2	3	4	5
• Mail merge	1	2	3	4	5
• Text and graphic combinations	1	2	3	4	5

Rate your skill level in the use of communication technology and software to:

• Access data through internet	1	2	3	4	5
• Send & receive E-mail	1	2	3	4	5
• Locate internet links	1	2	3	4	5
• Place bookmarks	1	2	3	4	5
• Use on-line library services	1	2	3	4	5

Rate your skill level in the use of presentation software to:

• Produce computer-generated transparencies	1	2	3	4	5
• Produce PowerPoint slides	1	2	3	4	5
• Make effective use of projection equipment	1	2	3	4	5

Rate your skill level in the use of research tools to:

• Catalog personal resources	1	2	3	4	5
• Retrieve personal resources	1	2	3	4	5
• Search & study the Bible	1	2	3	4	5

Rate your skill level in the use of church management software to:

• Maintain membership records	1	2	3	4	5
• Monitor visitation	1	2	3	4	5
• Track attendance	1	2	3	4	5
• Follow up absentees & visitors	1	2	3	4	5
• Record contributions	1	2	3	4	5
• Maintain financial records	1	2	3	4	5
• Generate financial reports	1	2	3	4	5

Please rate your level of satisfaction with the following elements of the workshop:

Workshop Satisfaction	Strong Dissatisfaction	Moderate Dissatisfaction	Neutral	Moderate Satisfaction	Strong Satisfaction
	1	2	3	4	5
Overall layout of the course	1	2	3	4	5
Classroom session	1	2	3	4	5
Lab session	1	2	3	4	5
Organization of workshop	1	2	3	4	5
Types of software presented:					
• Word processing	1	2	3	4	5
• Internet access	1	2	3	4	5
• Presentation	1	2	3	4	5
• Research tools	1	2	3	4	5
• Church management	1	2	3	4	5
Areas of technology addressed	1	2	3	4	5
Leader preparation of workshop	1	2	3	4	5
Presentation techniques of leader	1	2	3	4	5
Demonstration techniques of leader	1	2	3	4	5
Lab techniques of leader	1	2	3	4	5
Leader response to participants	1	2	3	4	5
Leader' knowledge level of content	1	2	3	4	5
Workshop materials & handouts	1	2	3	4	5

What did you find most helpful about the workshop?

What did you find least helpful about the workshop?

What do you wish had been included in the workshop?

List one improvement you would make in the workshop.

Appendix E
General Data Sheet

Technology in Ministry

General Data Sheet

INSTRUCTIONS: Please read each item and mark or fill in your response. Thank you.

1. Gender (✓ which applies)
 - Male
 - Female
2. Age (✓ which applies)
 - 20-29
 - 30-39
 - 40-49
 - 50-59
 - 60-69
 - 70+
3. Ministry Employment Status (✓ which applies)
 - Full-time ministry
 - Part-time ministry
 - Bi-vocational ministry
 - Other _____
4. Average worship attendance (✓ which applies)
 - Less than 50
 - 50-100
 - 100-200
 - 200-300
 - 300-500
 - Over 500
5. Church setting (✓ which applies)
 - Part-time solo pastor
 - Full-time solo pastor
 - Part-time member of multiple staff
 - Full-time member of multiple staff
 - Other _____
6. Denomination _____
7. Experience in ministry (✓ which applies)
 - 0-4 years
 - 5-9 years
 - 10-19 years
 - 20-29 years
 - 30-39 years
 - Over 40 years
8. Number of computers you own _____
9. Number of computers at the church _____
10. Years of experience with computers _____
11. Are you currently on-line?
 - Yes
 - No
12. List the software applications you currently use.
 -
 -
 -
 -
 -
 -

Appendix F
Video Evaluations Transcript

Video Evaluations Transcript

Student 1

It was a terrific seminar for all of those involved, for people from all different backgrounds, with computers whether it is a limited or extended knowledge. Concerning the amount of time we had it was fantastic. I appreciate all the resources we were given. Thank you very much.

Student 2

We're not a church per se but a lay-lead renewal organization. We needed to maximize our computers on the internet to enhance our functioning of getting out as much information as we can. This course has done this and we appreciate very much the instructional materials that was provided and the method that was used, especially the hands-on part of the course. I've been coming to the Minister's Conference for several years and taking many courses and this is undoubtedly the best course I've ever taken. Thank you for this opportunity. It's been super!

Student 3

I've been coming to Minister's Conference every other year. I took this course and it was an outstanding course. The use of the new electronic media was exciting, innovative, and I use the computer to do sermons and research. In spite of all of my experience, I've learned a lot of how to access many things. One of the things I've always wanted for my church is a web page, and I found out that I already have one for my church. I found how to access and share this information with other ministers in my city. I found this to be one of the best Minister's Conferences I've been to because I can take back with me materials I can work with and use in years ahead.

Student 4

I came particularly to learn from hands-on experiences in the area of media. We have a computer in my home and my church. I use it extensively, I use the internet. and one of my concerns was this course would be too elementary. I do have a media background and an education background. I worked in the media department here at the seminary. The technology has advanced so quickly and so fast. To actually get in the class but not only do it from an instructional standpoint but go into a lab and do hands-on, it was not only instructional but fun. I gained a lot of new things like newsletters. I

just created a database not using church management software but I see a need now how these types of software can help. The resources and goodies bag will take a long time to go through but it is the type of thing I like doing. I've got so much now to share with the people in our church who are progressive and want to see things happen. One thing I would love to see is a seminar like this now for those of us who have experienced it who can bring other lay people back and other ministers. Evangelism through electronic media. Now we can bring people back and do similar things with them.

Student 5

I enjoyed the class tremendously. I liked the lab work particularly and would have liked to added more lab time. The technique used in transmitting the material was helpful. I am a beginner and have a lot to learn but I thought it was beneficial. I would have liked for it to be longer to do more with this because it was beneficial--content and method. Thanks.

Student 6

I appreciated this seminar. I recently installed a computer system in the church and I have very little computer experience. This was helpful for me. I appreciated the different areas we covered and I wished we would have had more time to cover other areas. I hope to be able to implement church management software in the near future and hopefully this will help me and the church as we discern our needs.

Student 7

I enjoyed the seminar very much and it helped me to understand more about how to use the applications in my church setting. The especially helpful parts were the church management software and the PRM+. We appreciate that demo and the freebie for the other one. You have helped me to increase my knowledge of the other programs especially the internet links and the home pages. I appreciate it very much. Thanks again.

Student 8

I just purchased a new computer last year. This is exactly what I needed. The hands-on was nice to be able to see it done and to do it myself. The software will be excellent and the information was what I needed at this time. The learning was good to assimilate after getting to see and do it. Thank you very much.

Appendix G
General Data Sheet Information

General Data Sheet Information

Gender	Male	28	
	Female	3	
Age	20-29	5	
	30-39	10	
	40-49	9	
	50-59	6	
	60-69	1	
	70+		
Ministry Employment Status	Full-time ministry	26	
	Part-time ministry	1	
	Bi-vocational ministry	1	
	Other	3	Sunday School teacher Layperson Not applicable
Average worship attendance	Less than 50	2	1 n/a
	50-100	12	
	100-200	10	
	200-300	1	
	300-500	4	
	Over 500	1	
Church setting	Part-time solo pastor	3	
	Full-time solo pastor	20	
	Part-time member of multiple staff		
	Full-time member of multiple staff	6	
	Other	2	Renewal organization Volunteer
Denomination	Methodist	28	
	Independent	1	
	Nothing indicated	2	

General Data Sheet Information (continued)

Experience in ministry	0-4 years	8	1 n/a
	5-9 years	5	
	10-19 years	11	
	20-29 years	5	
	30-39 years	1	
	Over 40 years		
Number of computers you own	1, 3, 3, 1, 1, 1, 1, 1, 2, 2, 1, 2, 1, 1, 1, 1, 1, 1, 3, 1, 3, 1, 1, 1, 1, 1, 1, 0, 2,		
Number of computers at the church	1, 1, 1, 1, 0, 1, 5, 2, 0, 2, 0, 0, 0, 2, 5, 1, 1, 1, 0, 1, 3, 1, 1, 1, 4, 1, 5, 2, 2, 3,		1 n/a
Years of experience with computers	5, 8, 10, 2, 1.5, 20, 5, 20, 4, 15, 5, 8, 4, 4, 8, 3.5, 6, .5, 10, 8, 8, 10, 5, 15, 7, 5, 1.5, 5, 7, 1, 15,		
Are you currently on-line?	Yes	21	
	No	10	
List of software applications you currently use	Office 97 Online Bible Sage Digital Library MS Money MS Dos Deskmate Perfect Labels Windows 95 Netscape Navigator Juno QuickVerse Prodigy (ISP) Servant Keeper Mac OS AmiPro Sermon Illus. ACS Professional Write PRM+	Microsoft Works Microsoft Publisher Song Select Logos Quicken MS Office MS Access Hot Dog PC Study Bible by BibleSoft Correl Draw Misc. Utilities Claris Works Outlook Express Quick Library Word Pad Parsons Illustration Bible Online Bannermatic	Softdent - dental off. job Internet Explorer Print Shop FaxWorks Eudora E-mail WordPerfect WordPerfect Suite 7.0 Lotus 1,2,3 for Mac Microsoft Word Microsoft Excel Microsoft PowerPoint EnVision Publisher Windows 3.1 UM Resources (Hymnal, Book of Worship, etc.) Create-a-Card CDM+ PC+

Works Cited

- Alexander, Neil M., ed. The New Interpreter's Bible, Vol. 1. Nashville, TN: Abingdon Press, 1994.
- Anfuso, Francis, David Loveless, and Caron Loveless. Taking Your Church Off Pause (Video-Session 1). Yuba City, CA: Twenty-first Century Ministries, 1994.
- Bonhoeffer, Dietrich. Creation and Fall. London: SCM Press, 1962.
- Bouma-Prediger, Steven. The Greening of Theology. Atlanta: Scholars Press, 1995.
- Boyd, Ken and Jeff Groeling. PM 627 Creative Use of Computers in the Church (Course Syllabus). Wilmore, KY: Asbury Theological Seminary.
- Briggs, Leslie J., Kent L. Gustafson, and Murray H. Tillman, ed. Instructional Design, Principles and Applications. Englewood Cliffs, NJ: Educational Technology Publications, 1991.
- Chilton, David. Paradise Restored: An Eschatology of Dominion. Tyler, TX: Reconstruction Press, 1985.
- Clemans, E.V. Using Computers in Religious Education. Nashville, TN: Abingdon Press, 1986.
- Creswell, John W. Research Design, Qualitative and Quantitative Approaches. Thousand Oaks, CA: Sage Publications, 1994.
- Dick, W. and L. Carey. The Systematic Design of Instruction. Glenview, IL: Scott, Foresman, 1978.
- Dunning, H. Ray. Reflecting the Divine Image. Downers Grove, IL: InterVarsity Press, 1998.
- Easum, William. Dancing with Dinosaurs: Ministry in a Hostile and Hurting World. Nashville, TN: Abingdon Press, 1993.
- Eggen, Paul and Don Kauchak. Educational Psychology. Upper Saddle River, NJ: Merrill, 1999.

- Ellul, Jacques. The Technological Bluff. Grand Rapids, MI: William B. Eerdmans Publishing Company, 1990.
- . The Technological Society. New York: Alfred A. Knopf, Inc., 1964.
- Erickson, Millard J. Christian Theology. Grand Rapids, MI: Baker Book House, 1985.
- Ference, Pamela R. and Edward L. Vockell. "Adult Learning Characteristics and Effective Software Instruction." Educational Technology July/August 1994: 25-31.
- Ferre', Frederick. Helfire and Lightning Rods. Maryknoll, NY: Orbis Books, 1993.
- Fink, Arlene and Jacqueline Kosecoff. How to Conduct Surveys, A Step-by-Step Guide. Newbury Park, CA: Sage Publications, 1985.
- Gibbons, Andrew S. and Peter G. Fairweather. Computer-Based Instruction: Design and Development. Englewood Cliffs, NJ: Educational Technology Publications, 1998.
- Gilkey, Langdon. Nature, Reality, and the Sacred. Minneapolis, MN: Fortress Press, 1993.
- Gorsuch, Richard L. "Computers: The Old/New Problem of Dominion." Review and Expositor 87.2 (1990): 185-193.
- Granberg-Michaelson, Wesley. Ecology and Life, Accepting Our Environmental Responsibility. Waco, TX: Word Books, 1988.
- Hardee, J. Ralph. "Computers and Local Congregations." Review and Expositor 87.2 (1990): 227-240.
- Henderson, D. Michael. John Wesley's Class Meeting: A Model for Making Disciples. Nappanee, IN: Evangel Publishing House, 1997.
- Hendry, George S. Theology of Nature. Philadelphia: The Westminster Press, 1980.
- Heinich, Robert, Michael Molenda, James D. Russell, and Sharon E. Smaldino. Instructional Media and Technologies for Learning. Englewood Cliffs, NJ: Merrill/Prentice Hall, 1996.

- Hopper, David H. Technology, Theology, and the Idea of Progress. Louisville, KY: Westminster/John Knox Press, 1991.
- House, H. Wayne and Thomas Ice. Dominion Theology: Blessing or Curse? Portland, OR: Multnomah Press, 1988.
- Hutson, Kaylea. "The Ginghamburg Connection." Asbury Theological Seminary Alumni Advance Fall 1996: 4-5.
- Jensen, Theodor I. Creation and Redemption. Philadelphia: Fortress Press, 1967.
- Jonassen, David H. Computers in the Classroom. Englewood Cliffs, NJ: Merrill/Prentice Hall, 1996.
- Joy, Donald M. Bonding, Relationships in the Image of God. Waco, TX: Word Books, 1985.
- Kellough, Richard D. A Resource Guide for Teaching: K-12. New York: Macmillan Publishing Company, 1994.
- Kolb, David A. Experiential Learning. Englewood Cliffs, NJ: Prentice-Hall, 1984.
- . "Learning Styles and Disciplinary Differences." The Modern American College. Ed. Athur W. Chickering and Associates. San Francisco: Jossey-Bass Publishers, 1981. 222-255.
- Landauer, Thomas K. The Trouble with Computers -- Usefulness, Usability, and Productivity. Cambridge, MA: The MIT Press, 1996.
- LeFever, Marlene D. Learning Styles. Colorado Springs, CO: David C. Cook Publishing, 1995.
- McCarthy, Bernice. The 4MAT System. Barrington, IL: EXCEL, 1987.
- McDonagh, Sean. Passion for the Earth. Maryknoll, NY: Orbis Books, 1994.
- Newby, Timothy J., Donald A. Stepich, James D. Lehman, and James D. Russell. Instructional Technology for Teaching and Learning. Englewood Cliffs, NJ: Merrill/Prentice Hall, 1996.
- Newman, Jay. Religion and Technology. Westport, CT: Praeger Publishers, 1997.

- North, Gary. Liberating Planet Earth. Fort Worth, TX: Dominion Press, 1987.
- Northrup, Pamela Taylor and Wesley Little. "Establishing Instructional Technology Benchmarks for Teacher Preparation Programs." Journal of Teacher Education 47.3 (1996): 213-222.
- Pannenberg, Wolfhart. Anthropology in Theological Perspective. Philadelphia: The Westminster Press, 1985.
- . Toward a Theology of Nature, Essays on Science and Faith. Louisville, KY: Westminster/John Knox Press, 1993.
- . What Is man? Philadelphia: Fortress Press, 1970.
- Ponting, Clive. A Green History of the World. London: Sinclair-Stevenson, 1991.
- Poole, Bernard J. Education for an Information Age. Dubuque, IA: Brown and Benchmark, 1995.
- Postman, Neil. Technopoly: The Surrender of Culture to Technology. New York: Vintage Books, 1993.
- Reiff, Judith C. Learning Styles. Washington, D.C.: National Education Association of the United States, 1992.
- Rossman, Parker and Richard Kirby. Christians and the World of Computers. Philadelphia: Trinity Press International, 1990.
- Sargent, Richard B. and John E. Benson. Computers in the Church. Minneapolis, MN: Augsburg Publishing House, 1986.
- Schatz, Steven. "Show/Do/Cue: A Model for Training Use of Software Tools." Technological Horizons in Education 24.2 (1996): 86-89.
- Shlechter, Theodore M., ed. Problems and Promises of Computer-Based Training. Norwood, NJ: Ablex Publishing Corporation, 1991
- Shultze, Quentin J. Internet for Christians. Muskegon, MI: Gospel Films Publications, 1996.
- Slade, Carole. Form and Style. Boston: Houghton Mifflin Company, 1997.

- Slaughter, Michael. Out On The Edge. Nashville, TN: Abingdon Press, 1998.
- . Spiritual Entrepreneurs. Nashville, TN: Abingdon Press, 1995.
- Slouka, Mark. War of the Worlds. New York: Basic Books, 1995.
- Smith, P.L. and T.J. Ragan. Instructional Design. Englewood Cliffs, NJ: Merrill/Prentice Hall, 1993.
- Soelle, Dorothee and Shirley A. Cloye. To Work and to Love, a Theology of Creation. Philadelphia: Fortress Press, 1984.
- Stassen, Glen H. "A Computer-ethical Call to continuous Conversion." Review and Expositor 87.2 (1990): 195-209.
- Stubblefield, Jerry M. The Effective Minister of Education. Nashville, TN: Broadman & Holman Publishers, 1993.
- Sutinen, Erkki. "Computers and Change in Mission." International Review of Mission 83.331 (1994): 543-593.
- Venezky, Richard and Luis Osin. The Intelligent Design of Computer-Assisted Instruction. New York: Longman, 1991.
- Warren, Rick. The Purpose Driven Church, Grand Rapids, MI: Zondervan Publishing House, 1995.

