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LEARNING THEORY IN ADULT DISCIPLESHIP:
A QUASI-EXPERIMENT ASSESSING ADULT LEARNING IN
A SUNDAY SCHOOL CONTEXT

A Dissertation
Presented to
the Faculty of
The Southern Baptist Theological Seminary

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Lorrie Elizabeth Francis

December 2011

APPROVAL SHEET

LEARNING THEORY IN ADULT DISCIPLESHIP:
A QUASI-EXPERIMENT ASSESSING ADULT LEARNING IN
A SUNDAY SCHOOL CONTEXT

Lorrie Elizabeth Francis

Read and Approved by:

Gary J. Bredfeldt (Chair)

Timothy Paul Jones

Date _____

Dedicated to my grandmother, June Reid.

her unflinching support and unconditional love for me
have been a source of strength when times were challenging
and a fine example of the love we should all give to one another.

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LIST OF ABBREVIATIONS

- LTG Life Transformation Group
- SBC Southern Baptist Convention
- SDL Self-Directed Learning
- ZPD Zone of Proximal Development

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PREFACE

Throughout this journey, wonderful, gracious people have provided support and encouragement. Special thanks to the members of Seaton Park Baptist Church for their care and support during my time as a student at Southern Seminary.

I also want to express gratitude for the support of my parents, Roger and Linda Francis, who gave me the foundation of love, faith, and determination to reach this goal.

As my supervisor, Gary Bredfeldt has provided direction for the future and encouragement to continue on this journey to see where God is taking me. Timothy Paul Jones has provided insight as well in his role on my dissertation committee.

Other instructors along the way have molded and shaped me into the person I am today. My thanks to Michael Wilder, Hal Pettegrew, Brian Richardson, Dennis Williams, T. J. Betts, and Tom Nettles for opening new avenues of study that I never expected to explore, much less enjoy.

I could not have made it without the continual encouragement of my co-laborer and sole classmate, Jim Fain, nor the wisdom of those who went before us: Kristi Van Dyke Williams, Carol Olsen, and Steve Yates.

For the understanding and support when long hours were needed to complete this work, I thank the members of the Student Housing staff over the years of our journey together and Andy Vincent, for his patience and quiet support of this endeavor.

Those who provided me with a place to stay while completing my research activities, including Joe and Leila Odum, Paul and Kristina Francis, and Joe and Julia Jordan, gave me an immeasurable gift toward the success of this endeavor.

Finally, thanks to God for His grace that shows me each day His love for me that is from everlasting to everlasting (Jer 31:3). My prayer is that in the years ahead I might be able to share even the smallest part of what His grace has done for me with students so that they may learn the freedom of God's amazing grace.

Lorrie E. Francis

Louisville, Kentucky

December 2011

CHAPTER 1

RESEARCH CONCERN

The processes of learning and development are a part of human life from its beginning. Some aspects of learning and development are obvious – a child learning to walk and talk, the same child growing, attending school, and experiencing the physical and emotional changes of puberty. Learning and development can also be more subtle. As a person moves into and through adulthood, the physical changes of aging may be more visible than any learning or cognitive development taking place. Yet each year, hundreds of thousands of adults participate in formal and informal learning activities (O'Donnell 2006, 7, 38). This study looked at the application of a particular concept, the Zone of Proximal Development (ZPD), to adult learners in the adult learning context of Sunday school in Southern Baptist churches, in order to illustrate quantitatively the ZPD's usefulness as a foundation for teaching strategies for adult learners.

Introduction to the Research Problem

According to a National Center for Education Statistics study conducted between January and April 2005, 44% of adults in the United States ages sixteen and older, reported participating in part-time formal adult education during the previous twelve months (O'Donnell 2006, 7). Participation in informal education was reported at 70 % (O'Donnell 2006, 38). With educational participation at such a high level, it is important for educators of adults to understand the learning and development needs of their learners. Adult learners have been studied in order to identify their unique

characteristics and needs. Several theories that have resulted from these studies are described in the following section.

Learning and Development Theory

If a theory is “a comprehensive, coherent, and internally consistent set of ideas about a set of phenomena” (Knowles, Holton, and Swanson 1998, 17), then development theories describe the phenomena of development in human beings. Some of the developmental theories, such as those of Jean Piaget and Lev Vygotsky are also considered learning theories, describing what is taking place during the phenomenon of learning. Adult education has its own set of learning theories as will be seen in the following section.

Adult Learning

Traditionally, the art and science of teaching has been known as pedagogy (Knowles, Holton, and Swanson 1998, 36) as most of the early work in teaching and learning was concerned with children (Knowles 1984, 5). In fact, most people believed that education was for children and that adults had no need to learn (Lindeman [1926] 1961, 3). It was not until the 1920s that adult learning was considered separately from that of children when adult education became a recognized field of professional practice (Merriam 2001, 3).

Early studies of adult learning focused primarily on whether or not adults could learn through the work of Edward L. Thorndike and his colleagues entitled *Adult Learning* and published in 1928. Looking specifically at learning ability, Thorndike showed scientifically that adults could learn using processes very similar to those applied

by adolescents but with different experiences, interests, and motives to draw upon (Thorndike et al. 1928, 168). At about the same time, Eduard Lindeman was seeking to discover *how* adults learn, publishing *The Meaning of Adult Education* in 1926 which laid a foundation for “a systematic theory about adult learning” (Knowles, Holton, and Swanson 1998, 37). Lindeman described education as life (Lindeman [1926] 1961, 4) and the purpose of adult education as putting “meaning into the whole of life” (Lindeman [1926] 1961, 5). He also indicated that the search for knowledge in general or for specialization does not yield real meaning until employed in social contexts (Lindeman [1926] 1961, 94).

Malcolm Knowles built upon the foundation of those previous efforts, suggesting that adult learning takes a different form than the learning of children thus needing its own designation. The transition to studying adult learning as distinguished from childhood learning was fueled largely by Knowles’ proposal to label this new area of inquiry as andragogy in 1968 (Merriam 2001, 4).

Andragogy

Malcolm Knowles developed a set of six assumptions concerning adult learners that altered the course of adult education as a profession. These are

1. The need to know: Adult learners must be helped to recognize the value or benefit of the learning to be undertaken before it begins
2. The learners’ self-concept: Adult learners find a conflict between his or her self-concept of independence and the conditioned response of education being a passive, dependent interaction. The conflict must be resolved for successful learning to take place
3. The role of the learners’ experience: Adult learners have a greater volume and variety of experience that can be used as part of the learning process. Experience

may also have a negative effect due to bias. Adults may feel rejected personally if their experience is discounted

4. Readiness to learn: Adult learners become ready to learn when they recognize the need in order to deal with real-life situations
5. Orientation to learning: Adult learners are life- or task-centered rather than subject centered. Their learning is focused on gaining the knowledge or skill necessary for real-life situations
6. Motivation: Adult learners are more motivated by internal pressures than external pressures. (Knowles, Holton, and Swanson 1998, 64-68)

Assumptions 1 and 6 were not part of the original set put forth, but have been added over time (Knowles, Holton, and Swanson 1998, 68). Knowles' work contributed to a revolution in research concerning how adults learn. A number of others followed Knowles, looking at the requirements of adult learning processes, the impacts of various learning contexts, and comparisons with traditional learning and development theories.

Self-Directed Learning

One model that began at essentially the same time as Knowles' andragogy is known as self-directed learning or SDL. Allen Tough used the term 'self-teaching' which his research found to represent nearly 70% of the learning projects undertaken in his 1970 survey (Tough 1979, 93). SDL is one aspect of Knowles' view of adult learning that has been nearly universally accepted (Knowles, Holton, and Swanson 1998, 135). In SDL, the process of learning is expected to be learner-directed rather than teacher-directed, leading to personal autonomy as an indicator of being fully "adult" (Knowles, Holton, and Swanson 1998, 135-36).

Another aspect of SDL is informal learning. This is learning that takes place outside of traditional institutions or formal group settings such as colleges or universities,

workers' education, or military training (Brookfield 1986, 147-48). Stephen Brookfield looked at two informal learning settings in particular: learning networks and community action groups (Brookfield 1986, 148). In each case, he found that the community of learners, whether united by a common concern, shared status, or purpose as in a learning network (Brookfield 1986, 151) or collaborating with other adults for the common good or political agenda (Brookfield 1986, 159), the consistent factor was that learning takes place within a group of people, not in isolation. Brookfield found that successful self-directed learners viewed peers and fellow learners as important resources, as models, reinforcers, and counselors thus making the social setting a critical part of SDL (Brookfield 1986, 44). The autonomy of SDL resides in the choice to learn and the content and direction of learning, but others are needed to successfully reach the goal for learning. The social aspects of SDL lead into discussions of critical reflection (Brookfield 1985, 15), social change and ultimately transformation as seen in Mezirow's transformation theory.

Transformational Learning

Transformation Theory begins with the premise that "there are no fixed truths or totally definitive knowledge" (Mezirow 2000, 3), and learning is defined as a process of finding or making meaning through the creation of new or revised interpretations of experience based on prior interpretations (Mezirow 2000, 5). Transformative learning takes place when those previous interpretations of experience are questioned to the point of being changed to be more inclusive and open to new perspectives (Cranton 2006, 36). Conversation with others is a necessary component of identifying those interpretations that need to be changed, finding alternative views, and assessing the validity of those

views (Cranton 2006, 36). According to Mezirow and others who favor the transformative learning process, learning requires other people to be involved in the process (Baumgartner 2001, 19).

A common theme of the adult learning theories discussed previously is the influence of the community on the learning that takes place. Members of the community can be resources, advisors, or partners in dialogue, but they are a critical component of many learning experiences for both children and adults. Vygotsky's sociocultural theory, including the ZPD, is based on the influence and assistance of others in the learning process.

Vygotsky and the Zone of Proximal Development

In the latter half of the twentieth century a voice that had been lost to Western developmental theory was rediscovered after being hidden behind the Iron Curtain since the mid-1930s (Wertsch 1985, 14) – the voice of Lev Semyonovitch Vygotsky. With minimal training in psychology, Vygotsky entered the Soviet psychological community in 1924 by catching the attention of Alexander Luria and Konstantin Kornilov when presenting a paper at the Second Psychoneurological Congress in Leningrad (Kozulin 1986, xvi-xvii; Veer 2007, 22). His presentation resulted in an invitation to join the Moscow Institute of Psychology (Kozulin 1986, xvii). Over the next ten years Vygotsky worked at an incredible pace, addressing areas of psychology and development such as illiteracy, cultural differences, and education for the mentally and physically handicapped (Wertsch 1985, 11). He taught psychology, helping to train the next generation of Soviet psychologists and teachers in Tashkent (Uzbekistan) (Wertsch 1985, 12).

Vygotsky's perspective was unique. He was formally educated in literature (Luria 1978, 15), law, history, and philosophy (Kozulin 1986, xiii) but had no formal medical training until 1931 (Veer 2007, 24). Yet he was able to see connections between the disciplines that those who were more highly trained in one aspect or another could not. Vygotsky's work led him to the development of a concept he called the Zone of Proximal Development or ZPD.

Vygotsky defined the ZPD as "the distance between the actual development level as determined through independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky 1978, 86). In other words, children's learning is extended from what can be accomplished independently to higher levels when guided by adults in areas they could not learn on their own (English Literacy Professional Learning Resource 2009, 2L3_ZPD.htm). This concept is illustrated in Figure 1.

Vygotsky provided an illustration of how the ZPD works in an essay included in the compilation *Mind in Society*. Two children who are chronologically-aged 10 and mentally-aged 8 are provided with opportunities to solve problems with assistance. As a result of the assistance, one child can handle problems up to the level of age 12 while the other can work problems up to age 9. The difference between 8 and 12 or 8 and 9 is each child's zone of proximal development (Vygotsky 1978, 85-86).

Work on the ZPD and other learning concepts halted due to Vygotsky's untimely death in 1934 and the subsequent banning of his work by Stalin's regime

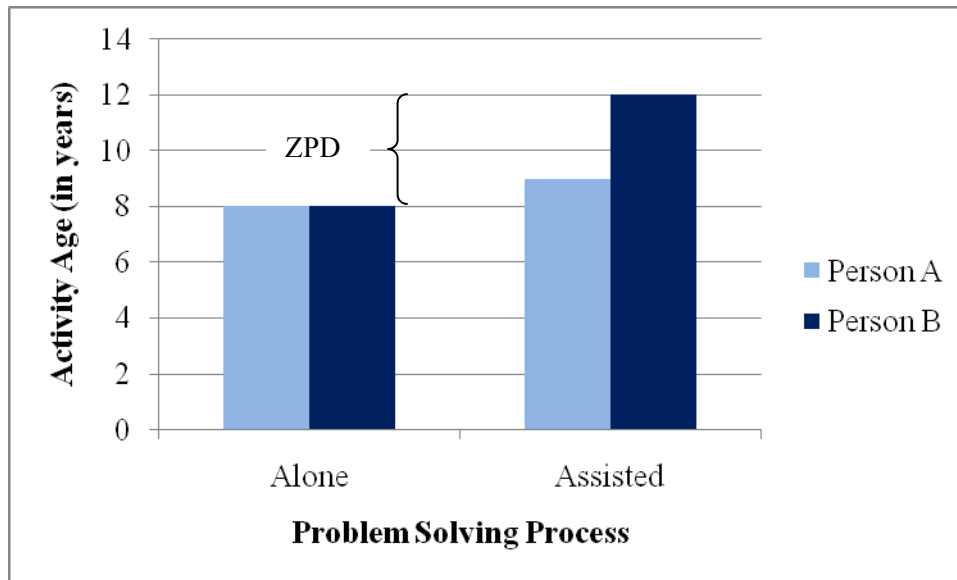


Figure 1. Zone of proximal development

(Wertsch 1985, 14). After Stalin's death in 1953, publication of Vygotsky's work resumed in the Soviet Union in 1956 (Wertsch 1985, 14) and slowly began to spread to other parts of the world. Educators and developmental psychologists have used Vygotsky's research and concepts as the basis for a number of approaches to education such as situated learning (Lave and Wenger 1991) and cognitive apprenticeship (Rogoff 1990). Perhaps the most widely known and used of the approaches based on Vygotsky's work is known as scaffolding.

Scaffolding

In scaffolding, a teacher, parent, or other more advanced learner provides support to a child engaged in an activity that the child could not complete without such support. Through repeated efforts on the same or similar activities, the amount of support provided is reduced as the child shows greater competence in completing the activity (Berk and Winsler 1995, 171) in a manner similar to construction scaffolding which is

removed when the structure can stand on its own. This concept was first described in an article concerning tutoring by David Wood, Jerome S. Bruner, and Gail Ross in 1976 (Wood, Bruner, and Ross 1976, 96) and has been studied and used in various contexts since then. Scaffolding has been used in classrooms for children (preschool, elementary and secondary levels), but it has also been applied to adult learning in teacher education (Brodie 2000), military training (Hannafin et al. 2001) and medical training programs (Dunphy and Dunphy 2003). Both children and adults need the assistance of others for at least some learning tasks.

Attempts have been made in the past to measure the ZPD in children or at least measure the amount of learning that is taking place. Pamela Hayward found that most studies reviewed for her work did not actually succeed in measuring the ZPD (Hayward 1995). Using the context of Sunday school in Southern Baptist churches, this study has shown quantitatively that the ZPD concept can be applied to adults.

Sunday School as Adult Learning Context

Adult learning takes place in different ways, both formally and informally. Formal learning in colonial America was initially religiously based. Yale, Harvard, and other early institutions of higher education were founded for the purpose of training ministers and others in orthodoxy (Anthony and Benson 2003, 303). Over time, the focus of these institutions changed. The challenges of war and broadening of curriculum led the schools away from their Christian roots, but the formal academic setting was maintained (Anthony and Benson 2003, 304).

With the official founding of Sunday school in 1781 England (Booth 1980, 100), the opportunity was created for the church to conduct less formal education.

Although originally started for children (Pray 1847, 134-35), Sunday school arrived in America by 1791 (Anthony and Benson 2003, 268) and was established for adults by 1815 (Pray 1847, 211). Today, more than 4.6 million adults over age 18 are enrolled in Sunday school in SBC churches and approximately half of these adults attend on a regular basis (Lifeway 2008, 3). Sunday school provides a laboratory for examining adult learning in the United States and served as the context for this particular research.

Spiritual Formation

Spiritual formation has been described as “the intentional communal process of growing in our relationship with God and becoming conformed to Christ through the power of the Holy Spirit” (Wilhoit 2008, 23). This and similar descriptions emphasize the continuing nature of spiritual formation; significant permanent change in the person engaged in spiritual formation; and the goal of becoming more like Jesus Christ.

As indicated by the term, spiritual formation involves a process which is called sanctification (Johnson 1989, 104). This lifelong process begins at conversion when the person’s legal status before God is changed (Erickson 1998, 980) and continues as character matures and the person becomes more and more conformed to the image of Christ (Grudem 1994, 746).

Sanctification is a supernatural process in which the Holy Spirit works to transform a Christian into the likeness of Christ (Erickson 1998, 980; Grudem 1994, 754). The evidence of the Holy Spirit’s work is the production of the fruit of the Spirit: love, joy, peace, patience, kindness, goodness, faithfulness, gentleness, and self-control (Gal 5:22-23) (Grudem 1994, 754).

Spiritual formation also requires the Christian to take an active role in the development of holiness (Erickson 1998, 983). Sanctification must be intentionally cultivated through activities such as Bible reading, meditation, worship, fellowship, and service (Grudem 1994, 755), called spiritual disciplines. The community plays a crucial role in spiritual formation (Estep 2002, 61). The disciplines of fellowship and service require participation in a community. Worship can be accomplished privately or in community with others. Personal devotions and Bible reading are very important, but maximum spiritual growth cannot be attained in isolation (Waggoner 2008, 310). Community provides accountability, encouragement, and support for the spiritual formation process.

Learning in different contexts, theories, and life stages have been found to share the common element of community. This aspect of learning is foundational for Vygotsky's ZPD and for spiritual formation. This study has shown that more learning takes place in community, rather than isolation, and through the use of teaching techniques invoking the ZPD.

Research Purpose

The purpose of the research was to explore the application of Lev Vygotsky's Zone of Proximal Development to adults in a Sunday school context.

Delimitations of the Study

Few studies can hope to be broad enough to answer all questions in a particular area. This study was delimited to adults ages 18 and older attending Sunday school in a Southern Baptist church. The study was also delimited by focusing only on the

application of Vygotsky's Zone of Proximal Development and not other specific learning theories. Four SBC churches were used as sample sites, further delimiting the study results to those sample churches.

Research Questions

The following questions have been addressed through this study:

1. Will adults taught in small groups learn significantly more than those adults left to learn on their own?
2. Does the relationship persist even while taking into account age, gender, and educational level?

Research Hypotheses

For the purposes of this primarily quantitative research, the research hypotheses were as follows:

1. Additional small group discussion and learning opportunities will produce more measurable learning in adults than only large group presentation of material.
2. As adults age, the benefit of small group learning opportunities decreases but is not eliminated.
3. Gender is not a determining factor in the amount of learning that takes place in small groups.
4. Education level is not a factor in the amount of learning resulting from small group learning activities.

Terminology

The following terms were defined for use in this research study:

Discipleship. Discipleship is the process of becoming and being a disciple. J. Oswald Sanders defined a disciple "a learner or pupil who accepts the teachings of Christ, not only in belief but also in lifestyle" (Sanders 1994, 8). For the purposes of this

study, discipleship was the intentional gathering together of small groups of people in order to learn the teachings of Jesus Christ and to provide accountability for the application of those teachings to everyday life.

Formal adult education. Formal adult education requires an instructor. These learning activities exclude “full-time only enrollments in college/university or vocational/technical credential programs” (O’Donnell 2006, 48). Activities included in this area are ESL classes, GED preparation classes, part-time college/university degree or certificate programs, part-time vocational/technical credential programs, apprenticeships, work-related courses, and personal-interest programs (O’Donnell 2006, 48).

Hawthorne effect. Defined as “an observed change in the behavior of subjects in a research investigation based upon their awareness of participating in an experiment, their knowledge of the researcher’s hypothesis, or their response to receiving special attention” (Gough 2001, 324), this phenomenon is a threat to external validity because the results may not be as a result of the treatment but the participants’ realization “of their role as guinea pigs” (Cohen, Manion, and Morrison 2007, 156). It was first discovered during worker productivity research in 1927 at the Western Electric Company’s Hawthorne plant in Cicero, Illinois (Gough 2001, 324).

Informal adult education. Informal adult education includes activities engaged in for personal interest without an instructor. These include computer software tutorials, reading books or manuals, watching videos or television, reading how-to or consumer magazines, attending clubs or support groups, and attendance at conventions or conferences (O’Donnell 2006, 52).

Learning. Learning is the demonstrable addition of knowledge, comprehension and application as defined using Bloom's taxonomy. The taxonomy is organized such that the objectives of one class are likely to be built on those of the preceding classes. The entire taxonomy consists of six classes in the following order: knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom 1956, 17-18). For the purposes of this study, only the first three classes were considered in testing for learning that has taken place.

Middle adult. Middle adults are those persons between the ages of 35 and 64 at the time of the study. The age range was chosen to coincide with the population data available from Lifeway Research which maintains two groups designated as Adults for Sunday school enrollment: ages 35-54 and 55-64 (Lifeway Research 2008, 4).

Nonrandomized control group pretest-posttest design. A quasi-experimental research design that uses a pretest in order to confirm similarity between two groups – one serving as a control group – without selecting the members of each group randomly. The non-control group experiences a treatment prior to both groups undergoing a posttest to identify the possible results of the experimental treatment (Leedy and Ormrod 2005, 227).

Open group. An open group is defined as “an ongoing class that allows entry at any point” (Rainer 2010, 5). This term was used for the purposes of this study as part of the definition of a Sunday school class.

Scaffolding. Scaffolding has been defined as “a changing quality of support over a teaching session, in which a more skilled partner adjusts the assistance he or she provides to fit the child's current level of performance. More support is offered when a

task is new; less is provided as the child's competence increases, thereby fostering the child's autonomy and independent mastery" (Berk and Winsler 1995, 171). For this research, the functional definition was a teaching technique in which a teacher or more capable peer provides varied levels of support based on the learner's competence in addressing a particular problem or activity over time.

Senior adult. Senior adults are those persons aged 65 and older at the time of the study. The age range was chosen to coincide with the population data available from Lifeway research which maintains one group designated as Senior Adults for Sunday school enrollment, ages 65 and up (Lifeway Research 2008, 4).

Spiritual formation. Spiritual formation includes both the progressive supernatural work of the Holy Spirit in sanctification (Erickson 1998, 980; Grudem 1994, 754) and the activities of the Christian in response to that work which together transform a person into the likeness of Christ (Erickson 1998, 983; Grudem 1994, 755). Spiritual formation is the ultimate purpose of Christian education in the church as seen in Romans 12:2, "Be transformed by the renewing of your mind."

Sunday school. "Sunday school is the foundational strategy in a local church for leading people to faith in the Lord Jesus Christ and for building Great Commission Christians through Bible study groups that engage people in evangelism, discipleship, fellowship, ministry, and worship" (Barnes 2000, 4). For the purpose of this study, Sunday school was considered as using the above definition for open group classes meeting on Sunday in conjunction with a worship service at the primary church facility.

Young adult. Young adults are those persons aged 18 to 34 at the time of the study. The age range was chosen to coincide with the population data available from

Lifeway Research which maintains two groups designated as Young Adults for Sunday school enrollment, ages 18-24 and 25-34 (Lifeway Research 2008, 4).

Zone of proximal development. The ZPD was defined by Lev Vygotsky as “the distance between the actual development level as determined through independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky 1978, 86).

Procedural Overview

This study was conducted using a nonrandomized pretest-posttest control group research design (Leedy and Ormrod 2005, 227). At each of four sample sites, the adults were administered an objective basic Bible knowledge test (pretest). One to four weeks later, a video Bible lesson was presented to the adults after which the large group was divided into control and test groups. All participants received an after lesson handout with instructions. The control group participants were dismissed while participants in the test group worked through the activities on the after lesson handout together in small groups. One week later, both groups were tested over the Bible lesson (posttest) in order to obtain data on the amount of learning for each group.

Following the posttest, volunteers from the control and test groups were asked to describe their perceptions of the benefit, if any, of the after lesson handout activities and any impact those may have had on their learning. The qualitative data gathered was primarily to provide insight concerning the research design and for future research.

The pretest was an objective 20-question Bible knowledge test previously given to freshmen students at Wheaton College (Black 2005, daveblack050513.htm).

Scores on this test were used to show essential equality between the control and test groups with regard to Bible knowledge prior to the experimental procedure. The posttest used an instrument testing the learners in the stages of knowledge and memory, understanding and comprehension, and application from Bloom's taxonomy (Bloom 1956, 17-18). The format of the posttest was multiple-choice. Both tests also collected demographic data including gender, date of birth, and education level for use in identification of group assignments and statistical analysis.

Statistical analysis was used to determine if the learning of the test group was significantly different from that of the control group. Demographic data collected with each test was used to identify other correlations between learning as the dependent variable and the independent variables of age, gender, and education.

Research Assumptions

The following assumptions influenced this study and the researcher.

1. The researcher assumed that secular learning theories can be used without accepting the theoretical assumptions of the originating theorists.
2. The research assumed that learning is measurable and can be described quantitatively.
3. The researcher assumed that the experimental procedure would provide access to the desired data.

CHAPTER 2

PRECEDENT LITERATURE

The foundation for research is found in the writings and work of those who have gone before. For a study undertaken through a theological institution, the first layer of a strong foundation is found in Scripture which undergirds the layers to be constructed from precedent literature.

Foundations in Theology

Both the Old and New Testaments of the Bible reveal aspects of history in the Judeo-Christian tradition. Educational concepts are the focus of the current study, particularly as associated with partnered or community-based learning. From the Old Testament, a brief snapshot will be shown of the educational system for the people of Ancient Israel followed by a discussion of the portion of Scripture known as wisdom literature. Consideration of New Testament education will focus on teaching methods employed by Jesus and Paul.

The foundation for education among Christians began with the early foundations of Christianity and Judaism – the Hebrews. A nomadic people, there is no clear evidence of formal education among the most ancient Hebrews. Education was rather a family- and community-centered practice which focused on skills for daily living, trade or vocation, and the teachings of God (Estep 2003b, 2.2).

Education in the Family

During patriarchal times, the time of Abraham, Isaac, and Jacob, and even earlier, education among the Hebrews and their predecessors was first and foremost a family responsibility (Anthony and Benson 2003, 25). Fathers taught their sons the skills necessary to tend the livestock, keeping the animals safe, fed, and watered. Any vocational skills would traditionally be passed along through sons observing and assisting their fathers (Anthony and Benson 2003, 27). These were also times of teaching spiritual things for all of life was considered to be about pleasing God and living according to His directives.

Deuteronomy 6:4-9, illustrates the educational method and focus of the young Hebrew nation. It states,

Hear O, Israel: The Lord our God, the Lord is one. Love the Lord your God with all your heart and with all your soul and with all your strength. These commandments that I give you today are to be upon your hearts. Impress them on your children. Talk about them when you sit at home and when you walk along the road, when you lie down and when you get up. Tie them as symbols on your hands and bind them on your foreheads. Write them on the doorframes of your houses and on your gates.

Verse 4, the first sentence in the passage above, is known as the *Shema*. In the Jewish tradition this was the “heart of the Law” and was quoted by Jesus as “the fundamental tenet of Jewish faith (Matt. 22:34-39, Mark 12:28-31, Luke 10:25-28)” (Merrill 1994, 163). As part of his pronouncements concerning the importance of the Law, Moses declared to the people in Deuteronomy 4:9, “Only be careful, and watch yourselves closely so that you do not forget the things your eyes have seen or let them slip from your heart as long as you live. Teach them to your children and to their children after them.” Therefore, the instructions found in Deuteronomy 6 to include

God's commands in everyday life formed the educational imperative for the Hebrew people from that point forward (Merrill 1994, 166-68).

At the same time, girls and young women were educated in the duties and responsibilities of the home by their mothers. Skills of sewing, cooking according to the dietary laws, and childcare were learned by the women of the household working together. Formal schooling was not needed by girls whose place was to be in the home (Anthony and Benson 2003, 27).

In both practical daily skills and spiritual growth, Hebrew parents and other members of the household (Estep 2003b, 2.4) fulfilled the role of the "more knowledgeable other" in Vygotsky's model. They taught the children by incorporating them into the activities of daily life – likely allowing the children to participate more and more as skill increased. Children of various ages worked together in a learning community to accomplish the task and support the younger children (Estep 2003b, 2.4).

The family is the first community to which a child is introduced and the education provided in that family community helps prepare the child for learning in the wider community beyond his or her home.

Education through the Community

As the Hebrew people grew in number and became a nation, they formed into tribes based on their ancestral ties to Jacob's sons (Gen 49:28) leading to broader community-based education. Following the departure of the nation from Egypt in what is known as the Exodus (Exod 12:31-41), Moses, their leader, was given the Ten Commandments by God (Exod 20:2-17). The Ten Commandments or Decalogue contained the central commandments or instructions for the people, but Moses was also

given instructions concerning worship and sacrifices, cleanness rituals, dietary restrictions, and other guidelines regarding social behavior and religious obligation. Many of these are recorded in the book of Leviticus.

Just prior to arriving in their new homeland, the tribe of Levi was given the responsibility to teach the people the law (Deut 33:10) in addition to their duties assisting the priests (Bramer 1996, 479). Public readings of the Law were held on special occasions and the Levites were called upon to explain the Law to the gathered people (Zuck 2001b, 233).

Another aspect of community-based education among the ancient Hebrews involved the national feasts and festivals that dotted their calendar (Anthony and Benson 2003, 27). Leviticus 23 records God's instructions to Moses and the people concerning key feasts to be held regularly. First and foremost was the Sabbath (Exod 20:8-11; Lev 23:3) which occurs every seventh day; set aside as a holy day of rest in commemoration of God's work in Creation (Gen 2:2-3) (Siew 2001, 325). The Passover and Feast of Unleavened Bread (Lev 23:4-8) were to be celebrated to remember the nation's deliverance from Egypt and the haste with which they departed. Another annual feast is called the Feast of Tabernacles or Booths (Lev 23:33-43) which celebrates the harvest while commemorating the time when the people lived and worshiped in tents during their journey from Egypt to Canaan, their new homeland. All the feasts and festivals were a form of community, experiential learning during which children were involved and could ask questions in order that the meaning of the events could be passed down from generation to generation (Siew 2001, 325). Vygotsky's work was based on the idea that learning was socially and culturally driven (Vygotsky 1978, 90). The Hebrew children

learned about their history during feasts, festivals, and public reading of the Law as part of their culture which led to their continued development.

Education During and After the Exile

In 586 B.C., the Babylonians under Nebuchadnezzar overran Jerusalem, destroyed the temple, and carried most of the people off to other parts of their empire. The Jewish communities that developed from this dispersion of the people later came to be known as the Diaspora. This was also the beginning of the approximately seventy-year period called the Exile (Estep 2003a, 3.1). While in exile and without a temple to serve as the center for religious practice and education, the Jews created the synagogue to serve as a means for maintaining the religious and cultural identity of the Hebrews who became known as Jews during this time (Anthony and Benson 2003, 34; Estep 2003a, 3.1-4). The primary curriculum was the Law or Torah. This system continued even after the Jews were allowed to return to Jerusalem and the Temple was rebuilt (Estep 2003a, 3.4-5).

During the post-exilic period into the first century A.D., education among the Jews became more formalized through the synagogues and with the introduction of rabbinical schools. While the synagogues were originally for worship and adult (male) religious education, the leaders determined that childhood education was necessary. The Diaspora had created a multicultural- and multilingual-people. Parents were no longer able to adequately prepare their children for further education. Formal education became necessary to maintain the unique Jewish religion, traditions and identity (Estep 2003a, 3.5-6). Formal educational institutions for boys were created beginning in the fourth century B.C. Ben Sira formed one of the most well known of the early schools in the

second century B.C. (Heaton 1994, 6). Eventually, a three-level educational system was created including elementary, secondary, and higher education.

The diversity which became part of the Jewish people through the Diaspora also expanded the educational needs of the people beyond that which could be provided by parents and community alone. As Vygotsky would later show, formal instruction was needed to continue the children's learning and therefore development in the expanding world of the Roman empire to which the Jews belonged.

Role of Wisdom Literature in Jewish Education

Biblical wisdom literature is contained within the scriptural grouping known to the Jews as the Writings. Included in the wisdom literature designation are the books of Proverbs, Job, and Ecclesiastes and several of the individual psalms (Bullock 1996, 823). Within wisdom literature are two types of writing: speculative or high wisdom which is found in Job and Ecclesiastes, and low or practical wisdom found primarily in Proverbs. The wisdom psalms are split between the two different types (Shupak 1993, 12; Bullock 1996, 823). Each type will be addressed in the paragraphs to follow.

Of first concern is the purpose and use of wisdom literature in ancient Israel and Jewish education. The general consensus is that wisdom literature was used for educational purposes (Swift 1919, 84; Zuck 2001c, 233-34; Morgan 2002, 30).

According to James L. Crenshaw, the nature and structure of Ecclesiastes suggests use in a school environment (Crenshaw 1998, 228); however, Michael Fox wrote that there is no clear evidence from Proverbs that they were created specifically for school use (Fox 1996, 229-32). The uses most accepted by scholars are for family education or private study (Scott 1995, 67; Fox 1996, 232; Bullock 1995, 23).

From an educational perspective, an important characteristic of biblical wisdom literature compared with the books of the Law and Prophets is its orientation on the individual rather than the nation. Wisdom writings address the individual and work up through society while the law and prophetic writings are addressed to the nation with the intention of filtering the information down (Bullock 1996, 823). Individuals form the building blocks of a society and thus must meet community expectations for moral and ethical behavior (Bullock 1996, 823). Another characteristic of wisdom literature is the experience upon which it is based. Wise leaders distill the lessons they have learned through their own lives and the lives of their contemporaries into sayings that are easy to remember and provide the kernel of knowledge to pass along to future generations (Crenshaw 2005, 110). Both of these characteristics support the community and family based educational methods of ancient Israel. Vygotsky found in his research that children are learning from the very beginning of their lives as they imitate parents and others older than themselves to learn language and behavioral norms (Vygotsky 1978, 84). Those behavioral norms for the Jewish people were codified within the wisdom literature.

Influence of Other Wisdom Traditions

Wisdom literature was a common genre in the ancient Near East. Biblical wisdom literature reflects the influence of wisdom traditions from other countries with scripture alluding to the wisdom of Egypt in 1 Kings 4:30 (Ross 1995, 37). The clearest example is found in Proverbs 22:17-24:22 titled *The Words of the Wise*. This passage has frequently been compared to the Egyptian document known as the *Instruction of Amenemope* from the New Kingdom period (1580 to 1100 B.C.) (Ross 1995, 36). The document was written by Amenemope to instruct his youngest son (Shupak 2005, 208;

Ross 1995, 36). Nili Shupak presents an analysis of the arguments for and against influence of this particular document on Proverbs 22:17-24:22. For example, Proverbs 23:4-5 reads, “Do not wear yourself out to get rich; have the wisdom to show restraint. Cast but a glance at riches, and they are gone, for they will surely sprout wings and fly off to the sky like an eagle” while the Instruction of Amenemope states in 9:14-10:4, “Labor not to seek increase . . . [perchance] they have made themselves wings like geese, they have flown to heaven” (Waltke 1995, 62). According to Shupak, R. N. Whybray’s writings against Amenemope’s influence do not provide sufficient evidence to refute J. A. Emerton’s arguments or her own findings (Shupak 2005, 216). Whybray argued that the author of Proverbs had no direct contact with the Instruction of Amenemope because only some subjects in the Instruction are found in Proverbs; the order of appearance of these subjects is not identical; the book of Proverbs is not one homogeneous unit but material compiled from a number of sources; and the passage in question is more similar to Proverbs 1-9 than the Instruction of Amenemope (Shupak 2005, 206-07). Emerton countered Whybray’s arguments including his interpretations of *Kethiv* and *Qere* which have been translated in a manner parallel to the Egyptian writing’s ‘thirty’ indicating a connection between the passages (Shupak 2005, 207-08). In addition, Shupak found that the Hebrew text is much easier to understand when taken in light of the Egyptian text; and the use of concepts, terms, and images common to an Egyptian context rather than a Hebrew context in the Proverbs passage makes the influence of the Instruction of Amenemope or another Egyptian document highly likely (Shupak 2005, 210-14).

Influence by other documents and traditions does not negate the divine inspiration of the biblical text (Ross 1995, 36). The Jewish writings remain unique in

their emphasis on a personal relationship with God (Ross 1995, 38). He is able to use the form and content of other writings for His purposes. This is particularly evident in the book of Proverbs.

Proverbs

The book of Proverbs is a compilation of several sections from different sources and time periods (Crenshaw 1998, 232). The most common structure within the book of Proverbs is a proverb which is described as “a brief pungent maxim crystallizing experience. It is not intended to be a precise statement that can be taken as a promise or an absolute, but instead is a general principle crafted to be memorable” (Estes 2005, 219).

From an educational perspective, the book of Proverbs is “unparalleled as an educational guide to a meaningful, fulfilling life . . . a teaching manual with instructions on relationships in the home, business, and society” (Zuck 2001c, 234). Primarily didactic in nature, proverbs can be formal instructions using imperatives or prohibitions; sayings that identify traits or actions to be followed or avoided; example stories; wisdom speeches; or numerical sayings (Ross 1995, 42). For example, Proverbs 16:3 which reads, “Commit to the Lord whatever you do, and your plans will succeed” is an imperative proverb while 6:16-19 represent a numerical saying. Proverbs also use structural methods for instruction such as repetition, contradiction (Yoder 2005, 175-83), and parallelism (Ross 1995, 42). According to R. B. Y. Scott, the couplet-parallel couplet form of many proverbs may have had a catechetical type instructional purpose with the teacher reciting the first line and students answering with the second line. Examples of these proverbs include 10:1, 14:9, 14:27, and 16:26, which says, “The laborer’s appetite works for him; his hunger drives him on.” Perhaps this type of

instruction is what Isaiah was thinking of in 28:10, “For it is: do and do, do and do, rule on rule, rule on rule, a little here, a little there” (Scott 1995, 71-72).

Theologically, the book of Proverbs is significant for its clear affirmation that God brought wisdom into existence, revealed it to humanity, and maintains it (Waltke 1995, 63). However, the sayings contained in the book are not strictly religious but rather apply to the problems of all humanity not just a religious community (Ross 1995, 42). As part of the wisdom literature, Proverbs provides the instructions for living a “useful and effective life” (Ross 1995, 35). The practical wisdom of Proverbs is supplemented by the speculative wisdom of Job and Ecclesiastes (Estes 2005, 281).

Job and Ecclesiastes

The books of Job and Ecclesiastes are classified as speculative or reflective wisdom (Estes 2005, 281). These books may have been intended to practice writing while providing resources for reflection (Crenshaw 1998, 222).

More specifically, the message of Job is the struggle to comprehend the ways of God (Fee and Stuart 2002, 121; Estes 2005, 27). Another aspect of the book’s message is a search of the source for wisdom, ultimately found in God (Fee and Stuart 2002, 121). The book of Job is representative of the breadth of Old Testament wisdom as “it probes the deepest theological and philosophical questions” (Estes 2005, 24).

In Ecclesiastes, the message is that “a comprehensive biblical worldview must account for all of life, even those portions that most resist typical categories” (Estes 2005, 281). Also referred to as Qoheleth, which is Hebrew for teacher, the nature of the book suggests it was likely that advanced students read it as part of their studies (Crenshaw

1998, 228). One of the philosophical areas explored in Ecclesiastes in the question of human significance (Estes 2005, 276).

Together, Job and Ecclesiastes provide the depth to match the breadth of subjects considered in Proverbs. Psalms provides additional resources for teaching and expressing God's wisdom.

Wisdom Psalms

The psalms identified as wisdom psalms are 1, 37, 49, 73, 112, 127, and 128 (Bullock 1996, 823). Of these, 37, 49, and 73 are considered speculative wisdom while 1, 112, 127, and 128 are classified as didactic psalms (Bullock 1996, 823). Other sources identify psalms 33 and 78 as wisdom psalms as well (Fee and Stuart 2002, 131-43).

The entire collection is known as Israel's hymnal (Zuck 2001c, 233; Estes 2005, 141) which is also a powerful educational tool. Contained within its verses, the book of Psalms provides its readers with doctrinal content, frequent reminders that God teaches, and demonstrations of how learning can be encouraged through the words and structure of individual psalms (Zuck 2001c, 233-34).

Contributions of Wisdom Literature

As described previously, biblical wisdom literature is made up of the books of Job, Proverbs, and Ecclesiastes, and parts of Psalms. Some authors include Song of Songs in this category (Fee and Stuart 2002, 119-20). Whether part of the practical or speculative tradition, each of these resources provided instructional material for Jewish education. Much of that education seems to have taken place in the home or through the community. Wise persons shared their experience and knowledge with those younger

and less experienced, often in the form of proverbs or sayings such as those collected in the book of Proverbs. In this way, the community's expectations were passed along to future generations as part of their culture.

The wisdom of other nations was brought into the Jewish tradition as well, expanding the knowledge base to apply generally to all of humanity while maintaining the specific Jewish worldview necessary for inclusion in their collection of authoritative writings (Ross 1995, 38). Whether the wisdom literature truly constituted curriculum for formal education or not, it is clear from the research that there was an educational purpose for the books. That educational purpose is consistent with Vygotsky's concepts. Parents, older children, and teachers, using material such as proverbs, provide learning opportunities for children in order to create what Vygotsky would call a zone of proximal development so that the children would continue to grow in their knowledge and understanding of the behavioral expectations of the culture.

Jesus' Methods of Teaching

Of all the teachers in history, Jesus has been called "the most famous teacher of the Western world" (Hight 1950, 190). The available records of his teaching are not in a textbook or handbook of pedagogical methods, but through the accounts provided in the Bible, educational principles and the seeds of current teaching methods can be found including those of Lev Vygotsky.

The purpose of Jesus' teaching was two-fold. First, he came and taught so that "they might have life and have it to the full" (John 10:10) (Price 1946, 31). This individual focus included the ideas of loving God with the entire being and loving others (Mark 12:30-31). The second part of Jesus' teaching purpose was to prepare the nations

for “the Kingdom of God is near” (Mark 1:15) (Richardson 1932, 21). In this case, Jesus was calling the people to repent or turn from their sinful ways and make ready for the advent of a new covenant, the fulfillment of God’s promise to restore the relationship between Himself and humanity (Brooks 1991, 47). Both purposes include community, first in cultivating relationships through personal actions, and second by drawing people together into a community of Jesus’ followers.

The content of Jesus’ teaching was radical for his time. He did not teach political uprising or rebellion, nor did he teach that all aspects of the current religious practice were wrong. Instead he taught about being a servant leader (John 13:1-17) (Zuck 1995b, 245), developing a personal and intimate relationship with God (John 3:3; Mark 12:30) (Price 1946, 36-37), and becoming part of a new primary family – the family of God (Hellerman 2009, 64-67).

In order to teach there must be learners. Jesus taught four distinct groups with varying degrees of success. Many times in Jesus’ ministry his learners were a part of crowds (Richardson 1932, 191; Zuck 1995b, 118). Another group Jesus taught included the scribes, Pharisees, and Sadducees – the religious leaders of his day. Limited success in reaching these Jewish leaders can be seen through Jesus’ interaction with Nicodemus (John 3) and his subsequent defense of Jesus before the other Pharisees (John 7:50-52) and participation in Jesus’ burial (John 19:38-42), but it was primarily an adversarial relationship (Zuck 1995b, 134-54). The third group Jesus taught was his disciples, including the twelve apostles. Frequently, Jesus taught them all together, but he also spent time separately with the group of twelve for special training. A final group consisted of Peter, James, and John. This core group received a few special opportunities

to observe and participate in Jesus' work such as at the resurrection of Jairus' daughter (Mark 5:22-23, 35-43; Luke 8:40-41, 49-56), during the Transfiguration (Matt 17:1-13; Mark 9:2-12; Luke 9:28-36), and at the Garden of Gethsemane (Matt 26:36-46; Mark 14:32-42), as preparation for their future leadership roles in the early church. Each of these groups represents a community brought together by common interests, beliefs, or experiences. Different communities require the use of a variety of teaching methods.

Jesus used a variety of methods to present his message to the people he encountered (Marquis 1913, 28-33). He told stories, asked questions, modeled character and principle. He used figures of speech, object lessons and lectures (Marquis 1913, 28-33; Price 1946, 92-115). For the purposes of this study, the discussion is centered on four particular methods or approaches Jesus used in his teaching: parables, questions, modeling and mentoring, and laboratory teaching.

Parables

Jesus was a prolific teller of stories or parables and a significant number are recorded in the synoptic books of Matthew, Mark and Luke (Zuck 1995b, 310). The word "parable" is defined by Robert Stein as "an analogy used in an illustrative way" (Stein 1994, 34). Another way to describe a parable is "a story that places one truth beside another to clarify or emphasize a point" (Zuck 1995b, 307). Both of these definitions describe ways Jesus made use of parables in his teaching.

Some of the most well-known of Jesus' parables are the Good Samaritan (Luke 10:25-37), the Lost or Prodigal Son (Luke 15:11-32), and the parable of the Sower (Matt 13:5-8; Mark 4:3-8; Luke 8:4-8, 11-15) (Stein 1994, 33). The first two parables may be considered example or illustrative parables, those which aided his listeners in

understanding the point that was being made (Price 1946, 104). Through the parables, Jesus was able to convey information to a large group of people at one time using a story to which they could relate (Yount 1996, 355) in much the same way proverbs were taught to illustrate important truths and wisdom.

Other parables, such as the parable of the Sower, were apparently used to hide the true meaning of Jesus' message from his enemies or others who were not ready or able to discern its import (Stein 1994, 39). In Mark 4:11 Jesus states, "The secret of the kingdom of God has been given to you [disciples]. But to those on the outside everything is said in parable." Jesus had reason not to speak plainly when teaching larger groups or addressing the scribes and Pharisees. There were those within the government and religious leadership who would have misunderstood his message to be a political threat (Stein 1994, 40). The parables also kept the specific hope of Jesus' message from those whose hearts were not receptive to what he was sharing (Zuck 1995b, 313). When necessary, Jesus took the time to explain the meaning of the parables to his disciples in private (Mark 4:34).

Questions

Another tool that Jesus used in his teaching was the question. Jesus used questions for a number of reasons: to attract attention, get a point of contact, help his listeners think and reflect, emphasis, application, force an admission, or answer a question (Price 1946, 111-14; Delnay 1987, 74-82). For example, in Luke 10:36 following his parable of the Good Samaritan, Jesus asked, "Which of these three do you think was a neighbor to the man who fell into the hands of robbers?" Here, Jesus reverses the question from 10:29 that prompted the parable and forces the lawyer to

answer the real question of how to be a good neighbor (Stein 1992, 317-18). In Matthew 20:22, Jesus asks James and John a question in response to their mother's request that they be seated to his right and left, the seats of honor, when his kingdom comes. "Can you drink the cup I am going to drink?" With "cup" being a "common Old Testament metaphor for suffering" Jesus was asking James and John if they truly understood the enormity of what they were asking (Blomberg 1992, 306-07). As seen in this example, the "supreme value of almost any question is that it invites a person to think" (Delnay 1987, 73). Questions allowed Jesus to draw his listeners into his teaching and interact with them in ways that discourse or other methods did not.

Modeling and Mentoring

Even when the crowds were gone and all was quiet, Jesus lived with character and integrity, setting the example for his community of followers. He was a part of the daily lives of his disciples, especially the Twelve, which gave them the opportunity to observe and compare his words and actions (Marquis 1913, 34-35; Phipps 1993, 62). Jesus may have had an unusually significant amount of informal contact with his disciples, especially when compared to modern instructors (Phipps 1993, 61). The close contact also allowed Jesus to know the small details of their lives and to be present to take advantage of "teachable moments" whenever and wherever those arose (Marquis 1913, 34-39).

Peter and his brother Andrew were fishermen. In one of those teachable moments, Jesus found them casting their nets and called out to them, "Come follow me . . . and I will make you fishers of men" (Matt 4:20). As disciples, Peter and Andrew

would try to gather in more followers of Christ with the net of the gospel in a manner similar to casting their nets and gathering in fish (Blomberg 1992, 91).

Through their close association, Jesus developed relationships with his disciples to the point of understanding their personalities and learning challenges (Richardson 1932, 130-33). He was mentoring them, training them for their future ministry. Jesus invested himself in their lives as individuals and in the entire group (Richardson 1932, 130-33). Living among the disciples allowed Jesus to be a living example of applying his teachings and wisdom for the people of the community.

While serving as a mentor and model for the disciples, Jesus also modeled specific actions for the Twelve. One of the best known accounts of Jesus modeling a concept for the disciples took place at the Passover meal just before Jesus' arrest (Phipps 1993, 65-66). Recorded in John 13, Jesus took on the role of a slave and washed the disciples' feet. Through his actions, Jesus was "modeling true servanthood" (Burge 2000, 368). When finished, Jesus first asks if the men understand what he has done then provides them with the explanation,

You call me Teacher and Lord, and rightly so, for that is what I am. Now that I, your Lord and Teacher, have washed your feet, you should also wash one another's feet. I have set you an example that you should do as I have done for you. I tell you the truth, no servant is greater than his master, nor is a messenger greater than the one who sent him. Now that you know these things, you will be blessed if you do them. (John 13:13-17)

According to Gary Burge, Jesus' "model of self-giving love can become a natural feature of the community that follows him and imitates him" (Burge 2000, 371). Jesus did not allow the disciples to be completely passive in their training; rather he required them to practice what they had observed him doing.

Laboratory Teaching

In educational settings, laboratories are usually provided for learners to practice the knowledge and techniques they have been learning. The same method is found in Jesus' teaching (Price 1946, 43).

Recorded in Matthew, Mark, and Luke is the account of Jesus sending out the twelve apostles. In Matthew 9:35, "Jesus went through all the towns and villages, teaching in their synagogues, preaching the good news of the kingdom, and healing every disease and sickness." The disciples were with him and observed Jesus' actions. Then Matthew 10:1 records that Jesus called the Twelve together and gave them the authority to heal and drive out evil spirits before giving them the charge to "Go rather to the lost sheep of Israel. As you go, preach this message: 'The kingdom of heaven is near.' Heal the sick, raise the dead, cleanse those who have leprosy, drive out demons. Freely you have received, freely give" (Matt 10:6-8). The Twelve were sent out by twos (Mark 6:7) into Israel and did as Jesus had directed them: preaching repentance, driving out demons and healing the sick (Mark 6:12-13) (Phipps 1993, 67-68). This mission served as a type of apprenticeship for the disciples, forming in them the means of communicating the Gospel that they would use in their future ministries. They also had time to reflect for themselves on who Jesus was (Stein 1992, 266). According to Mark and Luke, when the twelve returned from their journey they shared all that they had done with Jesus (Mark 6:30; Luke 9:10). The book of Luke also records Jesus sending out another larger group for much the same purpose (Luke 10).

Despite the apparent success of the mission, when several of the disciples encountered a boy possessed by a demon while Jesus, Peter, James, and John were on the

Mount of Transfiguration (Luke 9:28-36), they were unsuccessful in driving it out (Matt 17:15-16; Mark 9:17-18; Luke 9:39-40). Jesus healed the boy, driving out the demon. When the disciples asked why they were unsuccessful, Jesus explained they had taken their ability for granted and not depended on God, through prayer and faith, to work through them (Matt 17:19-20; Mark 28-29) (Brooks 1991, 145-46).

Jesus used many means to share his message of repentance and the coming kingdom with the different people he met during his ministry. Some of his methods were applied to large groups, others to small groups. He set himself up as the example of all he taught and allowed his followers to practice what they had learned from him. His particular attention was focused on training twelve men who would become the leaders of the future and preparing them for that ministry.

Several Vygotsky-like concepts are found in Jesus' teaching. Through his parables, Jesus provided socially and culturally based instruction that built upon what was already known by his learners. He encouraged development of higher thinking by asking questions that required more thought concerning the particular situation. By living with the disciples, Jesus came to know them personally so that his methods focused on their continued development while at the same time he served as the "more knowledgeable other" who was the example for them of how to respond and find resolutions. Jesus did not give his learners all the information directly. He used the parables and questions to encourage their thinking then sent them out to apply their newfound knowledge and understanding so they could continue to grow and develop. Hundreds of years before Vygotsky observed the social learning and development of

children in Russia or considered the need to look at potential rather than acquired skills, Jesus was practicing these concepts in his own teaching.

Paul as a Teacher

As the author of a significant portion of the New Testament, Paul can be considered an important teacher of early Christianity (Zuck 1998, 19-20). As an educated man and Pharisee (Bruce 1993, 682), Paul was well suited to teach others about the historical prophecies of the Messiah as well as sharing the gospel message of Christ. He traveled throughout the provinces of Europe, Asia, and Asia Minor, teaching the people he encountered and establishing churches in a number of cities (Bruce 1993, 683-86).

Paul engaged his listeners and readers in their learning through discussions and questions (Zuck 1998, 172). His questions were not only to evaluate the knowledge that had been gained, but also to encourage his learners to reflect, draw conclusions, and identify improper understanding and applications (Zuck 1998, 173-78). In his letter to the church at Rome, Paul asked, “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?” (Rom 10:14). These questions were asked to encourage Paul’s readers to reflect and come to the understanding that they should also share the message they had heard and believed (Zuck 1998, 174). Paul’s questions covered dozens of topics, including adultery, prayer, and wisdom, reflecting the breadth of issues with which the early church was being confronted (Zuck 1998, 180-82).

Paul’s teaching methods included setting an example for his listeners and exhorting them to follow his example (Grassi 1982, 70). In 1 Thessalonians 4:1, Paul

wrote, “we instructed you how to live in order to please God, as in fact you are living. Now we ask you and urge you in the Lord Jesus to do this more and more.” Again in 1 Corinthians 4:17, Paul tells his listeners, “I am sending you Timothy, my son whom I love, who is faithful in the Lord. He will remind you of my way of life in Christ Jesus, which agrees with what I teach everywhere in every church.” Paul’s expectation of the people to follow his example was not based on the perfection of his life – he had been a significant persecutor of Christians prior to his conversion (Acts 8:1-3; 9:1-3) – instead it was based on his reflection of the example provided by Jesus (1 Cor 11:1; Grassi 1982, 71). In keeping with Paul’s teaching of following his example, he only used this formula with churches that he had personally established. Instead, he used general terms of following Jesus’ example where he had not provided a personal witness (Grassi 1982, 77).

Ultimately, Paul’s teaching was to bring his listeners to faith in Jesus and then to help them grow to become mature followers of Christ (Zuck 1998, 114-16). To this end he interacted with large groups (Areopagus in Athens – Acts 17:19-34), small groups (Philippi – Acts 16:12-15), and individuals (Timothy – Acts 16:1-5) as the opportunities presented themselves.

Paul’s letters to Timothy and Titus are known as “pastoral epistles” for their focus on ministry and church organization issues. The letters also reflect Paul’s personal attention to the training of these men in preparation for ministry and encouragement to share what they had been taught with others (Zuck 1998, 32). As part of training Timothy and Titus, Paul sent each man on special assignments in ministry (Lea and Griffin 1992, 52). Timothy was sent to Thessalonica (1 Thess 3:1-10), Corinth (1 Cor

4:17), and Ephesus where he received the letters from Paul (1 Tim 1:3). Titus also spent time in Corinth on Paul's behalf (2 Cor 8:16-17) while his epistle finds him working in Crete (Titus 1:5). Second Timothy 2:2 sums up Paul's expectations of these associates, "And the things you have heard me say in the presence of many witnesses entrust to reliable men who will also be qualified to teach others." As Paul had taught in Timothy's presence, Timothy was now responsible for passing the truth on to the people of Ephesus (Lea and Griffin 1992, 200-2). In his letter to Titus, Paul provided instructions for the organization of his teaching ministry. "You must teach what is in accord with sound doctrine" (Titus 2:1), then the older men and women would be prepared so that they in turn could teach the younger generations (Titus 2:1-6). Paul asserted Titus' personal responsibility for instructing the believers in Crete (Lea and Griffin 1992, 296-97).

Paul, like Jesus, taught different groups using different methods but his primary method was his own life used as an example of the grace afforded those who believed and the necessity of sharing the gospel with others. Also like Jesus, Paul's teaching methods reflect Vygotsky's concepts. Paul served as a "more knowledgeable other" for the churches he established and more specifically to Timothy and Titus as his students. He encouraged reflection and higher thinking by asking questions of his learners. Paul also encouraged social/cultural teaching as seen in his letter to Titus in order for the practical and gospel knowledge acquired to be passed on to future generations.

Summary

As shown in the preceding sections, education among the Jews and early Christians was not practiced as independent study but was accomplished through the

family, in community, and in groups large and small. Parents were expected to provide the foundations for education in general but most importantly in Hebrew and Jewish society, foundational religious education.

The example of Jesus using multiple methods to reach the people of Israel should provide insight into the best way to reach learners today. Keeping them interested in the material through stories and questions also gives opportunities for them to experience and observe the lessons being taught. The importance of allowing learners to practice what they have observed or been taught is illustrated well in the account of Jesus sending out the Twelve as well as the idea of providing support and explanation if the learner is not able to complete the assignment alone.

Learning in community, through the experience and guidance of those more experienced is also found in Vygotsky's concept of the Zone of Proximal Development (ZPD). Jesus' modeling and laboratory teaching exemplify teaching methods, such as scaffolding, that have grown out of the ZPD. Paul's teaching also illustrates the principles found in Vygotsky's work, including the ZPD. Jesus and Paul were primarily working with adults through their teaching (Richardson 1932, 27, 188). As such, Vygotsky's concepts may be able to find a home within adult education in the Sunday school context.

Foundations in Literature

Learning has always been an integral part of the human experience. With each generation, humankind has expanded the boundaries of development and learned things that were unfathomable to the generations before. How learning takes place has been an area of interest for many years as well. Lev Vygotsky and the ZPD show one means by

which learning and cognitive development take place. This section of the chapter will look at his history which significantly influenced his research efforts; the scope and direction of his overall research; and then the ZPD and the work that it has influenced.

In the final section, the context of this study is developed showing its history as an adult learning context as well as the purpose of education within the church. This researcher believes the concept of spiritual formation is key to the application of the ZPD to adults in the Sunday school context. The two areas are tied together in this final section.

Vygotsky and the Zone of Proximal Development

Vygotsky's life and work were cut short due to illness, but in the ten years that he was actively pursuing research he compiled a number of interesting concepts and ideas that have borne fruit in the work of his students and are now being recognized in the Western world. In this section, Vygotsky's life and its influence on his work are considered as well as a description of the ZPD concept and its formulation.

Biographical Sketch

Lev Semyonovitch Vygotsky was born in November 1896 to Jewish parents in the town of Orsha, Belorussia (Luria 1978a, 15). His father was a bank manager and his mother a trained teacher who stayed home to raise the eight children (Wertsch 1985, 3). He was educated at home by a private tutor until he entered the Jewish gymnasium (high school) from which he graduated with honors and a gold medal in 1913 (Wertsch 1985, 4-5). The czarist Russian government had instituted a quota system that allowed only 3% of the university students to be Jewish. When Vygotsky was applying in 1913, the

system was changed to a lottery system in the hopes of reducing the intellectual level of the Jewish collegiate population. Vygotsky did receive admission to Moscow University, choosing to major in medicine as the path his parents preferred of the options available to him (Wertsch 1985, 5-6; Wink and Putney 2002, xix). Vygotsky transferred to the Law School less than a month after the semester began. He enrolled concurrently in the Shaniavsky University, an 'underground' institution led by professors rebelling against the political situation in Russia at that time. There he majored in history and philosophy. Vygotsky completed both courses of study in 1917 and returned to his family (Kozulin 1986, xiii-xiv).

In Gomel, Vygotsky worked as a literature teacher in a local school followed by a time of teaching in a local college where he first taught psychology and established a psychological laboratory (Luria 1978a, 15; Kozulin 1986, xiv). During this period Vygotsky contracted tuberculosis, the disease that would eventually take his life. He married Roza Smekhova in 1924 and they had two daughters (Wertsch 1985, 7).

In January 1924, Vygotsky presented a paper to the Second Psychoneurological Congress in Leningrad which caught the attention of Alexander Luria, the leader of a psychological group in Moscow. Luria invited Vygotsky to study and work in Moscow as a research fellow (Kozulin 1986, xvi). Shortly after making the move to Moscow, Vygotsky completed his dissertation titled *The Psychology of Art* (Wertsch 1985, 7).

Vygotsky had very eclectic interests which allowed him to view the world in a different manner than those schooled in a particular discipline. He shared a gift for languages with his mother and according to his daughter Gita, could read and understand

Latin, Greek, German, French, English, Hebrew, Esperanto and Yiddish (Veer 2007, 14). As such, Vygotsky was very widely read, including poetry, fiction, philosophy and works by Hegel, Spinoza, Piaget, Freud, Marx, and Engle (Wertsch 1985, 7-8).

When Vygotsky returned to Moscow in 1924 he attacked his new position and the opportunities that came from it with a vengeance, trying to do as much as possible in the time available to him. Vygotsky worked first in the Institute of Psychology and then in the Institute of Defectology which he founded (Luria 1978a, 15). Between 1931 and 1934, Vygotsky wrote numerous articles and manuscripts, most of which were published posthumously (Wertsch 1985, 13).

Vygotsky died from tuberculosis on June 11, 1934 at the age of 38 (Luria 1978a, 16). He accomplished much in his 10 year career, enough to be known as the “Mozart of Russian psychology” (Wertsch 1985, 8), but he also left many lines of inquiry unfinished and poorly documented. Very few details of his life were written down and his notes were minimal. Yet his students carried on and expanded much of his work. Vygotsky’s opportunities to teach and do research came from the initiation of the Marxist government in the Soviet Union (Veer 2007, 18-19). Marxism not only provided the opportunities but influenced his research.

Marxist Context

Vygotsky completed his college degree in the turmoil of the Russian Revolution and began his research career as Stalin was taking over the government of the Soviet Union. While the Stalinist purges did not begin until after his death, the pressure to conform to the Communist or Marxist point of view was very much in evidence (Cole and Scribner 1978, 7). Contrary to what he viewed as concessions by other researchers to

the Communists, Vygotsky sought to find a general psychology that fell in line with the Marxist ideal rather than making a Marxist psychology (Packer 2008, 13, 18). His work in this area led him to view development from a genetic or historic perspective. The premise was that the individual was rooted in the social context in which he or she develops. That context is not only the present, but also the past which forms the culture. The social foundation of development drove Vygotsky's theoretical perspective (Cole and Scribner 1978, 7). Despite his best efforts, Vygotsky's work was banned in the Soviet Union until after Stalin's death in 1953 (Wertsch 1985, 14).

Vygotsky's Research

During his career, Vygotsky explored a number of areas in education and developmental psychology. Many of his theories stemmed from his work at the Institute for Psychology in Moscow. While there he considered localization of higher mental functions, internalization of knowledge, mediation, and other research areas. In the next sections, a few of Vygotsky's research efforts are discussed.

Localization of Higher Mental Functions

Vygotsky believed that higher mental functions were a uniquely human attribute, part of what separates humankind from animals (Vygotsky 1978, 88; Luria 1978b, 278-79). Contrary to popular psychological belief, Vygotsky postulated that the higher mental functions could be studied via shared social history (Luria 1978b, 275). He conducted experiments showing that children develop through "objective activity and communication with adults" rather than the stimulus response observed in animals (Luria 1978b, 278). Vygotsky believed that over time, the verbal communication of the child

would be internalized (Luria 1978b, 278). Based on his findings, Vygotsky assumed that injuries to one area of the brain would result in different challenges for the person based on the development stage he or she was at when the injury took place (Luria 1978b, 281). His work laid the foundations for neuropsychology in the Soviet Union (Luria 1978b, 281). This work also led him to continue studying internalization and mediation as part of human development.

Internalization and Mediation

To Vygotsky, learning required a social context. He believed that all learning began as activity in the social realm that was eventually internalized, leading to development. Internalization is defined as “the internal reconstruction of an external operation” (Vygotsky 1978, 56). Vygotsky used the process of a child developing pointing mannerisms as an illustration of the internalization process. The child comes to understand that grasping is interpreted by others in such a way that it leads to a pointing gesture intended to interact with a person rather than the desired object (Vygotsky 1978, 56). The process of internalization is made up of a series of transformations.

1. An operation that initially represents an external activity is reconstructed and begins to occur internally
2. An interpersonal process is transformed into an intrapersonal process
3. The transformation of an interpersonal process into an intrapersonal one is the result of a long series of developmental events (Vygotsky 1978, 56-57).

Internalization requires that “every function in the child’s development appears twice: first, on the social level, and later on the individual level” (Vygotsky 1978, 57). The process involves the use of signs, a tool of language (Vygotsky 1978, 57).

Vygotsky also believed that learning required the mediation of tools. His view of tools included not only physical tools such as a hammer or pencils, but also mental tools, the most significant of which was language (Levykh 2008, 93; Tudge and Hogan 1997, 4). To describe the process, Vygotsky believed that children responded to language without truly understanding it – the social context. As they continue to be exposed to language, they learn what it means to the others in the context and then internalize that meaning for themselves. Mediation occurs as the tool of language is used to convey information while indirectly affecting behavior (Vygotsky 1978, 54).

Zone of Proximal Development

The concept of interest to this study is Vygotsky's Zone of Proximal Development (ZPD). Introduced in 1933 (Veer 2007, 78), it was through his observations of children with disabilities that Vygotsky questioned the standard methods of determining the children's developmental level. Standard methodology at that time was to base judgment of a child's developmental capability on tasks that could be completed independently as measured through intelligence testing (Vygotsky 1986, 187; Veer 2007, 79). Vygotsky identified the tests as indicating the child's actual developmental level because independent activity was measured (Vygotsky 1978, 85).

Vygotsky advocated testing the children twice with the second test determining the child's ability to solve problems with assistance (Veer 2007, 82). The result would be the child's Zone of Potential Development, a measure of how high the child could potentially develop (Estep 2002, 152). Vygotsky defined the ZPD as, "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under

adult guidance or in collaboration with more capable peers” (Vygotsky 1978, 86). In other words, the standard measurements did not accurately reflect the development level attainable by the child because it measured activity already mature. Instead, Vygotsky felt that identifying those activities and processes that were still maturing provided a better picture of a child’s development (Vygotsky 1978, 87). In time, the child would be able to complete the activities in the ZPD alone, leading to a new ZPD being created and the need for new, more difficult tasks (Veer 2007, 82).

The ZPD serves as an illustration of Vygotsky’s socio-genetic law that “higher mental processes and self-regulation originate in social interaction with a more able partner” (Veer 2007, 83). In other words, in development, social action precedes internalization leading to higher mental functions (Veer 2007, 83). According to Vygotsky, “*human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them [emphasis in original]*” (1978, 88) and “good ‘learning’ is that which is in advance of development” (Vygotsky 1978, 89).

As an example of his concept, Vygotsky cited Piaget’s work in moral development which had shown that “cooperation provides the basis for the development of a child’s moral judgment” (Vygotsky 1978, 90). From the examples, Vygotsky came to the conclusion with regard to development of higher mental functions that “developmental processes do not coincide with learning processes. Rather, the developmental process lags behind the learning process; this sequence results in zones of proximal development” (Vygotsky 1978, 90).

Application of the ZPD

Vygotsky's work was suppressed in the Soviet Union until after Stalin's death and did not come from behind the Iron Curtain in any significant manner until the 1970s and 80s. Since that time, his work has been highly regarded by researchers in many fields including education, psychology, anthropology, sociology and linguistics. Numerous applications of the ZPD have been made, especially in the area of education. One of the most used is the concept of scaffolding.

Scaffolding

Implied in Vygotsky's description of the ZPD, scaffolding is a teaching process that establishes support for student activity then gradually removes the supports as the student is able to complete the task more and more independently (Wood, Bruner, and Ross 1976, 96). Originally constructed as a tutoring process, scaffolding includes several functions.

1. *Recruitment* involves enlisting the learner in the task at hand
2. The tutor breaks down the task into a minimal number of steps for completion by the learner, thus *reducing the degrees of freedom*
3. In *direction maintenance*, the tutor provides motivation and direction while also encouraging the learner to build on previous success to take the next step
4. As part of the learning process, the tutor identifies areas that are particularly relevant to successful completion of the task (*marking critical features*) and any discrepancies between the student's work and the tutor's
5. *Frustration control* involves reducing stress on the learner while avoiding making the learner too dependent on the tutor
6. The tutor uses *demonstration* not only to provide initial modeling of the task but also to aid the learner in identifying area for improvement or the next steps toward completion. (Wood, Bruner, and Ross 1976, 98)

All of these functions contribute to the learner's successful completion of the task and ultimate internalization of the process. Kathleen Hogan and Michael Pressley provide additional elements of the scaffolding process based on a review of literature such as *pre-engagement* of the teacher by selection of tasks using knowledge of student needs and curriculum goals; *actively diagnosing the understandings and needs of the learner*; and *assisting internalization, independence, and generalization to other contexts* through helping learners to recognize the need to apply skills to other contexts (Hogan and Pressley 1997, 82-84). The key to successfully completing a scaffolded development is to provide teaching within the ZPD such that the learner remains interested and challenged without getting bored or overwhelmed; breaking down the problem-solving situation into manageable chunks that can then be tried by the learner. As Hogan and Pressley note, "Taken alone, each component of a scaffolding sequence is a familiar instructional strategy – but using them in combination results in more than the sum of the parts" (Hogan and Pressley 1997, 84).

Within the overall scheme of learning, scaffolding is part of the foundational structure as described by Roland Tharp and Ronald Gallimore. Using the ZPD, they have put forth a four stage process of learning considered to be applicable to all age groups. In the first stage, learning is assisted by others. The learner receives assistance as appropriate for his or her ZPD in the particular problem domain. This is the stage during which scaffolding is employed. As the learner develops competence in solving the problem, he or she progresses towards self-learning, or Stage 2 (Tharp and Gallimore 1988, 33-36). During this stage, the solution to the problem is internalized and becomes

a part of the learner's current development. At the end of Stage 2, the learner has fulfilled the ZPD for the particular problem (Tharp and Gallimore 1988, 36-38).

In Stage 3, the solution derived is automated and becomes an inherent part of the learner (Tharp and Gallimore 1988, 38). Stage 4 concerns the degeneration of learning or defossilization. This stage initiates the recursive point of the learning process. The level of recursion is based on how far back into the learning process the learner needs to go in order to re-acquire the skill (Tharp and Gallimore 1988, 38-39).

Learners are constantly experiencing learning in all four stages. This is particularly apparent in children. Some skills are just beginning to enter the ZPD and can begin the process; others are in the midst of assisted completion while still others have moved into the self-learning phase. As the child continues to develop, skills will also be seen in Stage 3 as illustrated by a fierce desire to accomplish the skill in their own way without interference and Stage 4 comes to pass with skills that have not been practiced recently enough to have remained clear in the child's mind and require reminders to complete (Tharp and Gallimore 1988).

Scaffolding has been applied to classrooms in elementary and secondary school (Smagorinsky 2007), teacher (Brodie 2000) and nurse training programs, and college courses (Berger 2005). Different methods of providing the scaffolding have been offered including computer mediation (Charnitski 1999), assemblies and small group or one-on-one interactions. The teacher's role is to facilitate the activity of the student, providing sufficient assistance to pull the child along the development continuum until the child is able to function independently and all supports have been removed.

The majority of scaffolding research has involved implementation of scaffolding as a teaching technique in elementary school classrooms. The studies should be viewed with caution as a paper presented by Pamela Hayward suggests that many of the studies carried out that claim to include the ZPD do not actually succeed in testing for it. She found that in order to truly test for learning in or teaching in the ZPD, the research method must include a pretest, problem-solving activity and a posttest (Hayward 1995, 8-9).

Apprenticeship

An application of scaffolding and thus of the ZPD is found in the ages-old practice of apprenticeship. Although virtually lost in industrialized countries, apprenticeship practices continue in developing countries (Resnick 1989, 12-13). Lauren Resnick describes the apprenticeship process as follows:

Apprentices spend numerous hours watching masters, journeymen, and older apprentices at work. From the beginning, they observe both the full process of production and the resultant product, and they may practice a few basic skills. When they achieve an acceptable level of competence in these basic skills, they attempt the entire process of producing a simple artifact on their own... When construction of one item is mastered, the apprentice begins to work on another, more complex one, and thus proceeds through a curriculum that, while graded and sequenced, always exercises component skills in the context in which they will be used. (Resnick 1989, 12)

Observation and reproduction of basic skills with correction are hallmarks of a scaffolding process. Based on the industrial apprenticeship model, an approach to instruction in thinking has been developed known as cognitive apprenticeship (Resnick 1989, 13).

Cognitive apprenticeship is useful in situations in which it may be dangerous for an unskilled person to practice in real-life situations such as pharmacology or other

medical fields (Brandt, Farmer, and Buckmaster 1993, 70). Through cognitive apprenticeship, the learner is able to see the skills modeled by a more experienced person in a simulated or real situation before attempting to complete the skill alone. There are five phases in the cognitive apprenticeship process. First, is the modeling phase in which a person well versed in the skill to be learned provides a live demonstration. Depending on the situation, the model provides either a running commentary of his or her thought processes, inner dialogue, and choices or explains after the demonstration is completed (Brandt, Farmer, and Buckmaster 1993, 70-72).

During the second phase (Approximating), the learner attempts to complete the activity while also explaining aloud his or her thought process. Once the activity is completed, the learner and model reflect on the success of the approximation. Learning is scaffolded through the presence of the model to provide assistance as needed (Brandt, Farmer, and Buckmaster 1993, 72). In Phase 3, Fading, the learner continues to practice the activity, increasing in competence while the supports of the model are reduced through each iteration. Scaffolding continues in this phase (Brandt, Farmer, and Buckmaster 1993, 73).

For Phase 4, Self-Directed Learning, the learner returns to his or her regular environment and completes the activity there. The model remains available for consultation as necessary. Finally, Phase 5, Generalizing, provides an opportunity for the learner and model to discuss the application of the specific skills learned to other aspects of the position in question (Brandt, Farmer, and Buckmaster 1993, 73-74).

Through the cognitive apprenticeship process, learners are given the opportunity to build skills in a safe environment with an expert rather than being required to apply knowledge presented in a typical classroom setting with little or no support.

Sunday School as Context for Adult Education

Adult education takes place in a wide variety of contexts from colleges and universities to high schools, gymnasiums and libraries. It is hosted by school districts, colleges, clubs and churches (O'Donnell 2006, 3). This study looked at adult education in the context of the local church through adult Sunday school. As previously defined for the purposes of this study, adult Sunday school is comprised of open group classes meeting in conjunction with a primary worship service at the church facility, typically on Sunday morning, and includes only persons age 18 and older.

While Sunday school was not originally established to teach adults, they have been involved as learners and teachers for much of the organization's more than two hundred year history (Pray 1847, 162). Sunday school officially began in 1781 as an experiment in childhood education and reform by Robert Raikes of Gloucester, England (Pray 1847, 140). In the memoirs of Hannah More, a charitable woman who, with her sisters, followed Raikes' lead and established Sunday schools for the poor in Cheddar beginning in 1789, is recorded that entering the sixth year of work there were over two hundred children and two hundred 'old people' in regular attendance (Pray 1847, 162).

Shortly after the Revolutionary War, Sunday school came to the United States. On December 26, 1790, a constitution was adopted for a Sunday School Society in Philadelphia, Pennsylvania, and the first school was established in March 1791 (Pray 1847, 205). In 1809 a school was created through the auspices of a Moral Society in

Pittsburg[h], Pennsylvania, attended by two hundred forty children and adults at its first session (Pray 1847, 208).

In Baptist life, a resolution was prepared for the 1862 Baptist convention concerning the creation of a Board of Sunday Schools to promote the organization within Southern Baptist churches (May 1961, 6-7). Enrollment increased so that in 1935 the Baptists in the United States had 3.16 million enrolled in Sunday school (May 1961, 159). In 1958 there were 6.9 million people enrolled (May 1961, 264) and by 2007, nearly 7.9 million Sunday school members of all ages were reported in the Annual Church Profile, an annual survey of Southern Baptist churches (Lifeway Research 2008, 4). Of these, nearly 5 million were adults (Lifeway Research 2008, 4).

Adult participants in Southern Baptist Sunday school have a number of options from which to choose with regard to curriculum, class structure, and style. There are two principle curricular series available for open group classes. The first is known as the *Explore the Bible* series which reviews the facts and principles found in a particular book or books of the Bible over the course of a thirteen-week quarter. While some review is recommended, each lesson stands alone thus making it possible for people to come and go as needed or desired. The other series is known as *Bible Studies for Life* with life stage oriented material for young adults, parents, empty-nesters and retirees (Lifeway Christian Resources, lifeway.com). Numerous other materials and study courses are available although many of these are considered closed group studies due to homework requirements and lessons built upon previous lessons. In a large church, the adult Sunday school can function much like an adult education center at the local high school or college campus with multiple options in terms of topic, teaching style and co-learners.

The purpose of much adult education is to gain new skills or expand existing skills and knowledge. The purpose for adult education in the church is to continue growing the adult's knowledge and understanding of scripture and the Christian way of life. This process is called spiritual formation.

Spiritual Formation

Spiritual formation is a phrase that is not well understood, even within the Christian community. One definition of spiritual formation is “the on-going work of sanctification by the Holy Spirit in the believer’s life and with the believer’s cooperation” (Deison 1994, 271). Another description is “an intentional, multi-faceted process which promotes transformation by which Christ is formed in us so that we can become His continually maturing disciples” (Dettoni 1994, 16). Still other descriptions include “being formed spiritually after the likeness of Christ” (Stanger 1989, 13) and “the intentional communal process of growing in our relationship with God and becoming conformed to Christ through the power of the Holy Spirit” (Wilhoit 2008, 23). Common features of these descriptions include: an emphasis on the continuing nature of spiritual formation; significant permanent change in the person engaged in spiritual formation; and the goal of becoming more like Jesus Christ. Frequently this involves a more mature believer serving as the “more knowledgeable other” in a discipleship relationship, providing scaffolding of spiritual formation for one or more less spiritually-mature believers.

All persons are being shaped spiritually; that is, their heart or spirit is being transformed in either a positive or negative direction (Wilhoit 2008, 35). It is the task of the church to provide, promote and support positive spiritual formation, a task mandated

by Jesus in what is referred to as the Great Commission (Matt 28:18-20): “All authority in heaven and on earth has been give to me. Therefore go and make disciples of all nations, baptizing them in the name of the Father and of the Son and of the Holy Spirit, and teaching them to obey everything I have commanded you”(Wilhoit 2008, 15). In his commentary on the book of Matthew, Michael Wilkins identifies the phrase “make disciples” as the central command of the Great Commission (Wilkins 2004, 951) with teaching as one of three subordinate tasks. Going and baptizing being the first two subordinate tasks, teaching completes and continues the process of making disciples by providing new disciples with the basic elements of Christianity while giving more advanced education to more mature disciples. The key is not only the acquisition of knowledge, but understanding the commands taught in order to obey them, thus conforming the disciple’s life to Jesus’ teaching (Wilkins 2004, 956).

In order to accomplish the task set before it, the church must have an educational mindset in all of its activities (Dettoni 1994, 11). The early church set the example of how to incorporate education into the very fabric of its activities in Acts 2:42 and 46-47, “They devoted themselves to the apostles’ teaching and to the fellowship, to the breaking of bread and to prayer Every day they continued to meet together in the temple courts. They broke bread in their homes and ate together with glad and sincere hearts, praising God and enjoying the favor of all the people.” Their educational efforts were conducted as part of the community of believers, led by the apostles, the ones with the most knowledge of Jesus’ message and teachings. The presence of the Christians in the temple indicates not only faithfulness to their Jewish heritage (including the

educational aspects) but also their desire to share with the others gathered there (Polhill 1992, 121).

As mentioned in the definitions above, the Christian's ultimate goal in spiritual formation is to become like Jesus. In the Bible, there are a number of verses that express this goal: "Do not be conformed any longer to the pattern of this world, but be *transformed* by the renewing of your mind" (Rom 12:2, emphasis added) (Dettoni 1994, 14-15); "And we . . . are being transformed into his likeness" (2 Cor 3:18) (Lawrenz 2000, 11); and Ephesians 4:11-13, 15-16, which states,

It was he who gave some to be apostles, some to be prophets, some to be evangelists, and some to be pastors and teachers, to prepare God's people for works of service so that the body of Christ [the church] may be built up until we all reach unity in the faith and in the knowledge of the Son of God and become mature, attaining to the whole measure of the fullness of Christ. . . Instead, speaking the truth in love, we will in all things grow up into him who is the Head, that is, Christ. From him the whole body [the church], joined and held together by every supporting ligament, grows and builds itself up in love, as each part does its work. (Lawrenz 2000, 20).

These verses state the goals of education in the church: transforming the mind of the individual and the church as a whole to become more like Jesus Christ over time, through preaching, teaching, evangelism, service, and fellowship. In other words, "spiritual formation is intensely personal but it is not isolated from the Christian community" (Lawrenz 2000, 22). This growth yields maturity not only of the Christian but also of the church as a whole (Hughes 1990, 135-36; Wood 1981, 58-59).

In the Christian tradition, the process of spiritual formation is known as sanctification (Johnson 1989, 104). This process begins at conversion when the person's legal status before God is changed (Erickson 1998, 980) and continues through the

remainder of the person's life as character matures and the person becomes more and more conformed to the image of Jesus Christ (Grudem 1994, 746).

For the evangelical Christian, sanctification is a supernatural process in which the Holy Spirit works to transform a Christian into the likeness of Christ (Erickson 1998, 980; Grudem 1994, 754). The evidence of the Holy Spirit's work in a Christian's life is the production of the fruit of the Spirit: love, joy, peace, patience, kindness, goodness, faithfulness, gentleness, and self-control (Gal 5:22-23) (Grudem 1994, 754).

At the same time, spiritual formation or sanctification is not a passive process for the Christian. He or she must also take an active role in the development of holiness (Erickson 1998, 983). Sanctification must be intentionally cultivated through activities such as Bible reading, meditation, worship, fellowship, and service (Grudem 1994, 755), also known as spiritual disciplines. The community plays a crucial role in spiritual formation (Estep 2002, 61). Personal study and Bible reading are very important, but maximum spiritual growth cannot be attained in isolation (Waggoner 2008, 310). In a review of Vygotsky's theories, Cynthia Neal wrote, "We cannot understand the developing person apart from the relationships that help shape that development" (1995, 125). The context of the community provides examples of Christ-like living and accountability for the Christian (Johnson 1989, 104, 116).

To fulfill the Christian's responsibility in his or her spiritual formation, a number of activities known as spiritual disciplines have been used by the church to increase knowledge and understanding of Jesus' teachings as well as provide opportunities for strengthening faith or the relationship with God and relationships with other Christians. Donald Whitney describes the following spiritual disciplines in his

book *Spiritual Disciplines for the Christian Life*: Bible intake, prayer, worship, evangelism, serving, stewardship, fasting, silence and solitude, journaling, and learning (Whitney 1991, 17); he indicates, however, that this is not an exhaustive list. Other activities that may be considered spiritual disciplines include “confession, accountability, simplicity, submission, spiritual direction, celebration, affirmation, sacrifice, and ‘watching’” (Whitney 1991, 17). Just as exercise and a healthy diet are physical disciplines that help to build and maintain a person’s physical nature, spiritual disciplines help to build and strengthen a Christian’s spiritual nature. While the majority of Whitney’s spiritual disciplines can be and possibly should be worked on alone, others such as serving and evangelism require interaction with others. Interacting with other Christians in worship and learning also helps to build knowledge and grow relationships. To accomplish the purpose of spiritual formation, most Southern Baptist churches have some type of disciple-making or disciple-building program such as Sunday school. These programs provide a framework that brings more spiritually mature and less spiritually mature believers together in relationships that allow for at least scaffolding and sometimes apprenticeship-type learning experiences to take place.

Disciple-making strategies often involve small groups of people gathering specifically for the purpose of being discipled or learning how to grow in faith. According to evangelical Christian tradition, this is a part of the Great Commission found in Matthew 28:18-20. Greg Ogden wrote materials to help disciple others (Ogden 1998) and later published the book *Transforming Discipleship* (2003) describing the process of not only growing disciples but also multiplying the discipling process to future generations of Christians within a church congregation and beyond. Ogden’s triad

discipleship strategy involves three people meeting together each week to share their lives, confess sins, and study the truth of Scripture (Ogden 2003, 154-55). The relational commitment of the triad allows the intimacy needed for trust and true accountability to develop (Ogden 2003, 123-26). Bible study can be based on any material and should occupy a significant portion of the time spent together each week. After all participants are comfortable with the weekly process, leadership of sessions rotates between members so that all share in the experience as well as modeling a peer mentoring process rather than a hierarchy (Ogden 2003, 144-46). Throughout the weeks of meeting, the triad grows together as described in Proverbs 27:17, “As iron sharpens iron, so one man sharpens another.” At the beginning of the process, the triad signs a covenant of commitment to the process including considering forming a new triad at the end of their time together to pass along what they have learned (Ogden 2003, 168-71).

Another form of small group discipleship is known as the Life Transformation Group (LTG) created by Neil Cole. In his book *Search and Rescue* (2008), Cole uses the example of Paul’s last letter to Timothy to show how Christians are called to be heroes for the faith. He describes an LTG as “made up of two to three people, all of the same gender, who meet weekly for personal accountability in the areas of their spiritual growth and development” (Cole 2008, 167). There is no curriculum; the only tools are the Bible and an LTG card. During meeting times members focus on “three essential disciplines for spiritual growth – confession of sin, a steady diet of Scripture, and prayer for others who need Christ” (Cole 2008, 168). The LTG card supports both the confession and prayer portions of the discipling process. On one side of the card are eleven “Character Conversation Questions” used at the beginning of each meeting for accountability in the

areas of Bible reading, evangelism, and integrity in relationships, finances, and with each other. The questions are not exhaustive but are intended to be broad enough to cover common areas of sinfulness (Cole 2008, 168-70). On the other side of the card are ten scripturally-based prayers to be used during the member's Bible reading time to pray for targeted persons in need of a personal relationship with Christ (Cole 2008, 172-74). With no curriculum, members choose a book of the Bible to read during the week with a goal of reading approximately thirty chapters each week. Shorter books are read multiple times during the week while longer books can be broken into natural pieces. The same assignment is repeated until all members of the group complete the assignment in the same week (Cole 2008, 170-72). Cole views the LTG as a catalyst which brings together the Holy Spirit and Scripture in a person's life to cause spiritual change that is visible to the outside world (Cole 2008, 178).

Both of the preceding examples of discipleship groups are very intensive and require significant commitment to meetings in addition to regular worship and Bible study. Other programs of varying intensity are in use around the nation and around the world. The key that ties the programs and Sunday school together is the relationships – the intentionality of sharing and learning within a community. The community of faith is essential for spiritual formation (Estep 2002, 161). As shown previously, the community of faith provides the social context in which learning can begin as persons of all ages take on the faith traditions in which he or she is engaged and incorporate those traditions into their lives leading to spiritual formation or development (Estep 2002, 160). The relationships with more mature believers reflect the concept of scaffolding knowledge for development that has grown from Vygotsky's work.

Profile of Current Study

Based on the literature reviewed previously, this study has sought to quantitatively show the validity of applying Vygotsky's Zone of Proximal Development to adult learners in the context of Sunday school. Current theories of adult learning have been shown to exhibit many of the same characteristics necessary for learning to take place within an adult's ZPD as it does for a child. Previous applications of Vygotsky's work to adults have taken place in educational settings ranging from nurse and teacher training to apprenticeships.

The study also considered the possible impact of age, gender, and prior education on the learner's response to learning within the ZPD, through statistical analysis. The results of the study are expected to provide a useful resource for educators in the specific context of Sunday school, adult Christian education, and potentially adult education at large.

CHAPTER 3

METHODOLOGICAL DESIGN

A precise design is crucial to a successful experiment. The research design to be used in this study was a nonrandomized control group pretest-posttest design (Leedy and Ormrod 2005, 227). The application of the design, and the overall research methodology to be employed are described in the following sections.

Synopsis of Research Questions

The issue under consideration in this research will be the testing of a learning theory, particularly Vygotsky's Zone of Proximal Development (ZPD), in an adult Sunday school context. This study was intended to provide quantitative evidence for the application of the ZPD to adults in a specific adult learning context that may then form a basis for future quantitative testing of other theories in the context as well as further testing of the ZPD itself.

The research questions which define this study are as follows:

1. Will adults taught in small groups learn significantly more than adults left to learn on their own?
2. Does the relationship persist even while taking into account age, gender, and educational level?

The following research hypotheses were tested through this research:

1. Additional small group discussion and learning opportunities will produce more measureable learning in adults than only large group presentation of material.
2. As adults age, the benefit of small group learning opportunities decreases but is not eliminated.

3. Gender is not a determining factor in the amount of learning that takes place in small groups.
4. Education level is not a factor in the amount of learning resulting from small group learning activities.

The questions and hypotheses above form the experimental foundation on which the research was based. A summary and the details of the research process are described in the following sections.

Design Overview

This section provides an overview of the research design. This research study tested the validity of applying the ZPD to adult learners in the context of a small group study, specifically Sunday school. As shown in the precedent literature, the method required to reveal the engagement of the ZPD is through comparing the learning that has taken place through a particular set of tasks (Hayward 1995, 5). As a result, the design chosen for this research project was a nonrandomized control group pretest-posttest design (Leedy and Ormrod 2005, 227), also known as the pretest-posttest non-equivalent group design (Cohen, Manion and Morrison 2007, 283). The research design is illustrated in Figure 2.

The research design uses two groups that are observed together prior to an experimental treatment applied to one group while the other serves as the control group. Following the experimental treatment, both groups are observed once again. The observations are the pretest and posttest. The adjectives non-randomized and nonequivalent refer to the inability to effectively assign the participants randomly to the

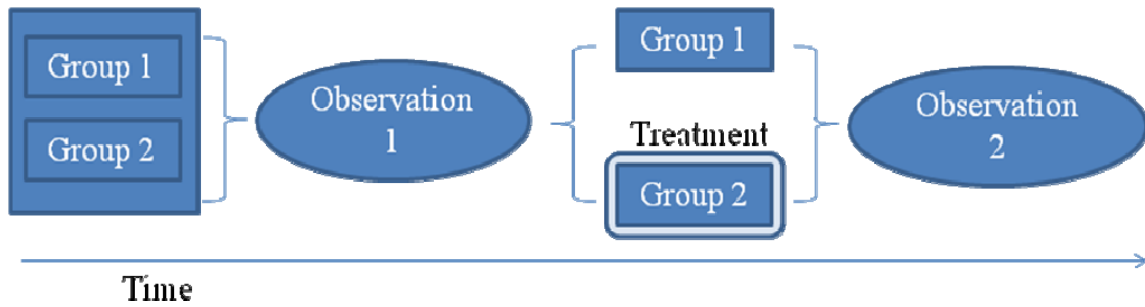


Figure 2. Research design schematic

control and test groups (Leedy and Ormrod 2005, 227-28; Cohen, Manion, and Morrison 2007, 282), leading to this type of research design being classified as a quasi-experiment (Campbell and Stanley 1963, 204). These research designs can assist in identifying factors for cause and effect but cannot definitively determine or establish the link between them (Moore 2008). Quasi-experiments are frequently used in educational research due to use of intact groups (classrooms, etc.) which do not lend themselves to truly random assignment of participants to control and experimental groups (Ross and Morrison 2004, 1023; Gall, Gall, and Borg 2005, 258).

Validity and Reliability

Validity and reliability are important concerns for research. According to Louis Cohen, Lawrence Manion, and Keith Morrison, “Threats to validity and reliability can never be erased completely; rather the effects of these threats can be attenuated by attention to validity and reliability throughout a piece of research” (Cohen, Manion, and Morrison 2007, 133). In terms of internal validity, eight jeopardizing factors identified by Donald Campbell and Julian Stanley (1963, 175), are considered followed by

discussion of their identified external factors and additional confounding variables for this study.

Internal Validity

Campbell and Stanley identified eight factors that can jeopardize the internal validity of an experiment: history, maturation, testing, instrumentation, statistical regression, selection, experimental mortality, and selection-maturation interaction (1963, 175). The history factor comes into consideration when results may be influenced by events other than the experimental treatment while maturation takes into account physical or psychological changes during the experimental period (Ross and Morrison 2004, 1024). For the testing effect, participant results may improve on the posttest simply due to their experience on the pretest (Gall, Gall, and Borg 2005, 253). Instrumentation as a factor involves changes in scoring or calibration of the instrument (Campbell and Stanley 1963, 175). Statistical regression accounts for participants' natural tendency to score closer to the mean during the posttest when pretest scores were extremely high or low (Ross and Morrison 2004, 1025). As its name suggests, experimental mortality involves the loss of participants from the control and test groups (Campbell and Stanley 1963, 175). Selection considers influence on results caused by the process of assigning participants to control and test groups (Gall, Gall, and Borg 2005, 254). The final factor, selection-maturation interaction is representative of effects caused by the interaction of one or more of the other factors (Campbell and Stanley 1963, 175).

According to Campbell and Stanley, if pretest scores for the control and test groups confirm the similarity of the two groups, the primary effects of history, maturation, testing and instrumentation are controlled as in a true experiment (Campbell

and Stanley 1963, 218). The pretest scores also control for selection by showing the level of similarity between the participants in the control and test groups. In this study, experimental mortality was controlled by first administering the pretest to a larger pool of potential participants than was minimally required for the study. Secondly, the time frame for the experimental period was limited to no more than six weeks from pretest to completion of the posttest and follow-up interviews.

In order to avoid the threat of statistical regression in the proposed quasi-experimental research design, Campbell and Stanley suggest refraining from the use of matching as a method of overcoming substantial differences between the control and test groups (Campbell and Stanley 1963, 218-19).

Selection-maturation interaction is one of the most common interactions found in educational research but not the only interaction combination that should be considered (Campbell and Stanley 1963, 218). Interaction possibilities are more common in quasi-experiments due to the non-random nature of participant assignment. When drawing conclusions concerning the effect of the experimental treatment, the researcher should carefully review the analysis in order to determine if interactions rather than the treatment were the actual cause of the effect observed (Campbell and Stanley 1963, 218).

With this research design, the threats to internal validity are minimal. The two most common threats were minimized through careful adherence to the research procedure and thorough analysis and review of data and results. Having reviewed the threats to internal validity, external validity will now be considered.

External Validity

External validity is concerned with “the degree to which the results [of a research study] can be generalized to the wider population, cases or situations” (Cohen, Manion, and Morrison 2007, 136). For the chosen research design, the primary threats to external validity are from interaction effects between the experimental variable and any selection biases, and reactive effects that negate generalization outside the experimental setting (Campbell and Stanley 1963, 210). With regard to this study, selection interaction as a threat to external validity was minimized by using a sample that includes all adults attending Sunday school at a particular church during the experimental period which includes males and females; young adults, middle adults, and senior adults. This also served to minimize the Hawthorne effect which is associated with results reflecting the participants’ realization of participating in a study (Cohen, Manion, and Morrison 2007, 156; Gough 2001, 324)

While Sunday school is not an environment in which adults expect to be tested, the use of spiritual gift inventories, Bible drills, and other assessments is not entirely foreign. While administering a Bible knowledge test might be unusual, it is not so uncommon as to cause a significant threat to external validity due to the participants’ reaction to testing for the experiment versus experiencing the experimental treatment outside of taking a pretest.

Reliability

Reliability in research is concerned with stability and dependability. Stability refers to collecting the same data over time while dependability is associated with trustworthiness in the data collection (Boyd 1980, 106-7). In other words, “for research

to be reliable it must demonstrate that if it were carried out on a similar group of respondents in a similar context (however defined), then similar results would be found” (Cohen, Manion, and Morrison 2007, 146).

For this study, multiple sites, all meeting the same criteria for inclusion in the experiment, were used. It was anticipated that the multiple sites would yield similar results and thus establish the stability and reliability of the experimental procedure.

As part of the research preparation, an expert panel reviewed the posttest, handout, and follow-up questionnaire. In addition, a pilot study of the entire experimental procedure was conducted. As part of the pilot study, the results of the posttest were tested using the Cronbach Alpha test to determine the internal consistency of the instrument. The desired test result was a reliability coefficient of 0.8 or higher to show the instrument was highly reliable (Cohen, Manion, and Morrison 2007, 506). Results lower than 0.8 may require adjustments to the instrument to improve internal consistency and overall reliability for the study. The actual results of the Cronbach Alpha test are discussed in the section titled “Evaluation of Instrumentation”.

Other Confounding Factors

In addition to the validity and reliability factors presented above, other confounding variables were of concern for the research design of the current study. These factors concern the provision of as consistent an experience of the experimental process at the different sample sites, including the same lesson, pretest, posttest, and administration of the experimental treatment (after lesson activities), as possible.

For the lesson presentation, the lesson was pre-recorded as a video and presented at each sample site. The lesson plan used for the presentation is found in

Appendix 1. Some sample sites had multiple sessions thus requiring multiple viewings of the lesson video. Through the video, not only will all participants view the same presenter, all will have the opportunity to receive the same information. At each sample site, the researcher worked with a local coordinator to ensure the presentation was given in the same type of environment each time in order to minimize the local variables for the presentation.

A standard pretest and posttest were administered to all participants. The pretest was administered for a number of years by a New Testament professor, Gary Burge, at Wheaton College in Wheaton, Illinois, to incoming freshmen students, typically from an evangelical church background (Black 2005, [daveblack050513.htm](#)). The posttest was created by the researcher and was administered at each site following expert panel review and a pilot study. Both instruments can be found in Appendix 2.

All participants received a handout with instructions prior to the division of the large group into the control and test groups. The instructions were read aloud to all participants. Once the large group was divided, the control group participants were dismissed with the test group having received the same instructions concerning the handout to that point.

The experimental treatment administration was made consistent through presentation by the researcher. Using a prepared script and examples in case of questions (Appendix 3), the researcher proceeded with the small group activities using the previously distributed handout for each test group. This approach was chosen in lieu of training individuals from each sample site in order to maintain the actual application of the experimental treatment as the independent variable.

Population

The overall population for this study includes all adults who participate in formal and/or informal adult education. As part of the National Household Education Survey in 2004 and 2005, over 200 million adults reported participating in some kind of adult education during the previous twelve months (O'Donnell 2006, 7). For this study, the specific population consists of the adults reported as attending Sunday school within a Southern Baptist church. This number, as calculated from the 2007 Annual Church Profile, was in excess of 2.4 million persons (Lifeway Research 2008, 4). In order to calculate the specific population, the researcher totaled the 2007 state convention-reported on-going Sunday school enrollment for the following five categories: young adults 18-24, young adults 25-34, adults 35-54, adults 55-64, and senior adults 65 and up (Lifeway Research 2008, 4). That total was multiplied by the ratio of total Sunday school enrollment and Sunday school average attendance for 2007 (Lifeway Research 2008, 3). The ratio was used in order to identify a population more consistent with actual attendance as the historical data shows average attendance to be approximately half of the enrollment value since 1972 (Lifeway Research 2008, 3).

Samples and Delimitations

While most SBC churches have some type of organized, open group Bible study in which adults participate, some churches have chosen to organize these studies outside the Sunday morning timeframe, away from the church facilities, or with multiple generations (i.e., children and youth) participating. For the purposes of this study, SBC churches considered for inclusion in the sample population will be required to meet the following requirements:

1. Maintain Sunday school classes for adult, children, and youth separately
2. Classes meet on Sunday morning prior to, following, or simultaneous with a worship service
3. Classes meet at the church's primary facility (i.e., not a personal residence)
4. Classes use an open group study format
5. A minimum of forty adults regularly attend each week.

The forty adult minimum for each church is based on the central limit theorem which statisticians have found indicates a sample size of at least thirty is "large enough" to approximate a normal distribution (Levine and Stephan 2005, 105). A minimum sample size of forty participants allows for some attrition in the sample over the course of the experiment while still maintaining the minimum for a normal distribution.

The researcher determined to use multiple sample sites in order to increase generalizability and minimize the influence of the specific location or environment on the study results.

This study was delimited to four Southern Baptist churches which meet the selection criteria. The selected churches are located in Kansas City, Missouri; Nashua, New Hampshire; Nashville, Tennessee; and Live Oak, Florida. These churches not only meet the inclusion requirement but were willing to work with the researcher using the prescribed research procedure. A Southern Baptist church in Grove City, Ohio that also met the inclusion requirements served as the pilot study location.

Limitations of Generalization

This study may not generalize to Southern Baptist churches using a model of adult Bible study that does not fit the open group, Sunday morning, adults-only model

required for the research procedure. As other denominations may use different models of teaching and learning for adults, this study may not generalize to adult learners engaged in Bible study in other denominations. The results of this study may not generalize to tests of other learning theories than the ZPD or structures other than small groups.

The small sample size, (187 over 4 sites) may result in this research not generalizing to the overall population at all. This quasi-experiment provided an opportunity to test the study hypothesis where random selection was not an option.

Despite these limits, the information yielded from the study provides valuable insight for teaching in other populations and other contexts. The use of multiple sample sites in the study should provide insight into the generalizability of the overall study results.

Instrumentation

The instrumentation used in this study consisted of a pretest, a posttest, a participant handout, and a group interview questionnaire.

Pretest

A Bible knowledge test published by David Alan Black through *The Covenant News* (Black 2005, daveblack050513.htm) was used as the pretest for this study.

According to Black, the test was used by Wheaton College professor Gary Burge to test the Bible knowledge of incoming freshmen students. Burge administered the test over four years with the result that “one-third could not find Paul’s travels in Acts, half did not know that the Christmas story was in Matthew or that the Passover story was in Exodus” (Burge 1999). He administered the test to high school seniors in youth groups from

evangelical churches with similar results (Burge, 1999). The test is constructed of twenty questions addressing common facts from the Old and New Testaments. Most questions are multiple choice although a few ordering questions are included. A copy of the test and answer key are provided in Appendix 2, Instrumentation.

Posttest

The second test or posttest evaluated knowledge, comprehension and application, the first three levels of Bloom's taxonomy (Bloom 1956, 18), with respect to a Bible lesson through a series of multiple choice and true/false questions. The domain content evaluated in the posttest came from a lesson from the book of Nahum, one of the Minor Prophets included in the Old Testament. Appendix 1, Lesson Plan, contains the lesson plan used to create the video lesson presentation and test. Questions to evaluate the three levels of Bloom's taxonomy included in the test were created following the researcher's review of Bloom's examples of evaluation questions. Also taken into consideration in the building of the test questions were a compilation of problems with and suggestions for constructing effective multiple choice and true/false questions (Cohen, Manion, and Morrison 2007, 427-28). Copies of the test and answer key are included in Appendix 2.

Demographic data including gender, date of birth, and educational level were collected with each test for use in statistical parameters and to match pretests and posttest in order to accurately group the members of the control and test groups. No names were collected as part of the test instruments.

Participant Handout

As part of the experiment, all participants received an “After Lesson Handout” to complete before returning the following week. The handout consisted of four activities for retaining the lesson material provided. The posttest, as identified previously, tested for knowledge, understanding, and application of the lesson material. In the first activity, participants were asked to create an acrostic using the name of the Bible book studied or the principle city in the lesson. Acrostics have been found to be useful in scaffolding learning and retaining content (Frye, Trathen, and Schlagal 2010, 595). Retention or memory of basic factual information from the lesson supports the knowledge level of Bloom’s taxonomy (Bloom 1956, 65-67). Activities 2 and 3 support the participants’ understanding of the material. In Activity 2, participants were requested to summarize the lesson material in one or two statements while Activity 3 required the participants to relate the account of the lesson using their own words. Both of these activities support the second level of Bloom’s taxonomy, understanding or comprehension (Bloom 1956, 89-96). The final activity supports Bloom’s third level – application – by asking the participants to identify implications and applications from the lesson material (Bloom 1956, 120-23).

Follow-Up Questionnaire

The final instrument used in this research study was a short questionnaire following the administration of the posttest. This Follow-Up Questionnaire (Appendix 2) contained five questions and was administered to volunteers from the control and test groups in order to gain insight for further research. The questions sought to determine the approximate impact of after lesson activities and the amount of outside study that took

place among members of each group as well as the participants' overall impression of the teaching-learning method experienced.

Previous sections provided descriptions of the instruments employed for data collection in this study. The next section will describe the evaluation of the instruments in preparation for use in the experimental process.

Evaluation of Instrumentation

As described previously, the pretest was a Bible knowledge test used at Wheaton College. The results of the test published by Gary Burge (Burge 1999) provide sufficient validation of the instrument and no further evaluation was undertaken as part of this study.

The posttest instrument was presented to an expert panel prior to being administered. Members of the expert panel included one person with significant knowledge of the Old Testament in order to validate the material presented in the lesson plan and used in the quiz; one person with experience and expertise in the areas of evaluation and adult learners; and a third person qualified in both areas. All members of the panel were provided with copies of the lesson plan, posttest and answer key, handout, and follow up questionnaire to conduct their reviews.

The expert panel provided minimal comments regarding the lesson plan and posttest. Suggestions included a minor expansion in the lesson plan of the first application point and reformatting of the final section of the posttest. A suggestion to change the activities on the handout due to repetitiveness was not incorporated prior to the pilot study in order to receive additional feedback from those participants.

After adjustments were made the lesson plan, video, and posttest, materials were prepared for the pilot study. In addition to testing the experimental process and posttest, select members of both the pilot control group and pilot test group were asked to comment on the clarity of the test questions, the clarity and usefulness of the small group activities, and the follow-up questions.

The pilot study was conducted at a church in Grove City, Ohio on three consecutive Sundays in November 2010. Over 100 persons participated in the pretest with an overall average score of 56. Approximately 80 adults were present for the video lesson presentation while only 40 adults completed the posttest. Overall, 24 participants completed the process to be included in the statistical analysis. In analyzing the data it was found that the pilot study control and test groups could be considered statistically similar in their levels of Bible knowledge using the pretest. The posttest demonstrated no statistically significant difference between the control and test groups. The researcher believes that the small sample size contributed to the lack of significant results. A Cronbach's alpha test was conducted on the posttest results from the pilot study in order to test the reliability of the test. The desired alpha coefficient value was 0.8 or higher to show the instrument was highly reliable (Cohen, Manion, and Morrison 2007, 506). The result found following the pilot study was 0.71. While below the desired value, the Cronbach's Alpha result does show an acceptable level of reliability in the instrument (Gall, Gall, and Borg 2005, 140) and no changes were made in light of these results. A summary of the pilot study data and results is located in Appendix 6, Pilot Study.

Following the posttest, volunteers from the pilot study control and test groups were interviewed using the Follow-Up Questionnaire as well as being asked specific

questions with regard to clarity of posttest questions and the handout activities. The participants indicated that posttest questions seemed clear. With regard to the handout activities, the participants suggested a reminder that bibles may be used and an explanation of acrostics since many research participants will not have been in a position to create one in several years. They also suggested providing instructions for activities 2-4 together rather than separately so that the research participants could move ahead at their own pace with time reminders from the researcher. Other suggestions included providing an introduction to the research to provide context for what was taking place. Participants found the video challenging because there were no pauses for reflection or interaction.

The researcher incorporated the pilot study interview suggestions for the handout and instructions into the research protocol however the concerns about the video versus a live teacher were determined to be outweighed by the need to reduce confounding variables by maintaining a consistent presentation of the lesson material at all research sites.

Based on the pilot study results, no additional changes were made to the lesson plan or posttest. Adjustments for clarity were made to the instructions for the activity handout. Once the updates were completed and required approvals received, the research began following the procedures described in the next section.

Procedures

Upon receipt of all approvals, completion of pilot testing, and making any needed adjustments to instrumentation and study components, the data gathering phase of

the study began. While the same overall procedures were used for data gathering at each of the four sample sites, site-specific differences are noted for each phase of the process.

Pretest Procedures

First, the researcher contacted the representative from each study site to arrange administration of the pretest. In order to minimize validity issues associated with the Hawthorne effect (Cohen, Manion, and Morrison 2007, 156; Gough 2001, 324), the pretest was administered to all adults attending Sunday school at the site on the designated Sunday. The Sunday school teacher was provided instructions, found in Appendix 2, to read aloud for the pretest prior to distribution of the instrument. Once the instruments had been distributed, a ten minute testing period began. The only identifying information collected on the instruments was birth date, gender, and education level. Instruments were collected at the end of the testing period. Administration of the pretest was scheduled no more than four weeks and no less than one week prior to the second part of the research procedure.

Treatment Procedures

The second part of the research procedure was scheduled with the site representative to avoid potentially significantly lower attendance Sundays such as holiday weekends, major local events, and school holidays. This portion of the research procedure required two consecutive Sundays.

Lesson Presentation

On the second Sunday of the procedure, participating adults were asked to gather for a large group assembly during their Sunday school time (two of the sample

sites had two Sunday school sessions). The researcher introduced the project and the lesson for the day using the prepared introduction found in Appendix 1. Following the introduction, participants viewed a fifteen-minute video presentation of the Nahum lesson plan also provided in Appendix 1. After the video presentation the After Lesson Handout was distributed to all participants. Instructions, including the requirement to complete the activities alone, were given to the entire group.

Group Assignment

Once the instructions were completed, the participants received their group assignments. For the sample sites with only one Sunday school session, classes were designated as either part of Group 1 (control) or Group 2 (test). Those participants making up the control group were dismissed. At the sample sites with two Sunday school sessions, all adults in the first session were designated as Group 1 or the control group while all participants in the second sessions were designated as Group 2 or the test group. Since the lesson presentation did not require the entire Sunday school hour, the sample sites with two sessions provided additional discussion topics for the Group 1 participants to fill the remaining time.

Test Group Treatment

After any control group participants had been dismissed, the researcher led the test group in the completion of the activities found on the After Lesson Handout sheet using a prepared introduction and instructions as seen in Appendix 3.

The After Lesson Handout sheet is comprised of four activities. As part of the introduction, participants were instructed that each activity would given about five

minutes for completion with a one minute warning. The first activity requires participants to build an acrostic using the word NAHUM and/or NINEVAH to create a memorable description of the lesson. A reminder of the structure of acrostics was provided in the overall instructions. The researcher gave one example of an acrostic, which was also provided on the participants' handout, as part of the activity instructions. Participants were requested to divide into pairs in order to compare results after working alone for the first couple of minutes. The researcher moved among the participants providing general encouragement and a second, content-oriented example of an acrostic if requested. The second example is provided as part of the pre-prepared instructions. At the end of the first five-minute period participants were instructed to move on to Activities 2 through 4.

The remaining activities were explained together so that participants could move from one activity to the next without waiting for additional instructions. The researcher provided instructions and suggested approximately five minutes for each activity. In Activity 2, participants were instructed to work first in pairs and then in to form larger groups of 4 to 6 based on the overall size of the test group. The researcher read the specific instructions for Activity 2 aloud to the entire test group. This activity required the participants to summarize the prophecy covered in the video lesson in one or two statements. This was equated to the summary given in response to the question, "What did you study in Sunday school today?"

Activity 3 required participants to re-tell the account of the prophecy, identifying key points as part of the re-telling. The researcher suggested that this would

be the expanded summary given to someone asking for more detail than the simple summary response from Activity 2.

In Activity 4, participants were asked to identify implications and applications that come from the video lesson. The researcher provided definitions of implication and application as found on the prepared instructions. While participants worked through the activities, the researcher walked among the groups again providing encouragement, time prompts, and clarification of the instructions.

After all exercises had been completed, the researcher gave final instructions, per the prepared instructions, for participants not to share their activity sheets with others and re-iterated the test group designation as Group 2. Participants were encouraged to continue working on the activities through the week but were not told there would be a test. All extra materials were collected from the assembly room at the end of the session.

Posttest Procedures

On the third Sunday, members of both the control and test groups were administered the posttest – an objective test over the Nahum lesson from the previous week (See Appendix 2). An instruction sheet (See Appendix 2) was provided to each Sunday school teacher concerning the posttest. Participants were reminded of their group designations and asked to indicate those groups on the test form. Participants were given up to fifteen minutes to complete the test. Those who had not been present the previous week were instructed to indicate they were a part of Group 1. At the end of the test period, the tests were collected. At Sample Site 1, volunteers for a short follow-up interview were solicited from both the control and test groups. Representatives from each class were designated by the local contact person in the remaining sample sites.

Those participating in the follow-up interview convened in a designated area while those not participating in the interview continued with their regular Sunday school activities. Teachers were provided with the answer key to the posttest in case they wished to go over the test answers with the participants. At Sample Site 4, the interview participants took the posttest at the interview site rather than with their Sunday school classes.

Follow-Up Interview Procedures

Interview participants gathered in designated areas. At the sites with two Sunday school sessions, control and test group interview participants were interviewed separately while at the sites with only one Sunday school session all interview participants were gathered together at the same time. The researcher described the purpose of the follow-up interview and reiterated that no names would be included in the information gathered in order to maintain confidentiality. The interview group(s) at each site was asked the questions found on the Follow-Up Questionnaire (Appendix 2) and notes taken by the researcher. The original plan to record the interview sessions was eliminated due to poor recording quality at the pilot study. Summaries of the interviews are provided in Appendix 5. No specific analysis of the interview responses was conducted. These data were intended to inform the evaluation of the research design and possibilities for future research.

The pretests and posttests for each site were scored for use in statistical analysis using the answer key found in Appendix 2. A report of the composite scores for the site has been prepared for the site representative for use in future educational planning and will be distributed upon final approval of the study results. Raw quantitative data is provided in Appendix 4.

CHAPTER 4

ANALYSIS OF FINDINGS

This chapter provides a description of the compilation of the data and the method of analysis applied. In addition, the data displays and findings are presented followed by an evaluation of the research design.

Compilation Protocol

In this first section, the data collection and recording process are described. Discussion of the statistical analysis also takes place.

Quantitative Data Collection

As part of the experiment design, participants at each sample site completed both a pretest and posttest. The pretest was a 20-question Bible knowledge quiz while the posttest was a 25-question quiz over a Bible lesson concerning the book of Nahum. The instruments of those completing only the pretest or posttest were excluded as were those instruments with fewer than 50% of the questions answered. Instruments were also excluded for incomplete demographic data as these data are part of the information needed to match pretest and posttest participation.

Each test or quiz was scored using the answer key in Appendix 2 and assigned a numerical score. Each correct Bible knowledge quiz question added 3 points to the score and 4 points were added to the Nahum lesson score for each correct response on the second quiz. Scores were used in the statistical analysis. Quiz scores and demographic

data from each sample site were entered into separate Excel workbooks. The raw data for each sample site is provided in Appendix 4.

Quantitative Data Analysis

The quantitative data analysis for this study was conducted using both Excel and SPSS. For each sample site, the means of both pretest and posttest for the control and test groups were calculated as well as the standard deviation in order to provide descriptions of the scores for each group and each instrument. The range of scores and the 95% confidence interval values are also provided for each test and group. Another purpose of the descriptive statistics is to show that the distribution of the scores for each group and instrument is approximately normal, an assumption of the statistical tests used to analyze the data.

Research Question 1 was analyzed in Excel through hypothesis testing. This question consists of two groups that can be compared using a two-tailed t test (Howell 2004, 154-56). The study was to determine if the ZPD is applicable to adults in a Sunday school context. The comparison of one variable (learning) between two groups leads to the null hypothesis either being rejected or there not being sufficient evidence to reject it. The level of significance (α) used in the testing was 0.05 (Levine and Stephan 2005, 130).

Hypothesis testing analysis requires a null hypothesis (H_0) to be tested for rejection. In Research Question 1, there were two parts. The first was to validate the control and test groups as being similar based on their pretest or Bible knowledge quiz scores. This process was needed due to the non-random manner of group assignment that was employed at each site. The null hypothesis in this case was that the mean of the

control group's Bible knowledge quiz was equal to the mean of the test group's Bible knowledge quiz. In this case, the desired result was a p value or α greater than 0.05 so that the null hypothesis could not be rejected. While this does not guarantee that the control group and test group are as similar as if they had been randomly assigned, it is a sufficient indicator for this analysis.

For the remainder of Research Question 1, the null hypothesis was that there was no difference between the means of the scores of the comparison groups on the posttest. Through calculation of the t value for the pair of means, the null hypothesis was rejected or not. If the p value was less than 0.05 and the null hypothesis could be rejected, a difference in the learning of the comparison groups would be indicated. P values of greater than 0.05 would indicate no difference in the amount of learning between the comparison groups and the null hypothesis would not be able to be rejected.

Research Question 2 was analyzed using multiple regression in SPSS. In multiple regression, one dependent variable is predicted based on two or more independent or predictor variables (Howell 2004, 260). For this research, the predictor variables were age, gender and education level. For this type of analysis, the important factors to consider are the R^2 , ANOVA significance, and significance for each independent variable. The R^2 value indicates how much variance in the dependent variable is explained by the independent variables when converted to a percentage. For the ANOVA significance a value less than 0.05 indicates that the model has significance and the regression coefficients can be reviewed. Similarly, when considering the significance values for each independent variable, if the values were less than 0.05, then

that particular variable has significance when the other predictor variables are held constant.

Results of the statistical analysis of the data collected through the experimental activities are presented in tables with explanations following. The consolidated summary information tables are provided in the results section below.

Qualitative Data Collection and Analysis

Follow up interview responses were recorded by hand. Following the interviews, a summary of each session was written which is included in Appendix 5. Common themes from the interview responses were identified by simple comparison and used to inform the final evaluation of the research design and possible future research.

Demographic and Sample Data

The tables displayed here provide a snapshot of the persons who participated in the experiment. At each sample site, a minimum of forty adults (Sample Site 1 had only 38 adults available to participate at the time of the research visit) participated with an expected return rate of 90% usable quizzes. In Table 1 below, the demographic composition of the samples by gender can be viewed.

Table 1. Participants by gender

	Site 1	Site 2	Site 3	Site 4
Male	7	38	14	27
Female	15	41	11	34
<i>Total:</i>	22	79	25	61
Incomplete/Unusable	16	50	104	99
<i>Grand Total:</i>	38	129	129	160
Return Rate	58%	61%	19%	38%

Return rates of usable pretest/posttest pairs were much lower than anticipated. For sample sites 1, 2 and 4, the issue involved persons not attending consistently from week to week. Different persons were in attendance on the date scheduled for the pretest than on the posttest date. In some cases this was a normal occurrence related to vacations, business travel or job schedule. Extreme weather reduced attendance at sample sites 1 and 2 for the pretest as well. Another possibility for the irregularity of attendance indicated was the adult’s personal choice to participate in Sunday school on a consistent basis. At sample site 3, a several classes that participated in the pretest chose not to continue with the research process. At the scheduled time for the posttest, two additional classes chose not to complete the posttests. These two events reduced the return rate for Sample Site 3 to 19%.

As part of the analysis, the control and test groups at each sample site were divided by age into three categories: young adult, middle adult, and senior adult. Table 2 shows the breakdown of each group by age category for each sample site.

Table 2. Participants by age category

Control/Test Group	Site 1		Site 2		Site 3		Site 4	
	C	T	C	T	C	T	C	T
Young Adults (18-34)	1	1	7	20	3	1	1	4
Middle Adults (35-64)	10	0	27	7	8	11	16	10
Senior Adults (65 and up)	1	9	12	6	0	2	15	15
<i>Total:</i>	12	10	46	33	11	14	32	29

Each sample site’s participants are shown in Table 2 but this does not reflect the overall makeup of the adult Sunday school attendance at each site. Based on the cumulative counts of those who completed the pretest, posttest or both tests, Sample Site

1 was made up predominantly of Middle adults (51%) with 39% of the adult Sunday school attendance by Senior adults. At Sample Site 2, the predominant population was also the Middle adults (50%) but the next largest group was the Young adults at 34%. Sample Site 3's population was 47% Middle adults and 45% Senior adults. At Sample Site 4, Senior adults represented 55% of the attendees while Middle adults comprised 37%. Young adults were only 8% of the adult Sunday school attendees at both Sample sites 3 and 4.

The final item of demographic data collected for the analysis was education level. Participants selected from six choices on the quiz form. These choices were: some high school, high school diploma/GED, some college, college degree/trade school, some graduate school/Masters degree, and post graduate work/post graduate degree. The six choices were grouped into three categories for analysis purposes. Table 3 shows the categories and the number of participants in each category for each sample site.

Table 3. Participants by education level category

Control/Test Group	Site 1		Site 2		Site 3		Site 4	
	C	T	C	T	C	T	C	T
Some High School/ High School Diploma/GED	2	1	14	2	1	4	9	8
Some College/ College Degree/ Trade School	9	8	21	20	7	9	12	14
Some Graduate School/ Masters Degree/ Some Post Graduate Work/ Post Graduate Degree	1	1	11	11	3	1	11	7
<i>Total:</i>	12	10	46	33	11	14	32	29

Looking at the overall educational makeup of the adults in Sunday school at the sample sites, Sample site 1 had 65% of participants reporting some college/trade school or a college degree and an additional 23% have completed at least some graduate work. Sample site 2 had the largest percentage of graduate work completed at 36% of the participating adults and 70% reported completed at least some college or trade school. At Sample site 3, 58% of the participants reported having completed some college/trade school while another 24% reported completion of some level of graduate education. Sample site 4, which also had the highest population of senior adults, reported 29% of participants having a high school diploma or less. The participants at Sample site 4 reported 51% having completed at least some college/trade school while 19% had completed graduate level education work.

In Table 4, a representative sample of the raw data tables is provided. The full set of quantitative data collected may be found in Tables A1-A4 in Appendix 4.

Using the information summarized in the previous tables and illustrated through the sample of raw data, descriptive statistics were calculated for each sample site in order to provide a picture of the distribution of results. The descriptive statistics are shown in Table 5, Statistical Description of Study.

The descriptive statistics indicate that the scores for the pretest and posttest are approximately normally distributed. These statistics served as the starting point for many of the analyses that were completed in order to address the research questions. Those results are found in the following sections of this chapter. Caution should be exercised however as the results also indicate the possibility of a ceiling effect in the data. For the posttest in particular, the expected mean is 52 but the calculated means at all test sites

were nearly 7 or more points higher than the expect mean. At each sample site, the scores fell within plus and minus 3 standard deviations of the mean, most were within 2 standard deviations above and below the mean. The issue lies in the fact that the means of the results preclude the possibility of values extending much beyond 2 standard deviations above the mean. This result increases the possibility of a ceiling effect issue (Ledbetter et al. 1991, 51; Bufford, Paloutzian, and Ellison 1991, 64).

Table 4. Sample of raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
38	8/25/66	45	1	2	1	97	80
34	8/31/39	72	2	2	1	94	69
22	2/15/72	39	2	2	1	60	52
21	1/7/69	43	2	2	1	89	76
20	11/22/65	46	2	1	1	71	58
18	2/21/65	46	2	2	1	56	52
17	10/10/76	35	2	2	1	66	56
9	8/29/77	34	1	2	1	87	68
8	7/20/73	38	1	2	1	91	83
7	6/8/61	50	2	1	1	38	56
5	6/2/59	52	2	2	1	100	84
4	2/23/47	64	1	3	1	97	75
37	9/21/46	65	2	2	2	79	68
35	5/3/36	75	2	3	2	100	80
32	4/13/42	69	2	1	2	88	80
31	12/18/41	70	1	2	2	63	76
29	11/17/37	74	1	2	2	89	64
28	2/20/40	71	1	2	2	94	91
15	4/11/77	34	2	2	2	83	72
3	4/16/36	75	2	2	2	88	80
2	3/22/23	88	2	2	2	48	63
1	10/17/45	66	2	2	2	76	80

Findings Related to Research Question 1

Research Question 1 asked if adults in small groups would learn significantly more than those left to learn alone. The results of the t test analysis described previously are shown in Table 6. If the t value for the comparison of the control and test group means on the pretest has a p value of greater than ($>$) 0.05, then the two groups will be considered similar. Looking at Table 6, for each of the sample sites, the p value for the

Table 5. Statistical description of study

	Site 1		Site 2		Site 3		Site 4	
	Control	Test	Control	Test	Control	Test	Control	Test
Pretest mean	78.83	80.80	75.03	79.22	77.40	87.14	73.53	73.20
Pretest Std Dev	20.06	15.41	23.77	13.98	18.89	14.25	20.44	19.89
High Value	100	100	100	100	100	100	100	100
Low value	38	48	26	49	43	51	17	23
Conf	11.35	9.55	6.87	4.77	11.16	7.47	7.08	7.24
Posttest mean	67.42	75.40	65.13	73.09	73.45	84.86	58.88	71.03
Posttest Std Dev	12.19	8.68	16.65	12.42	17.73	14.82	17.04	13.97
High value	84	91	96	96	92	100	92	100
Low value	52	63	28	44	24	52	32	40
Conf	6.90	5.38	4.81	4.24	10.48	7.76	5.90	5.08

Table 6. Results for research question 1

	Site 1		Site 2		Site 3		Site 4	
	Control	Test	Control	Test	Control	Test	Control	Test
Pretest mean	78.83	80.80	75.03	79.22	77.40	87.14	73.53	73.20
Pretest Variance	402.33	237.51	565.06	195.55	356.66	203.14	417.86	395.58
T value	-0.2599		-0.9818		-1.4218		0.06286	
P value	0.7976		0.3293		0.1722		0.95009	
Posttest mean	67.42	75.40	65.13	73.09	73.45	84.86	58.86	71.03
Posttest Variance	148.63	75.38	277.09	154.27	314.47	219.52	290.31	195.03
T value	-1.7886		-2.4337		-1.7138		-3.0593	
P value	0.08885		0.01726		0.10284		0.00336	

pretest was greater than 0.05 indicating that the null hypothesis cannot be rejected and the two groups are statistically similar in their levels of basic Bible knowledge.

On the posttest, if the t value for the comparison of the control and test group means has a p value of less than ($<$) 0.05, then the two means will be considered significantly different and an effect will be realized from the experimental treatment. For Sample sites 1 and 3, the t test analysis of the posttest indicates p values of 0.09 and 0.10 respectively. These values are not less than the desired 0.05 value and thus do not allow the null hypothesis to be rejected and indicates no significant change in learning. These were the sites with the fewest samples which may have significantly contributed to this result. Sample sites 2 and 4 had p values of 0.02 and 0.003 respectively from the t test analysis. Both of these values are less than 0.05 indicating that a significant difference was found in the test results between the control and test groups. Table 5 shows that the posttest means for each sample site's test group was several points higher than that of the control group. With similar difference between the posttest means at Sample sites 1 and

3 as those found at Sample sites 2 and 4, the possibility of low return rate and thus number of samples available for analysis driving the high p values on the t test is further supported.

Findings Related to Research Question 2

Having verified through statistical analysis and Research Question 1 that small groups provided a more effective learning environment for adults in two of the four cases, Research Question 2 sought to determine if the relationship continued when looking deeper at age, gender, and education level. The results of the multiple regression analysis for Research Question 2 are displayed in Tables 7-10. Each sample site's results are provided in a separate table. The analysis was done individually in order to show that the results were not impacted by a particular sample site.

In each table, the ANOVA regression significance reflects a significant model if the value is less than 0.05. In the coefficient section, the independent variables of age, gender, and education level are each considered significant if the individual significance values are less than 0.05. Finally, the value of R^2 reflects the amount of variability in the dependent variable that is accounted for through the combination of age, gender, and education level as the independent variables in the model.

In Table 7, the regression significance for Sample Site 1 was calculated as 0.000. This result is less than 0.05 indicating that the model is significant so review can proceed to the coefficients. The only coefficients below the threshold value of 0.05 are those for Education level (0.001) and Group (0.002). These are the only coefficients that are significant. The level of impact is indicated by the B value in each case. First, the B value for Education level is -6.43. This indicates that for each step up in education level,

the difference between scores on the pretest and posttest decreased by over 6 points. Similarly, the B value for Group of 7.74 indicates that Group 2 increased their scores on the posttest over the pretest by nearly 8 points more than Group 1. Research Hypothesis 1 is supported by the significance of the Group variable. The lack of significance for Age and Gender support Research Hypotheses 2 and 3, but with a significant result for Education Level, Research Hypothesis 4 is rejected. Education level does impact learning in small group activities. The variance accounted for by the independent variables is the R^2 value of 11.6%.

Table 7, Results for research question 2, site 1

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.340	.116	.091	16.718	
ANOVA – Dependent variable: score change					
Model	Sum of Squares	df	Mean Square	F	Sig
Regression	6617.720	5	1323544	4.735	.000
Residual	50588.550	181	279.495		
Total	57206.270	186			
Coefficients – Dependent variable: score change					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	-10.796	8.576		-1.259	.210
Age	.001	.068	.001	.011	.991
Gender	3.208	2.529	.091	1.269	.206
Education Level	-6.430	1.862	-.251	-3.453	.001
Site	-2.014	3.827	-.037	-.526	.599
Group	7.739	2.487	.221	3.191	.002

In Table 8, the regression significance for Sample Site 2 was calculated as 0.000. This result is less than 0.05 indicating that the model is significant so review can proceed to the coefficients. The only coefficients below the threshold value of 0.05 are those for Education level (0.001) and Group (0.002). These are the only coefficients that are significant. The level of impact is indicated by the B value in each case. First, the B value for Education level is -6.42. This indicates that for each step up in education level, the difference between scores on the pretest and posttest decreased by over 6 points. Similarly, the B value for Group of 7.75 indicates that Group 2 increased their scores on the posttest over the pretest by nearly 8 points more than Group 1. Research Hypothesis

Table 8, Results for research question 2, site 2

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.338	.114	.090	16.730	
ANOVA – Dependent variable: score change					
Model	Sum of Squares	df	Mean Square	F	Sig
Regression	6543.955	5	1308.791	4.676	.000
Residual	50662.315	181	279.902		
Total	57206.270	186			
Coefficients – Dependent variable: score change					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	-11.005	9.083		-1.212	.227
Age	.001	.072	.001	.011	.991
Gender	3.087	2.521	.088	1.224	.222
Education Level	-6.420	1.864	-.250	-3.444	.001
Site	.300	2.643	.008	.114	.909
Group	7.746	2.500	.221	3.098	.002

1 is supported by the significance of the Group variable. The lack of significance for Age and Gender support Research Hypotheses 2 and 3, but with a significant result for Education Level, Research Hypothesis 4 is rejected. Education level does impact learning in small group activities. The variance accounted for by the independent variables is the R^2 value of 11.4%.

In Table 9, the regression significance for Sample Site 3 was calculated as 0.000. This result is less than 0.05 indicating that the model is significant so review can proceed to the coefficients. The only coefficients below the threshold value of 0.05 are those for Education level (0.001) and Group (0.003). These are the only coefficients that

Table 9, Results for research question 2, site 3

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.349	.122	.098	16.658	
ANOVA – Dependent variable: score change					
Model	Sum of Squares	df	Mean Square	F	Sig
Regression	6980.332	5	1396.066	5.031	.000
Residual	50225.938	181	277.491		
Total	57206.270	186			
Coefficients – Dependent variable: score change					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	-11.973	8.605		-1.391	.166
Age	.004	.068	.004	.059	.953
Gender	3.316	2.514	.094	1.319	.189
Education Level	-6.267	1.860	-.244	-3.370	.001
Site	4.549	3.162	.089	1.259	.210
Group	7.511	2.483	.214	3.024	.003

are significant. The level of impact is indicated by the B value in each case. First, the B value for Education level is -6.27. This indicates that for each step up in education level, the difference between scores on the pretest and posttest decreased by over 6 points. Similarly, the B value for Group of 7.51 indicates that Group 2 increased their scores on the posttest over the pretest by nearly 8 points more than Group 1. Research Hypothesis 1 is supported by the significance of the Group variable. The lack of significance for Age and Gender support Research Hypotheses 2 and 3, but with a significant result for Education Level, Research Hypothesis 4 is rejected. Education level does impact learning in small group activities. The variance accounted for by the independent variables is the R^2 value of 12.2%.

In Table 10, the regression significance for Sample Site 4 was calculated as 0.000. This result is less than 0.05 indicating that the model is significant so review can proceed to the coefficients. The only coefficients below the threshold value of 0.05 are those for Education level (0.001) and Group (0.002). These are the only coefficients that are significant. The level of impact is indicated by the B value in each case. First, the B value for Education level is -6.33. This indicates that for each step up in education level, the difference between scores on the pretest and posttest decreased by over 6 points. Similarly, the B value for Group of 7.79 indicates that Group 2 increased their scores on the posttest over the pretest by nearly 8 points more than Group 1. Research Hypothesis 1 is supported by the significance of the Group variable. The lack of significance for Age and Gender support Research Hypotheses 2 and 3, but with a significant result for Education Level, Research Hypothesis 4 is rejected. Education level does impact

Table 10, Results for research question 2, site 4

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.342	.117	.092	16.708	
ANOVA – Dependent variable: score change					
Model	Sum of Squares	df	Mean Square	F	Sig
Regression	6676.929	5	1335.386	4.783	.000
Residual	50529.341	181	279.168		
Total	57206.270	186			
Coefficients – Dependent variable: score change					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	-11.354	8.624		-1.317	.190
Age	.015	.072	.016	.213	.832
Gender	3.149	2.516	.090	1.251	.212
Education Level	-6.328	1.866	-.247	-3.391	.001
Site	-1.941	2.774	-.052	-.700	.485
Group	7.787	2.487	.222	3.131	.002

learning in small group activities. The variance accounted for by the independent variables is the R^2 value of 11.7%.

Using the results provided above, three of the four Research Hypotheses are supported by the statistical analysis showing that the learning relationship indicated in Research Question 1 does persist when taking into account age and gender. Education level was the only factor that appears to impact the learning relationship found. The relationship was also seen to be consistent across all four sample sites.

Evaluation of Research Design

Overall, the research design functioned well. One of its greatest strengths was its relative simplicity. Using objective pretests and posttests, a pre-recorded lesson, and simple activities minimized implementation issues. Equipment did prove to be a challenge at a couple of the sample sites for the video presentation but this was overcome quickly and without significant impact on the participants. The short timeframe involved for the research protocol was also a strength of this research design.

A weakness of the design would be the hand scoring of the pretest and posttest. While objective, scoring by hand introduces the possibility of error in the marking and calculation of test scores. Another weakness comes from the need to use a quasi-experiment. While much educational research requires the use of quasi-experiments due to the use of pre-defined groups, a truly random assignment to the control and test groups would have been better. The low return rate of usable samples was a third weakness of the research design. While a large number of adults completed the pretest, week-to-week variability in adult Sunday school attendance due to work schedules, family plans, and personal choices caused a high number of persons not to be present for one or more weeks of the protocol. Changing the design to allow for greater attendance flexibility may have increased the return rate significantly. Finally, the introduction of a possible ceiling effect in the results is a weakness of the design. Not only would a ceiling effect in the data call into question other statistical information based on the assumption of a normal distribution, it would limit the usability of the results. In analysis of the results of this particular study, the data exhibited some characteristics of a ceiling effect (high actual versus expected mean) but not all (values fell within plus or minus 2-3 standard

deviations). The low return rate may have contributed to the results not providing a clear indication of a ceiling effect in the data.

CHAPTER 5

CONCLUSIONS

In this chapter, the research purpose is reiterated followed by the research questions and hypotheses. The overall research and analysis results are summarized as related to each research question and hypothesis. Research implications, research applications and suggestions for future research are outlined based on the statistical analysis results presented in chapter 4 and the follow-up interviews summarized in Appendix 5.

Research Purpose

The purpose of the research is to explore the application of Lev Vygotsky's Zone of Proximal Development to adults in a Sunday school context.

Research Questions

The following questions will be addressed through this study:

1. Will adults taught in small groups learn significantly more than those adults left to learn on their own?
2. Does the relationship persist even while taking into account age, gender, and educational level?

Research Hypotheses

For the purposes of this primarily quantitative research, the research hypotheses are as follows:

1. Additional small group discussion and learning opportunities will produce more measureable learning in adults than only large group presentation of material.
2. As adults age, the benefit of small group learning opportunities decreases but is not eliminated.
3. Gender is not a determining factor in the amount of learning that takes place in small groups.
4. Education level is not a factor in the amount of learning resulting from small group learning activities.

Summary of Results

In the following paragraphs a summary of the analysis results provided in chapter 4 may be found. This section relates those results to each of the research questions and hypotheses.

Research Question 1

Research Question 1 asked if adults taught in small groups would learn significantly more than adults left to learn on their own. The control group at each sample site fell into the category of “learning on their own” while the test group participated in small group learning. The statistical results in Table 6 show significantly higher scores on the experimental posttest for the test groups over the control groups at two of the four sample sites, indicating a significantly higher level of learning by those in the test group. At the other two sample sites, the test group posttest results were not statistically significantly higher than those of the control group. However, at these sites (Sample Sites 1 and 3), the difference in mean posttest score between the test group and the control group was similar in magnitude to the difference at the two sites that did not

show significant results. The much smaller sample size (Table 1) at these sites may have impacted the statistical results at sites 1 and 3.

Through the course of the experimental protocol, Sample sites 1 and 2 had multiple Sunday schools. In these cases, the control groups and test groups viewed the lesson video separately but both received the same activity sheet. At Sample sites 3 and 4, there was one Sunday school session with both the control and test groups viewing the lesson material simultaneously followed by the distribution of the activity sheet and division into groups. The consistency of posttest results despite this variation in the experimental process supports the conclusion that the small group time was a primary factor in the increased posttest scores of the test group and thus yielded a higher level of learning.

Research Question 2 and Research Hypothesis 1

In Research Question 2, the issue was whether or not the relationship of the control group and test group with regard to the amount of learning persists when considering age, gender, and education level. Analysis was completed using multiple regression via SPSS. Each sample site was analyzed separately and the results presented in Tables 7-10 in chapter 4. For each sample site, the regression model was found to be significant which led to a review of the coefficients. At all sample sites, the only coefficients yielding significant results ($\text{Sig} < 0.05$) were those for education level and group.

Considering first the Group coefficient, the resulting coefficients were 0.003 or lower. The B or intercept values were positive indicating an increase in score when comparing group 1 (control group) with group 2 (test group). It was these values that

provided support for Research Hypothesis 1. The control groups received only the large group presentation of the material while the test groups participated in small group activities as well. At each sample site, the test group's scores increased between 7.5 and 7.9 points from the pretest to the posttest more than the control group scores. The hypothesis that additional small group discussion and learning opportunities would produce more measurable learning in adults than only large group presentation of the material was supported by these results. Research Question 2 was also answered by these results since the score for Group 2 (test group) were consistently greater than the scores for Group 1 (control group) as shown in the previous analysis.

Research Hypotheses 2, 3, and 4

Education level was the second coefficient with a significant result. In this case, the sample site values were all 0.001, well below the significance threshold of 0.05. As such, Research Hypothesis 4 that education level would not be a factor in the amount of learning resulting from small group learning activities, must be rejected. The intercept value for each sample site indicate that the score difference between the pretest and posttest decreased (negative value) between 6.3 and 6.4 points for each step up in education level. In other words, at Sample Site 2, the average test scores for those at Education level 1 (Some high school/high school diploma or GED) were 6.4 points lower than the average scores for those reporting Education level 2 (Some college/college degree/trade school). Thus, education level did impact the amount of learning in small groups.

Research Hypotheses 2 and 3 were supported as a result of the regression analysis. The coefficients for these factors were not significant for any sample site. The

range of coefficients for Age was .85 to .99, well above the significance threshold of 0.05. For Gender, the range of coefficients was .19 to .22, also well above the significance threshold. The lack of significant results indicated that age was not a significant factor with regard to small group learning, nor was gender.

The final coefficient in the analysis, Site, was analyzed in order to confirm that differences between the sample sites did not cause significant changes in the results. There was a wider range of significance values for the Site coefficient (.21 to .91), but all were higher than the significance threshold of 0.05. These results showed that variation in sample site did not have a significant impact on the results and supported the generalizability of the research.

Based on the data and analysis results, it was found that adults in small groups would learn significantly more than those learning on their own (RQ1) and that this relationship persisted when considering age, gender, and education level (RQ2). The regression analysis showed that Research Hypotheses 1-3 were supported by the analysis while Research Hypothesis 4 must be rejected. Age and gender did not significantly impact the learning in the small groups but education level did have a significant impact.

Research Implications and Applications

Vygotsky's ZPD began influencing educational practice once his work became available for review on the world stage. Using his theories, the concept of scaffolding was created (Wood, Bruner, and Ross 1976). The results of this study support the use of the ZPD for adults. As in Vygotsky's original work with children, adults working in small groups on a problem showed a greater level of learning than those who attempted to learn alone. While there was not a specific 'more knowledgeable other' in the

experiment, the group members working together provided support for one another's learning. The differences in the posttest mean scores for the test and control groups indicates a zone of proximal development for the Bible learning domain. Based on the results of this study, the following implications and applications have been identified.

Importance of Relationships

Vygotsky's learning theory is known as a socio-cultural theory. Relationships are implied in the very name. In the ZPD, the "more knowledgeable other" comes alongside the learner to provide guidance and assistance in order to complete a task that he/she could not complete alone (Vygotsky 1978, 86). In this way, the learner learns how to accomplish a task through the relationship. The skill then leads the learner's development of higher mental functions.

As the current study showed, this concept applies to adults as well as children. The relationship between the teacher and the learner is identified by their assigned roles which may or may not coincide with chronological age. Adult learners need to feel a sense of community, of belonging in order to trust the teacher to guide the learning process. At the same time, the adult learner also needs to feel a part of the group of learners. Peer relationships are also important in Vygotsky's theory as it is through social interaction (play and imitation) that the skills are refined as the learner becomes more and more confident until the task can be completed alone and is fully integrated into the learner's skill set and development. In the current study, learners in the test group (Group 2) worked together to complete the worksheet activities. Their social interaction while working together enabled the learners to retain more knowledge than those who were required to complete the activities alone. An Australian study of concerning play in

adult learning settings found that the learners not only were able to gain confidence in their own knowledge but also used the social interaction to the benefit of the entire group by incorporating other people and resources (Harris and Daley 2008, 64).

In application, adult learners should be allowed to share their personal experience with other learners through small group activities. The small group interaction allows different members of the learning community to share their relevant experience in a smaller, less intimidating setting than the large group while also allowing more learners to share in the solution to the assignment.

The teacher builds trust with the learners through encouragement, clear presentation of the assignment requirements, authentic presentation of the purpose for the assignment, and personal interaction with each group of learners together and individually. While building trust, the teacher is also stimulating development in the learners (Johnson 2006, 64; Cozolino and Sprokay 2006, 13-15). As the teacher learns more about each learner, the assignments become targeted to those areas that require additional support in order for development to proceed (Williams 2001, 8).

Vygotsky's belief that learning is seen twice – first as part of social interaction and then as an internalized skill – is reflected in the relational dynamics between adult learners and with their teacher (Vare 1993, 2,14).

Small Group Ministry

The social learning concept supported in this study is not a new concept. Churches have been using small group ministry in various forms for over two hundred years, primarily as a teaching mechanism for children and youth. An implication of the

current study is that this small group structure provides an improved environment for adult learners to take in moral and religious teaching (Tappan 1998, 7).

Typically, adult learners in denominations that practice Christian education for adults are gathered together in a room in order to listen to a presentation of material with the assumption that all learners present have the same background knowledge. The teacher will present the material as a lecture with a question or two asked to ensure the learners are still being attentive. There is little or no time set aside for discussion or review of previous material to build a knowledgebase for the learners.

Based on the current study, a better way to approach the adult Bible class would be to have a time of review in which the learners share together the material presented in the previous sessions while the teacher provides encouragement and scaffolds the knowledge so that all benefit from the foundation of the previous material. When the new material is presented, the teacher includes activities based on his/her knowledge of the learners to allow for discussion of the material and interaction among the learners so that personal experience may be brought to bear on the new material. The session can be closed with a summation of the new material by the learners, thus giving the entire group the benefit of the shared knowledge gained.

The act of discussing the material brings the learners together and offers new perspectives. During the follow-up interviews, one of key insights from the participants was how much perceived benefit was gained just from talking about the material shortly after it was presented so that all members of the group had a more complete picture of it. This shows that it is not the size of the group that makes small group ministry effective,

but rather the fact of having a small enough group in order for all to participate in building the knowledgebase of the group.

Education Level

Through multiple regression analysis of the posttest results, the current study showed that education level had a significant impact on the amount of learning that took place among the adult learners. Showing that the ZPD can be used for adults regardless of age or gender allows educators to set those factors aside when teaching adults whether in formal or informal educational settings (Schuller 1992, 31). The study results indicate that those who have had more education are more likely to develop and maintain the use of higher mental functions and critical thinking. The study also showed that even with higher education levels, those who participated in the small group activities attained a higher level of learning than those who worked strictly alone.

In a formal educational setting, a more homogeneous group of learners may be anticipated, but the teacher should take the time to learn the background of the learners rather than assuming such. The material to be studied may be presented in a different way depending on the learners in the class. Activities used to reinforce the material should also be modified based on the education level of the learners but not eliminated as small group discussion and scaffolding still provide a benefit to more highly educated learners (e.g., heuristic scaffolding) (Holton and Clarke 2006, 134). Undergraduate students, regardless of age, may benefit from additional small group interaction which can be mandated as part of the coursework or encouraged through study groups. Graduate students appear to receive less benefit from small group activities so more

independent research could be planned with the small group activities limited based on the purpose of the course or material.

For more informal educational setting such as clubs or Sunday school classes, a more heterogeneous group may be expected. Depending on the ages of the learners and the purpose, the education level of the learners may cover the entire learning spectrum from minimal schooling to advanced degrees. In presenting material to such a diverse group, the teacher must again take time to get to know the learners and provide the appropriate scaffolding during presentation of the material. During small group activities, the learners can be divided strategically to pair those with more education together or spread them throughout the small groups. When creating activities, the teacher can assign roles to ensure all group members are actively involved in the activity or allow the natural tendencies of the learners to flow. Adults will bring their experience, both from academia and life, into their learning. Sharing those experiences together will aid in the development of all participants. It is a reminder that “iron sharpens iron” (Psalm 27:17).

Formal Educational Methods

Although Sunday school would not be considered a formal educational setting, it does have some similarities that allow the results of the current study to be transferred into more formal settings. At the final sample site, the lesson material was presented in a large, lecture-style room with nearly two hundred people in attendance. This is similar to a college lecture hall environment. While approximately half the participants departed after the lesson presentation, the remaining learners successfully negotiated the small group activities as facilitated by the researcher. As already stated, the learners who

participated in the small group activities performed better on the posttest than did their counterparts. The implication here is that small group activities need not be confined to informal learning environments or small classrooms.

The lecture is an effective method of passing along copious amounts of information to a large group at once. Based on the current study, the learning, retention, and understanding of that material could be improved through the use of small group activities, even in a large lecture hall. Activity 1 in the study was the creation of an acrostic based on the presented material. After working for a few minutes alone, the learners were instructed to share their acrostics with another person. This type of simple activity could easily be employed in a large lecture hall as it would not necessarily require many learners to move around the room. Activities involving triads or quads could be used in smaller classrooms with tables. The key is to allow time for the learners to interact with the material on their own and then together. As the learners work together, sharing their insights from the new material and previous experience, all will benefit from multiple perspectives in a way that cannot be achieved by a single presentation or learner perception. This type of learning has been used with some success in high school (Hoagland 2000, 5, 20).

Adult Learners and the ZPD

Vygotsky's work centered on children but as his work has become known beyond his native land it has been used to support research for learners of all ages. The current study supports the use of the ZPD with adult learners. As an implication of these results, the concepts that have been developed from Vygotsky's ZPD should also be

effective in describing and supporting adult learning. The most well-known of these concepts is that of scaffolding.

Scaffolding is being used for adult learners in the areas of teacher education (Brodie 2000) and supervision (Zorga 2002, 272) at this time, particularly in Europe and the United Kingdom. Journal articles describing scaffolding in these domains provide qualitative information regarding the positive results achieved. Apprenticeship programs are also employing the concept of scaffolding. A related concept is that of cognitive apprenticeship which has been used in the pharmacy and management fields (Brandt, Farmer, and Buckmaster 1993, 70-74). This researcher was able to find only a very limited number of studies providing quantitative results for the learning benefits of the ZPD at any age, but particularly for adults (Bockarie 2002). The situation is made more challenging by the difficulty in overcoming methodological challenges to measure learning (Sandoval and Bell 2004, 199-201)

Using the current study as an encouragement and guide for quantitative experimentation into the use of the ZPD, the teacher education, supervision, and other apprenticeship-type programs can be studied quantitatively. The benefit of quantitative analysis in addition to qualitative is the ability to replicate the results while at the same time providing data that can be used for budgetary support and other analytical purposes requiring numbers. Those programs that can show a return on investment are more likely to continue during difficult economic times than those that cannot. Quantitative research and analysis of the benefits of the ZPD and scaffolding can provide the support needed to continue these adult learning programs.

Learning Theory in Christian Education

Learning theory is not foreign to the Christian education field. Most Christian educators who are serving in Christian schools or in education programs at a church have been received some kind of training based on secular educational principles and methods. Even Sunday school teachers can pick up a book or attend training sessions to improve their teaching. Formal training has not been necessary as those who teach in the church have at some point participated in formal education themselves.

As the Creator of the universe and all that is contained within it, God is also the Creator of truth. As noted in the Bible, God reveals Himself through His creation to all humankind, not just those who profess belief in Him. This includes the observations of non-Christian theorist who attempt to explain how and why in the world, including how learning and development take place. Vygotsky was a Russian Jew who lived during the rise of Marxism. In keeping with his time, many of his stated beliefs were antithetical to Christian beliefs however, what he observed about the development of children was not based on his belief structure, only the conclusions drawn concerning those observations and the interpretation of those conclusions reflect his position. It is the responsibility of Christian educators to identify the truth to be found in theories such as the ZPD and apply that truth to best support the learning and development of all learners. This study took place in a Christian environment, using a secular theory created by a Marxist theorist. If the ZPD is valid in this environment, what opportunities await to improve education in the church and other Christian educational settings?

The particular educational setting of concern for this researcher is that of discipleship. Much work has been done in Southern Baptist circles to improve and

maintain the educational programs for children and youth while little attention has been given to the principles of adult education in the church. This does not mean a lack of materials, but rather a lack of understanding of adult learning theory and how it can guide the practice of adult Christian education. Teachers receive training the learning theory in order to teach children. Training is provided to those who will teach literacy classes and in the halls of higher education. Those who are entrusted with spiritual development should have access to all the tools available so that the learners receive maximum benefit from the learning experience (Mercer 2006, 165).

Most teachers in churches are volunteers and should not be expected to be required to earn a degree in teaching, but resources and training in the principles and theory of teaching can be made available to them. Teachers are often learners as well. Encouraging them to explore options based on their knowledge of the learners provides them the opportunity to discover this truth and see how it works in their classrooms.

Additional resources provided in leader guides associated with Sunday school material, more frequent training programs, and on-line resources are also opportunities that can be used to reach out to teachers and ultimately provide teaching in the church at a level closer to the standards that should be expected for such an important task. Greater understanding of learning theory would also aid teachers concerning the teaching activities included in adult curriculum. For example, many Sunday school teachers use the teaching materials as if all activities provided must be completed in order to successfully present the lesson regardless of learner preferences, background or knowledge. If teachers better understood how adults learn (Simmons 2007, 42-49), they could choose activities based on their knowledge of the learners in their classes and

include some specific activities that allow for times of review for more knowledgeable learners and new foundational information for those new to the subject matter.

The researcher believes this study helps to form a foundation on which more quantitative adult ZPD research may be conducted, not only in the area of Christian education but in overall education. In particular, the Christian community tends to be reluctant to embrace ideas from sources that appear antithetical to Christian beliefs. If Christians truly believe that God created all truth, then the truth found in research outside the community should also be applicable inside the Christian community. The key is to discern the truth.

Research Limitations

This study was conducted using a limited sample within a particular denominational framework and Christian education structure. While not completely invalidating the results for use in other denominations, caution should be exercised in assuming the same results will be found, particularly if the educational environment is significantly different than that used in the study. Even within the SBC, many churches have chosen to use a different educational structure for adults. Those structural differences were not included within this study and may limit the value of this study to those churches.

The presentation of the lesson material was also a limitation of this study. In order to maintain consistency, a video presentation was used. While supporting the methodology of this particular study, the video did not allow for interaction, questions, or even time for reflection before more material was presented. The video also reduced opportunities for adding visual cues to add interest and variety to the presentation. All

learners are not alike and this type of presentation may limit the usefulness of study results for those learners who require more visual or manipulative access to information.

The research was conducted in an informal, Christian context which limits its potential applicability and usability in formal educational settings whether Christian or secular. Another limitation is the use of one theory in the study. This was not a comparison of techniques. This researcher believes that other theories will also prove useful within a Christian context but this study did not consider theories beyond the ZPD.

Further Research

This section provides a discussion of future research possibilities based on the findings of the current research design and explores avenues for successful replication of the results. No arena of thought can be completely researched or discussed. Another perspective or angle should be considered, another variable or hypothesis tested. As this study reveals the answers to some questions, it must necessarily also reveal more questions to be asked for future research.

Teaching Activities

One avenue of further research suggested by this study is the type of teaching activities that are most effective in producing learning within the ZPD for adults. The learning activities chosen for this study were reviewed by the test group participants. Activity 1, Acrostic, was found to be both challenging and useful by some, not as useful by others. Those who found the acrostic least useful appeared to be persons who did not feel comfortable creating that type of memory device. Several found Activities 2 (summary) and 3 (key points) to be repetitive and not particularly helpful separately.

Other studies regarding learning styles should provide resources for alternative activities that can be added to determine the most effective activities for the majority of adult learners. The use of multiple senses in a particular activity should also be included. A study that compares the impact on learning from these and other learning activities such as facilitated small group discussion, object lessons, role playing, or other such activities that involve more senses than hearing should provide educators with a toolkit for use with their adult learners.

Longitudinal Study

The research conducted in the current study was a snapshot of learning for four groups. A longitudinal study testing the long term application of small group/ZPD-focused teaching on a group of adult learners should be conducted in order to develop an understanding of any benefits of teaching to learners' ZPD over an extended period. This type of study should be a significant benefit to the educational community. Does the effect found in a one-time lesson carry over and produce long term improvements or does the effect taper off? A longitudinal study should also provide data regarding the overall usefulness of small group interactions for maintenance of knowledge and spiritual development. Any discipleship applications will require a longitudinal study in order to show the impact of applying the ZPD to discipleship process to spiritual formation. A one-time snapshot cannot provide specific data regarding a long term process such as spiritual formation. Only a longitudinal study can give the necessary information to expand the knowledge base in this area.

Learner Perception of Teaching Effectiveness

Another area of future research is the perception of the amount of learning and therefore teaching that is taking place in adult classrooms, Sunday school or other adult learning contexts. Unless in a formal educational setting, adults are often not compelled to study material presented, even when they understand it is important. There is also little evaluation of learning in the informal learning contexts in which most adults participate. The more frequent use of review, 'pop' quizzes, and other covert or overt evaluation techniques should provide educators with a clearer picture of the amount of learning actually taking place, even in more informal educational settings. The research should include creative evaluation methods to determine the learning taking place. At the same time, learners should have the opportunity to evaluate the teaching, providing their perception of the adequacy of the instruction. Adults have a wide range of options for learning opportunities. Self-motivation is not always sufficient to maintain an anticipated level of learning. The additional stimulation of a quiz or other test of knowledge may be useful in helping adults achieve their personal learning goals. The learner's perception of the instruction received may also be an indicator of the learning taking place as adult learners will likely be less focused when they do not connect with the teacher. Comparing the learner perception with the evaluation data should provide a picture of the relationship between the two positions. Vygotsky's learning theory encourages relationship between the learner and the teacher. A critical part of that relationship, especially for the adult learner is his/her perception of the teacher's competence in presenting the material.

Teacher Training

In conjunction with this avenue of research, the effect of teacher training on the effectiveness of teaching should be explored. This researcher has observed that teachers tend to teach as they have been taught. Learners, even adults, have been indoctrinated into the lecture-style of teaching. While lecture has its place and is the best option in many situations, teachers should be taught to evaluate the presentation options available for the given material and environment. Adult learners are both similar to and very different from traditional child learners. The life experience brought into the classroom by adult learners impacts how they interact with the material and the teacher. Teachers of adults should receive training in facilitating discussion in order to draw out and apply the learners' experience to the topic at hand. Combining research showing the impact on learning and the learners' perception of teaching effectiveness with specific methods of teacher preparation should provide support for changing teacher training, particularly for adult learners.

Small Groups

With regard to the continued popularity of small groups as a part of education in the church, additional research should be conducted to look at the effectiveness of the small groups for spiritual formation. Discipleship is a critical task of the church. Preparing believers to make disciples according to the command in the Great Commission needs to be a priority of the educational arm of churches. Using the results of this and future studies, churches would be better equipped to not only build the foundational knowledge of believers but also prepare them to pass along what they have

learned. Research into the small group movement and the most effective means of applying the concept could take many forms.

Aspects that should receive attention through study are the environment (physical location, facilities, time), presentation style, learner expectations of the experience, expectations of the learner (homework, evaluations, accountability), and connection to overall church body and corporate worship and/or fellowship. In the current study, the physical layout of one sample site had a significant impact on the interaction of the Group 2 participants during the small group activities. In a similar size church with a different environment, the interaction and ultimate response to the study was significantly more positive.

A small group can be defined by size rather than the type of interaction that takes place. Lecture can be the primary means of instruction even in a small group environment. Studying the impact of lecture, discussion, and other activities on the effectiveness of the small groups for spiritual development would be useful for the church in order to better understand how to use the small groups effectively.

Adults enter into learning opportunities for different reasons and often without the level of commitment that is anticipated. By studying the learner's expectations when he/she begins participating in a small group and periodically reviewing those expectations, churches should be able to identify key expectations to manage or opportunities to provide introductory material to the learner to ease transition. Adult learners also respond differently from child learners when confronted with expectations regarding their participation. Children are frequently evaluated as part of their formal education while most adults have left that world behind and are no longer comfortable

with the ideas of homework and tests. Studying the most effective means of evaluation and the adult learners' response to a range of expectations would also provide churches with good information to include in their small group practice.

In most cases, small groups will be a part of a larger congregation. Church plants often start as small groups meeting in the homes of members and cell churches are intended to maintain the small, intimate atmosphere rather than gathering with the larger community of faith on a weekly basis. Studying these configurations to compare with the more common practice of small groups would give churches good information for comparison. The larger research effort should be to consider the relationship of the small group with the larger congregation and its interaction and participation in corporate worship and fellowship opportunities. The body of believers is an important theological concept for the church. A study of small groups should include the participants' feelings of community in the small group and in the larger congregation. In spiritual formation, corporate disciplines are as necessary as the personal disciplines. Relationships are key to feeling a part of the church body. Some of the relationships will come from the small group, but others should develop in the larger congregation.

Small groups are complex phenomena within the church and could easily yield numerous studies. With regard to the current study, the keys are the relationship of learning to interactions within the group and the relationships between the teacher and learners and/or among the learners within the small group.

Distance Learning

Finally, as more educational options are becoming available in the distance learning arena using online technologies, the impact and effectiveness of small group

projects and experiences used in these courses should be an area of research that provides immediate impact. If students are required to work together without having direct contact, how is their ZPD effected? Are group projects effective in a purely online course? Should small group activities be reserved for classroom or hybrid distance learning situations? In answering these questions, practitioners of online learning may find other methods more effective than those being used currently.

The relationship between the teacher and learners is also a key consideration in the distance learning arena. Vygotsky believed that the relationship between the teacher and learner was critical in the development process. Whether formal or informal learning, on-line educators must still find ways to create relationships with the learners. Research regarding the best methods for creating teacher-learner and learner-learner relationships in the on-line environment should be the starting point. In order to teach to the ZPD, the teacher must know the learner well enough to identify the ZPD. What information does the teacher need before the course begins? What kinds of interaction during the course are most effective? What types of group projects and interactions promote discussion for scaffolding among the learners or between the teacher and learners? For Christian colleges and universities, how is a biblical worldview maintained through the on-line medium? Can spiritual formation take place through asynchronous communication? These questions and more should become research in the near future in order to support the growth in distance learning at both Christian and secular institutions of higher education.

Adult learners are much the same as younger learners in many ways, but also have unique challenges and opportunities to guide their own learning. As educators of

adults, making use of all the tools available gives the learner the best opportunity to succeed and thus be encouraged to continue learning. Even in the specific educational setting of a church, adult learners should be given every opportunity to learn and grow in their knowledge and understanding. It is the teachers who will open those doors and invite the learners to come along on the journey.

APPENDIX 1

LESSON PLAN

Contained on the following pages are the lesson plan for Nahum which was used as the basis for creating the video lesson presented at each of the sample sites and the posttest and a short introduction to the video lesson for use just prior to the video presentation.

1. Nahum lesson plan
2. Presentation instructions

Lesson Plan: Nahum

1. Introduction and Hook (2 minutes)

When considering conquest and cruelty on a national scale, there are unfortunately a number of candidates, even in just the last 100 years. Perhaps the regime that comes to mind first is that of Adolf Hitler and Nazi Germany. Perhaps there are even people here today who heard the news reports first hand. There came a point when the other nations of the world could no longer stand by and allow the Nazis to continue their conquering rampage any further without stepping in.

The prophecy of Nahum is God's call to arms against a nation that was at least comparable in its lust for power, plunder and cruelty as the Nazis. Assyria had had its day; it had conquered much of the known world, including laying waste to much of the Promised Land. Through Nahum, God puts Ninevah and all of Assyria on notice that their time has come.

2. Book (12 minutes)

Go ahead and turn in your Bibles to the book of Nahum.

a. Background

- i. Ninevah had survived for a number of years by heeding Jonah's warning and repenting of her evil ways for a period of time.
- ii. Assyria was known for its cruelty in conquest. Their armies had conquered and devastated the northern kingdom of Israel and nearly conquered Judah and Jerusalem before God supernaturally destroyed Sennacherib's army that had laid siege against the city (Phillips, 184-185). Ninevah was the capital of the Assyrian empire.
- iii. Nahum's prophecy, delivered prior to the destruction of Jerusalem and the Exile, is divided into 3 chapters.

b. Chapter 1: Ninevah's Judge

- i. The prophet Nahum's name means "comfort" (Miller, 7; Bruckner, 134) which fits his delivery of this prophecy to the people of Judah who had suffered at the hands of the Assyrians.
- ii. In 1:1, the subject of the prophecy is revealed as Ninevah and the method of delivery to the prophet was through a vision.
- iii. Verses 2-6 give insight into God's character. God take vengeance against those who are his enemies (v. 2b) but He is patient or slow to anger. He will not let the guilty go unpunished (v.3). Verse 3 is telling the people of Judah that God has not forgotten what was done to them and when the time is right He will punish the evil ones.
- iv. In verses 7-15 God directs his attention to the object of His wrath and judgment while at the same time promising Judah that she will no longer be afflicted. *Follow along as I read verses 12-15 in chapter 1.* Notice that as the first chapter is coming to a close, God tells Ninevah that not only will she be destroyed but she will be

destroyed so completely that there will be no descendants to carry on. It was considered a tragedy not to have offspring to carry on the family name in ancient times, especially for Near Eastern royalty (Barker and Bailey, 188). As the word spreads (v 15), Judah really does have reason to celebrate.

c. Chapter 2: Ninevah's Judgment

- i. *Read Nahum 2:1-2.* In verse 1 Ninevah is warned to ready itself for an imminent attack. While in verse 2, Judah is given more reason to hope with the Lord's promise that He will restore the nation despite the current state of ruin.
- ii. Verses 3-12 describe what would take place in and around Ninevah. Ninevah's final destruction was carried out by the Medes and Babylonians (Miller, 34-35). The Mede soldiers carried red shields and the chariot drivers carried long spears. In verse 5, a protective shield is mentioned. This shield would protect the invading armies' front lines from the defenders' arrows and falling objects (Miller, 35; Bruckner, 167; Barker and Bailey, 204). The river gates opened and flooded the city (verse 6). This may have been done by the invaders, traitors within or by raging flood waters because tributaries of the Tigris River ran through the city (Miller, 35).
- iii. Once the walls were breached, the invaders showed no more mercy than Assyria had ever shown to those it conquered. Realizing their impending exile, people fell to their knees, pale and trembling (verse 10b). All the silver, gold, and unimaginable wealth that Assyria had plundered from the nations it had conquered was now plunder for the nations conquering Assyria (verse 9).
- iv. *Read 2:11-12.* Assyria described itself as a lion with Ninevah as its lair. In verses 11 and 12, Nahum mocks the fate of the Assyrian lion when its lair is destroyed and ultimately the lion itself (Barker and Bailey, 213).
- v. The final verse of chapter 2, verse 13, makes Ninevah's fate personal. *Read 2:13.* As just read, God is identified with the personal pronoun "I" indicating His personal involvement in Ninevah and Assyria's downfall (Miller 36-37). When He was finished, Ninevah would be no more.

d. Chapter 3: Ninevah's Total Destruction

- i. Chapter 3 opens with a continuing description of Ninevah's destruction. The imagery is brutal and vivid, sounds being evoked in the very words that are used and the short sentences (Miller, 37) with which verses 1-3 are constructed.
- ii. Verse 4 identifies the ultimate cause of Ninevah and Assyria's demise – their harlotry and sorcery, witchcraft and prostitution. All of these come back to the idolatry of the nation (Bruckner, 183-184).

- iii. *Read 3:5-7.* Not only will Ninevah be destroyed, but it will also be humiliated before all the other nations (Barker and Bailey, 226) such that no nation will mourn for or comfort Assyria (Barker and Bailey, 228). Assyria was considered invincible but like Thebes, a well protected city in the heart of Egypt which had held that distinction until destroyed by Assyria in 663 B.C. (verses 8-10), Ninevah will fall.
- iv. Verses 11-13 provide further description of the depths to which Ninevah would fall. *Read 3:11-13.* Ninevah's fortresses would be devastated like ripe figs falling easily from the tree. Ninevah's world-renowned soldiers would be reduced to the weakness of women, unable to stand against the overwhelming forces coming against them. The gates of the city would be so weak that it would seem as if they were not even closed.
- v. In the final 5 verses Nahum summarizes all that has been said previously mocking the nation to be destroyed. In verses 14-15, Nahum sarcastically encourages the people of Ninevah to continue preparations for the siege knowing they are responding too late to the need for protection. The enemy of Ninevah would come in like grasshoppers, consuming everything in their path. Verse 16 turns the metaphor of grasshoppers and locusts on the Ninevites themselves indicating that the scorched earth practices of their merchants and soldiers would continue until they practiced on the remnants of their own kingdom (Bruckner, 187). *Read 3:18-19.* These verses sum up the entire prophecy. Speaking to the Assyrian king, Nahum tells of a nation scattered or dead while others celebrate their demise and it is all because there is no one "who has not felt your endless cruelty" (3:19b).

3. Conclusion: Look & Took (2 minutes)

The lessons to be taken from Nahum's prophecy of Ninevah's destruction are:

- i. "The Lord is patient, giving individuals and nations ample opportunity to repent and be spared" (Miller, 16). God promised not to destroy Ninevah if the people repented in response to Jonah's message and He kept that promise. Ninevah turned away from God again and lost the option for repentance. It is important to respond to God's call for repentance when the opportunity is given.
- ii. "Because the Lord is just, he cannot allow the guilty to go unpunished" (Miller, 42). At the same time, God does not need help from his people to exact his vengeance. He is all-powerful and fully able to avenge the oppression of his people.

Lesson Presentation Introduction

Good morning. Today you will have a special Bible presentation as part of your Sunday school lesson. The lesson you are about to see is given by Wayne Eads, a pastor in Louisville, Kentucky. Please enjoy.

APPENDIX 2

INSTRUMENTATION

Contained on the following pages are the instruments to be administered at each sample site and the instructions for each instrument. General posttest instructions were used for Sites 1 and 2 with multiple Sunday school sessions. Group specific posttest instructions were provided to the coordinators for use at Sample Sites 3 and 4 with single Sunday school sessions. All participants will complete both of the tests, however only selected persons from each group will be asked the questions found on the Follow-Up Interview Guide. The answer key for the tests is also included in this appendix.

1. Pretest – Instructions
2. Pretest – Bible Knowledge Test
3. Posttest – Instructions (General)
4. Posttest – Instructions (Group 1)
5. Posttest – Instructions (Group 2)
6. Posttest – Nahum
7. Follow-Up Questionnaire
8. Test Answer Key

Pretest Administration Instructions

This morning we will be taking a short test of our Bible knowledge. Once I have read these instructions the test will be distributed. We will all begin at the same time and will have ten (10) minutes to complete the test. At the end of ten minutes I will call time and we will collect the tests. Once all tests have been collected, I will go over the answers to the questions so you will have an idea of how you did.

Some of your tests will be used as part of a research study that is described at the top of the test page. Please be sure to complete the information that is requested and **DO NOT** put your name on your paper. Birthdates must be complete with year as these will be used in the data analysis.

The tests will now be distributed.

Quiz 1 – Bible Knowledge Test

Agreement to Participate

The research in which you are about to participate is designed to test the amount of learning taking place among adults in Sunday school. This research is being conducted by Lorrie Francis for purposes of dissertation research. In this research you will provide your birth date, gender, and education level as well as answering questions concerning basic Bible knowledge. Any information you provide will be held *strictly confidential* and at no time will your name be reported, or your name identified with your responses. *Participation in this study is totally voluntary and you are free to withdraw from the study at any time.*

By your completion of this quiz, you are giving informed consent for the use of your responses in this research.

Demographic Section

Please fill in the information requested in the table for birth date and gender.

Birth Date				Gender	
Month	Day	Year		Male	Female

Education Level: Please indicate the highest level of formal education completed by circling one (1) response

Some High School	High School Diploma/GED	Some College
College Degree/ Trade School	Some Graduate School/ Masters Degree	Post Graduate Work/ Post Graduate Degree

Quiz Questions

This quiz has been given to incoming freshmen at Wheaton College by Professor Gary Burge for a number of years (Black 2005). Please follow the instructions for each question by circling the correct answer or putting the items in order in the spaces provided.

- | | |
|---|--|
| <p>1 Which one of these books is not in the Bible?
 a. Isaiah b. Jude
 c. Hezekiah d. Amos
 e. Song of Solomon</p> <p>2 Who was Israel's first king?
 a. Saul b. Solomon
 c. David d. Samuel
 e. Moses</p> <p>3 Sarah and Abraham had a son in their old age and named him "laughter." What was his real name?
 a. Samuel b. Moses
 c. Isaac d. Jacob
 e. Ishmael</p> | <p>4 Which of the following is not an Old Testament prophet?
 a. Elisha b. Elijah
 c. Aaron d. Isaiah
 e. Joel</p> <p>5. Place these events in their biblical order:
 a. giving of the law at Mt Sinai
 b. Creation c. the Fall
 d. the Exodus led by Moses
 e. the flood of Noah</p> <p>1. ____ 2. ____ 3. ____ 4. ____ 5. ____</p> <p>6 Place the following characters in their biblical order:
 a. Moses b. Adam
 c. David d. Solomon
 e. Abraham</p> <p>1. ____ 2. ____ 3. ____ 4. ____ 5. ____</p> |
|---|--|

Figure A1. Bible knowledge test

7. Which of the following books is from the New Testament?
 a. Judges b. Malachi
 c. Deuteronomy
 d. Hebrews e. Isaiah
8. Who wrote Philemon?
 a. Philemon b. Paul
 c. Peter d. Onesimus
 e. John
9. Which one of the following was among Jesus' 12 apostles?
 a. Paul b. Matthew
 c. Luke d. Timothy
 e. Silas
10. Whom did Pontius Pilate release during Jesus' trial?
 a. Barnabas b. Peter
 c. Silas d. Barabbas
 e. Paul
11. How many temptations did Jesus face in the wilderness?
 a. one b. two
 c. three d. four
 e. five
12. Place the following events in their biblical order:
 a. The Holy Spirit descends on Pentecost
 b. John has a vision on Patmos
 c. Jesus is baptized in the Jordan River
 d. Paul, Barnabas and Mark are sent out on a mission by the church
 e. Peter denies that he knows Jesus
- 1 ____ 2 ____ 3 ____ 4 ____ 5 ____
13. Place the following events in their biblical order:
 a. Paul's arrest in Jerusalem
 b. Mary's song
 c. Nicodemus' conversation about rebirth
 d. Peter's denial of Jesus
1. ____ 2 ____ 3 ____ 4 ____
14. Where would you find the Ten Commandments?
 a. Isaiah b. Exodus
 c. Genesis d. Numbers
 e. Matthew
15. Where would you find the first Passover?
 a. Genesis b. Numbers
 c. 1 Samuel d. Exodus
 e. 2 Kings
16. Where would you find "Create in me a clean heart, O God"?
 a. Proverbs b. Ezekiel
 c. Psalms d. Deuteronomy
 e. Luke
17. Where would you find the Lord's Prayer?
 a. Matthew b. Acts
 c. Ephesians d. Malachi
 e. Isaiah
18. Where would you find "in the beginning was the Word"?
 a. Acts b. Isaiah
 c. John d. Leviticus
 e. Romans
19. Elizabeth and Zechariah were the parents of:
 a. Jesus b. Samuel
 c. Paul d. Timothy
 e. John the Baptist
20. Jesus was crucified during:
 a. Passover b. Hannukah
 c. Tabernacles d. Sabbath
 e. Purim

Figure A1 – Continued. Bible knowledge test

Posttest Administration Instructions (General)

This morning we will be taking a short test over last week's lesson. Once I have read these instructions the test will be distributed. We will all begin at the same time and will have ten (10) minutes to complete the test. At the end of ten minutes I will call time and we will collect the tests. Once all tests have been collected, I will go over the answers to the questions so you will have an idea of how you did.

Some of your tests will be used as part of a research study that is described at the top of the test page. Please be sure to complete the information that is requested and **DO NOT** put your name on your paper. Birthdates must be complete with year as these will be used in the data analysis.

The tests will now be distributed.

Posttest Administration Instructions (Group 1)

Dear Teacher,

Thank you again for your participation in and assistance with my doctoral research. Please use the instructions below for the post-test administration. At the end of the test, place all forms – completed and blank into the provided envelope and send them with the designated class representative to Room ____ for a short interview. A copy of the answer key has been provided in a sealed envelope. You are welcome to share the answers to this morning's test with the class, after all test papers have been collected.

Lorrie

Thank you for being here this morning. Lorrie Francis whom you met last Sunday will be using the results of this morning's activity in her research.

This morning we will be taking a short test over last week's lesson concerning Nahum. Once I have read these instructions the test will be distributed. We will all begin at the same time and will have up to fifteen (15) minutes to complete the test. At the end of fifteen minutes I will call time and we will collect the tests. Once all tests have been collected, I will go over the answers to the questions so you will have an idea of how you did.

Some of your tests will be used as part of a research study that is described at the top of the test page. Please be sure to complete the information that is requested at the top of the page: birthdate, gender, and education. **DO NOT** put your name on your paper. Birthdates must be complete with year as these will be used in the data analysis. Everyone should circle "Group 1" below the education selection.

This is a closed book test. Do not use your Bible or activity sheet while working on the test. Feel free to guess if you do not know the answer for sure. Use good test taking technique by eliminating responses then choosing the one that best fits the question from those remaining.

The tests will now be distributed.

Posttest Administration Instructions (Group 2)

Dear Teacher,

Thank you again for your participation in and assistance with my doctoral research. Please use the instructions below for the post-test administration. At the end of the test, place all forms – completed and blank into the provided envelope and send them with the designated class representative to Room _____ for a short interview. A copy of the answer key has been provided in a sealed envelope. You are welcome to share the answers to this morning's test with the class, after all test papers have been collected.

Lorrie

Thank you for being here this morning. Lorrie Francis whom you met last Sunday will be using the results of this morning's activity in her research.

This morning we will be taking a short test over last week's lesson concerning Nahum. Once I have read these instructions the test will be distributed. We will all begin at the same time and will have up to fifteen (15) minutes to complete the test. At the end of fifteen minutes I will call time and we will collect the tests. Once all tests have been collected, I will go over the answers to the questions so you will have an idea of how you did.

Some of your tests will be used as part of a research study that is described at the top of the test page. Please be sure to complete the information that is requested at the top of the page: birthdate, gender, and education. DO NOT put your name on your paper. Birthdates must be complete with year as these will be used in the data analysis. Everyone who was in Sunday School last week should circle "Group 2" below the education selection. All others should circle "Group 1".

This is a closed book test. Do not use your Bible or activity sheet while working on the test. Feel free to guess if you do not know the answer for sure. Use good test taking technique by eliminating responses then choosing the one that best fits the question from those remaining.

The tests will now be distributed.

Quiz 2 - Nahum

Agreement to Participate

The research in which you are about to participate is designed to test the amount of learning taking place among adults in Sunday school. This research is being conducted by Lorrie Francis for purposes of dissertation research. In this research you will provide your birth date, gender, and education level as well as answering questions based on the video lesson you viewed last week. Any information you provide will be held *strictly confidential* and at no time will your name be reported, or your name identified with your responses. *Participation in this study is totally voluntary and you are free to withdraw from the study at any time.*

By your completion of this quiz, you are giving informed consent for the use of your responses in this research.

Demographic Section

Please fill in the information requested in the table for birth date and gender.

Birth Date			Gender	
Month	Day	Year	Male	Female

Education Level: Please indicate the highest level of formal education completed by circling one (1) response

Some High School	High School Diploma/GED	Some College
College Degree/ Trade School	Some Graduate School/ Masters Degree	Post Graduate Work/ Post Graduate Degree

Group Assignment (Circle One): Group 1 Group 2

Quiz Questions

Read each question carefully and circle the most appropriate answer

1. Nahum's name is best translated as:
 - a. Defender
 - b. Comfort
 - c. Conquer
 - d. Prophet
2. What was the name of the prophet previously sent to Nineveh?
 - a. George
 - b. Isaiah
 - c. Jonah
 - d. Micah
3. Nineveh was the capital of which ancient empire?
 - a. Assyria
 - b. Babylon
 - c. Chaldes
 - d. Danes
4. In the introduction, who were the people of Nineveh compared to?
 - a. Stalinist Russia
 - b. Churchill's England
 - c. Peron's Argentina
 - d. Nazi Germany
5. Nineveh was a very poor city
 - a. True
 - b. False
6. Nineveh's soldiers were known for their cruelty
 - a. True
 - b. False
7. What Egyptian stronghold that was considered invincible was destroyed by the soldiers of Nineveh?
 - a. Suez
 - b. Thebes
 - c. Cairo
 - d. Karnak
8. Nineveh was described as a lion's lair
 - a. True
 - b. False
9. Tributaries of what river ran through the city of Nineveh:
 - a. Pishon
 - b. Euphrates
 - c. Tigris
 - d. Gihon
10. Nineveh's fortresses were compared to ripe figs in their destruction
 - a. True
 - b. False

Figure A2. Posttest - Nahum

11. What insect metaphor was used in Nahum's prophecy?
 a. Locust
 b. Lady Bugs
 c. Flies
 d. Beetles
12. The color of the invading army's shields was black.
 a. True b. False
13. In defeat, the warriors of Nineveh were compared to weak women.
 a. True b. False
14. What nations eventually destroyed Nineveh?
 a. Babylon and Mede
 b. Egypt and Edom
 c. Babylon and Egypt
 d. Mede and Edom
15. What was the name of the Assyrian general who was supernaturally defeated by God before he could destroy Jerusalem?
 a. Alexander
 b. Nebuchadnezzar
 c. Caesar
 d. Sennacherib
16. Verse 3:5 says, "I will lift your skirts over your face. I will show the nations your nakedness..."
 Which response best summarizes the meaning of the verse?
 a. Despair
 b. Joy
 c. Lust
 d. Shame
17. Nahum's prophecy is divided into 5 chapters
 a. True b. False
18. Nahum prophesied before the Exile
 a. True b. False
19. What was the message for Nineveh in Nahum's prophecy?
 a. Eat, drink and be merry
 b. You had your chance, now you must pay
 c. A monster is coming to eat your children
 d. Stock up and survive
20. Verse 2:13 reads, "I will burn up your chariots in smoke, and the sword will devour your young lions..."
 What does the use of "I" mean in this verse?
 a. Nahum will lead the invaders.
 b. God will be personally involved in the destruction.
 c. God will send lightning to burn the chariots.
 d. Nahum will shoot flaming arrows.
21. In 1:3, God is described as being "slow to anger."
 Which response best explains that phrase?
 a. God is love
 b. God is kind
 c. God is patient
 d. God is meek
22. What was the message for Judah in Nahum's prophecy?
 a. Judah must repent or be destroyed like Nineveh
 b. Judah can seek vengeance against Nineveh.
 c. Judah's affliction is coming to an end.
 d. Judah should stock up in preparation of an invasion.

Questions 23-25

As a teen you are teased incessantly by another teen. The teasing led to embarrassing encounters such as spilled food, wet clothing, and un-removable stains on favorite items of clothing. Some encounters were not only embarrassing but led to punishment. The bully was never caught or confronted because the authorities were afraid and you chose to suffer in silence.

During college you have another encounter with the bully. Since you have been participating in evangelism training, you attempt to share the gospel. The bully scoffs and moves on.

Circle the letter associated with the principle that best applies to each of the continuations of the above story from the options below

- a. God gives ample opportunity for people and nations to repent
 b. It is important to respond to God's call for repentance when the opportunity is given
 c. God does not need help from His people to exact his vengeance.

23. Thirty minutes after storming off, the bully is hit by a bus while jaywalking across a busy street

- a. b. c.

24. Ten years later you meet the bully again. The bully has been to prison, become a Christian and now runs a halfway house ministry

- a. b. c.

25. After college you take the job that is available. Six months later the bully becomes your supervisor and continues tormenting you for the next 15 years until he dies of a massive heart attack at age 41.

- a. b. c.

Figure A2 – Continued. Posttest - Nahum

Follow-Up Interview Questions

1. Did you spend time during the week reviewing the material presented in the Nahum lesson's video presentation or the additional activities? If so, how much time?
2. Which if any of the additional activities do you feel contributed most to your learning of the Nahum lesson? Which contributed least to your learning of the Nahum lesson?
3. Which if any of the activities do you feel prepared you most for the Nahum lesson test? Which activities do you feel prepared you least for the Nahum lesson test?
4. Please give an overall assessment of your experience with the additional learning activities
5. Please describe your impression of the value of the type of learning experience you participated in.

Test Answer Key

	Pretest Bible Knowledge	Posttest Nahum
1	C	B
2	A	C
3	C	A
4	C	D
5	B,C,E,D,A	F
6	B,E,A,C,D	T
7	D	B
8	B	T
9	B	C
10	D	T
11	C	A
12	C,E,A,D,B	F
13	B,C,D,A	T
14	B	A
15	D	D
16	C	D
17	A	F
18	C	T
19	E	B
20	A	B
21		C
22		C
23		B
24		A
25		C

APPENDIX 3

AFTER LESSON ACTIVITIES

This appendix contains the description and instructions for the after lesson activities to be used with the test group in order to apply the concept of the ZPD. The handout for the groups is also included.

1. After Lesson Handout General Instructions
2. After Lesson Handout
3. After Lesson Handout Instructions for Test Group

AFTER LESSON HANDOUT GENERAL INSTRUCTIONS

Read these instructions to the entire group after After Lesson Handout has been distributed.

Each of you should have a handout entitled “After Lesson Handout”. Here are the instructions. *Read paragraph below.* Notice the next line says “I am in Group 1 or Group 2”. *Designate who is in Group 1 and Group 2.* Please circle your group number so that you don’t forget which group you are in. With that, Group 1 may be dismissed to your regular classrooms.

AFTER LESSON HANDOUT

Please complete the following four activities prior to returning next Sunday. Do not discuss your answers with anyone else. There will be opportunity next week to discuss and compare your results.

I am in: Group 1 Group 2

Activity 1: Acrostics

Create acrostics using the letters of NAHUM or NINEVAH or both as the first letters of words to create descriptions of the lesson.

Sample Acrostic:

God’s
Riches
At
Christ’s
Expense

Activity 2: Summarize Prophecy

Based on the video presentation, summarize Nahum’s prophecy in 1-2 statements.

Activity 3: Retelling of Prophecy

Based on the video presentation, try to identify the key points of the prophecy and the re-write the prophecy in your own words.

Activity 4: Implications and Applications

Identify as many implications and applications of Nahum’s prophecy as possible within 5 minutes.

AFTER LESSON HANDOUT

Please complete the following four activities prior to returning next Sunday. Do not discuss your answers with anyone else. There will be opportunity next week to discuss and compare your results.

I am in: Group 1 Group 2

Activity 1: Acrostics

Create acrostics using the letters of NAHUM or NINEVAH or both as the first letters of words to create descriptions of the lesson.

Sample Acrostic:

God's
Riches
At
Christ's
Expense

Activity 2: Summarize Prophecy

Based on the video presentation, summarize Nahum's prophecy in 1-2 statements.

Activity 3: Retelling of Prophecy

Based on the video presentation, try to identify the key points of the prophecy and the re-write the prophecy in your own words.

Activity 4: Implications and Applications

Identify as many implications and applications of Nahum's prophecy as possible within 5 minutes.

After Lesson Handout Instructions for Test Group

The following activities will be used during the small group teaching time for the test group following the presentation of the Nahum lesson.

Based on an estimated 20-25 minutes available for this portion of the Sunday school hour, a short set of introductory instructions will be provided, the group divided into groups of 2-4 and provided with a handout and verbal instructions for the first activity. Every 5 minutes, the groups will be provided with instructions for the next activity. After the 4 rotations are completed, any remaining time will be used to share the results of the activities, particularly activities 1 and 4.

Introductory Instructions:

Welcome to the continuation of the lesson you just watched about Nahum and his prophecy concerning Ninevah. For the next 20 minutes you will be divided into small groups and work through a series of exercises designed to aid in your learning of the material presented. You are welcome to use your Bibles for these activities.

Please count off numbers 1 through __ (*determined by size of group*). Go ahead and get into your groups. *Pause for groups to form.* The activities we will be working through are on the handout you received before the other group left. You will have 5 minutes to work on the first activity. At the end of 5 minutes you will be directed to work on the next activity for the next 5 minutes, and so on. Do not worry about finishing in the timeframe provided. There are no right or wrong answers to these activities. After the four activities have been completed, any remaining time will be used to share your responses.

Activity 1: Acrostics

Participant Instructions: Create acrostics using the letters of NAHUM or NINEVAH or both as the first letters of words to create descriptions of the lesson.

Researcher Notes: After providing participants with instructions above, be prepared to provide examples of acrostics and 1 or 2 suggestions to participants.

Sample Acrostic:

God's
Riches
At
Christ's
Expense

Suggestions for NAHUM/NINEVAH: Ninevah and
Assyria
Hammered
Until no
More

Activity 2: Summarize Prophecy

Participant Instructions: Based on the video presentation, summarize Nahum’s prophecy in 1-2 statements. Allow each member of the group to share his or her summary with the group.

Researcher Notes: No special instructions for this activity

Activity 3: Retelling of Prophecy

Participant Instructions: Based on the video presentation, try to identify the key points of the prophecy and the re-tell the prophecy in your own words. Allow each member of the group to try re-telling the prophecy.

Researcher Notes: If groups seem to be struggling, suggest using the results of Activity 2 as a starting point and expand the summary.

Activity 4: Implications and Applications

Participant Instructions: In your groups, identify as many implications and applications of Nahum’s prophecy as possible within 5 minutes.

Researcher Notes: If needed, provide explanation of implication and application.

Implication: The relationship of the lesson to daily life in a general way.

Application: “Based on the relationship of the lesson to life in general, what should my response be?”

(Richards, Lawrence O., and Gary J. Bredfeldt. 1998. *Creative Bible teaching*. Chicago, IL: Moody Press.)

Ending Instructions

I hope you have a good week. Please DO NOT share your handouts with anyone this week. There will be opportunity to discuss your answers next week. Also, don’t forget to circle “Group 2” at the top of your handout if you have not done so. Have a good day.

APPENDIX 4
QUANTITATIVE DATA

This appendix contains the quantitative data, including raw test scores for each sample site. The sites are identified only by number. Scores are provided for both the pretest and posttest for all participants at each site.

Table A1. Sample site 1 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
38	8/25/66	45	1	2	1	97	80
34	8/31/39	72	2	2	1	94	69
22	2/15/72	40	2	2	1	60	52
21	1/7/69	43	2	2	1	89	76
20	11/22/65	46	2	1	1	71	58
18	2/21/65	47	2	2	1	56	52
17	10/10/76	35	2	2	1	66	56
9	8/29/77	34	1	2	1	87	68
8	7/20/73	38	1	2	1	91	83
7	6/8/61	50	2	1	1	38	56
5	6/2/59	52	2	2	1	100	84
4	2/23/47	65	1	3	1	97	75
37	9/21/46	65	2	2	2	79	68
35	5/3/36	75	2	3	2	100	80
32	4/13/42	69	2	1	2	88	80
31	12/18/41	70	1	2	2	63	76
29	11/17/37	74	1	2	2	89	64
28	2/20/40	72	1	2	2	94	91
15	4/11/77	34	2	2	2	83	72
3	4/16/36	75	2	2	2	88	80
2	3/22/23	88	2	2	2	48	63
1	10/17/45	66	2	2	2	76	80
36	7/2/40	71	2	2		53	
33	8/18/29	82	2	3		74	
30	3/15/45	66	1	3		97	
27	10/8/43	68	1	3		89	
26	4/16/62	49	1	2		69	
25	6/27/77	34	2	2		86	
24	9/22/59	52	1	2		94	
23	9/8/64	47	2	2		91	
19	6/28/67	44	2	2		34	
16	2/5/72	40	1	2		71	
14	5/18/51	60	2	2		94	
13	12/17/61	50	1	1		88	
12	11/2/71	40	1	2		86	
11	10/23/66	45	2	3		43	
10	7/11/77	34	2	2		71	
6	11/22/66	45	2	3		26	
						74	

Table A1 – Continued. Sample site 1 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
						17	
						14	
						52	

Table A2. Sample site 2 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
58	4/18/21	90	1	1	1	26	40
13	8/2/27	84	2	1	1	46	68
23	10/28/29	82	2	1	1	43	28
21	12/23/31	80	2	1	1	71	56
10	2/22/33	79	1	1	1	74	72
62	9/4/33	78	1	1	1	34	36
91	7/2/38	73	1	3	1	60	56
61	10/18/38	73	2	1	1	91	44
16	1/8/41	71	2	1	1	94	76
11	9/14/44	67	2	1	1	91	76
76	10/22/44	67	1	2	1	97	72
79	9/8/46	65	2	2	1	77	52
19	12/12/47	64	2	1	1	49	52
17	12/19/47	64	2	2	1	57	56
87	7/20/51	60	2	2	1	91	88
84	4/8/53	58	2	2	1	91	84
22	8/28/56	55	2	2	1	60	68
83	2/25/58	54	1	3	1	100	76
29	3/27/58	53	2	2	1	100	64
20	11/1/59	52	2	1	1	37	28
93	4/7/60	51	1	1	1	40	64
25	5/27/62	49	2	2	1	40	44
28	4/10/64	47	2	3	1	94	80
73	10/3/65	46	1	3	1	100	96
113	4/20/66	45	1	2	1	57	36
30	7/26/66	45	2	2	1	86	68
67	1/16/67	45	1	2	1	89	68
35	1/26/68	44	1	2	1	94	88
75	10/25/68	43	1	3	1	100	84
68	2/22/70	42	2	2	1	77	68
32	8/11/70	41	2	2	1	86	76
15	10/10/70	41	2	1	1	43	84
33	8/1/71	40	2	2	1	100	88
128	12/11/71	40	1	3	1	97	60
31	2/11/72	40	2	3	1	89	80
88	7/7/72	39	1	3	1	100	68
74	11/26/72	39	2	2	1	97	80
34	2/5/74	38	1	2	1	94	56
41	3/25/76	35	1	3	1	94	68
26	6/11/77	34	2	2	1	46	72
39	12/19/78	33	1	3	1	100	80

Table A2 – Continued. Sample site 2 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
85	9/20/79	32	2	1	1	34	64
86	3/17/80	31	2	2	1	60	76
125	8/20/82	29	1	2	1	63	52
109	11/10/84	27	1	2	1	89	52
38	4/28/79	32	2	3	1	91	52
55	10/13/32	79	1	3	2	97	80
65	12/10/41	70	1	3	2	97	92
57	4/20/42	69	2	2	2	86	72
60	4/8/44	67	1	3	2	71	84
59	9/25/46	65	2	2	2	100	92
90	12/1/46	65	2	3	2	66	80
1	7/10/47	64	1	3	2	74	72
63	9/6/52	59	1	1	2	69	44
112	3/25/58	53	1	1	2	83	76
2	10/13/58	53	2	2	2	69	96
94	8/17/73	38	1	2	2	80	80
104	3/19/75	36	1	3	2	91	76
105	8/27/75	36	2	2	2	97	56
92	11/13/77	34	1	2	2	97	84
36	2/11/82	30	2	2	2	51	52
110	10/2/82	29	1	3	2	74	64
107	11/13/82	29	1	3	2	100	88
40	7/20/83	28	2	3	2	57	52
99	3/21/84	27	1	2	2	66	80
49	4/7/84	27	1	2	2	77	72
108	9/15/84	27	2	3	2	49	80
127	9/30/84	27	2	3	2	60	68
48	7/25/85	26	1	2	2	86	80
121	2/1/86	26	1	2	2	86	76
46	3/12/86	26	2	2	2	91	68
126	7/16/86	25	1	2	2	71	68
116	9/21/86	25	1	2	2	83	80
119	12/1/87	24	1	2	2	89	64
122	2/13/88	24	2	2	2	91	76
118	7/30/88	23	1	2	2	74	56
47	7/2/89	22	2	2	2	74	80
117	8/29/89	22	2	2	2	74	60
120	3/15/90	21	2	2	2	83	64
3	5/23/31	80	2	1		37	
8	1/25/33	79	2	2		94	
89	3/28/34	77	2	1		57	

Table A2 – Continued. Sample site 2 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
12	8/28/37	74	2	1		34	
80	2/5/43	69	1	2		100	
56	4/13/45	66	2	3		43	
24	2/2/48	64	2	1		49	
18	9/20/49	62	2	2		94	
5	1/16/50	62	1	2		100	
78	9/6/50	61	1	2		97	
9	3/16/51	60	2	3		86	
14	2/10/53	59	1	3		100	
50	1/1/54	58	2	3		49	
77	6/24/55	56	2	2		100	
82	8/2/56	55	2	2		37	
27	10/25/56	55	1	2		89	
64	3/9/59	53	1	1		49	
114	9/30/62	49	2	2		40	
4	12/7/62	49	2	3		91	
111	1/5/63	49	1	3		94	
115	4/12/65	46	1	2		89	
72	10/10/66	45	1	2		60	
81	11/5/67	44	1	2		40	
71	1/8/69	43	2	3		89	
69	1/16/70	42	2	2		57	
98	10/17/70	41	2	2		77	
96	2/1/72	40	1	2		69	
66	6/13/72	39	1	2		97	
95	12/6/72	39	2	3		86	
70	1/28/73	39	2	2		80	
102	3/8/75	37	1	2		94	
103	8/1/75	36	2	3		91	
7	5/11/77	34	1	3		100	
101	2/26/78	34	2	2		57	
106	1/31/79	33	2	2		94	
97	2/5/79	33	1	3		100	
54	4/27/79	32	2	3		77	
45	9/12/79	32	1	2		100	
6	11/6/79	32	2	3		100	
42	8/23/80	31	1	3		94	
44	2/21/82	30	2	2		100	
37	2/14/84	28	2	2		71	
100	12/14/84	27	2	1		49	
52	1/21/86	26	2	2		77	

Table A2 – Continued. Sample site 2 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
53	12/16/86	25	1	3		100	
43	2/6/88	24	2	1		77	
51	2/5/89	23	2	2		60	
123	5/28/89	22	1	2		74	
124	7/17/89	22	2	2		51	
129	11/1/63	48	2	2		100	

Table A3. Sample site 3 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
67	7/3/69	42	1	3	1	100	84
69	10/5/65	46	2	2	1	69	80
96	9/29/92	19	2	2	1	77	80
97	11/5/91	20	1	2	1	89	76
98	5/15/88	23	1	2	1	100	76
102	1/29/54	58	1	3	1	80	76
104	5/29/52	59	1	3	1	43	24
107	5/15/56	55	2	1	1	54	80
108	8/4/53	58	1	2	1	97	92
110	7/23/52	59	2	2	1	80	64
111	2/1/52	60	2	2	1	63	76
87	1/11/67	45	2	2	2	60	68
88	6/27/67	44	1	1	2	51	68
91	9/28/73	38	2	2	2	89	76
92	7/23/67	44	1	2	2	89	88
120	8/2/53	58	1	1	2	97	100
121	11/27/47	64	2	2	2	80	80
122	5/9/47	64	1	2	2	89	92
123	8/5/57	54	2	1	2	97	100
124	3/8/78	34	1	2	2	97	100
125	6/12/50	61	2	1	2	97	92
126	1/10/49	63	1	2	2	91	52
127	7/4/51	60	2	2	2	94	80
128	2/2/44	68	1	3	2	94	92
129	10/26/44	67	1	2	2	94	100
1	12/19/88	23	2	2		89	
2	6/26/65	46	2	2		97	
3	12/19/96	15	1	1		43	
4	1/1/97	15				54	
5	6/16/98	13	1	1		51	
6	9/1/98	13	2	1		46	
7	10/1/98	13	2	1		46	
8	1/1/97	15				29	
9	1/1/97	15				46	
10	9/1/94	17	2	1		54	
11	1/1/97	15				49	
12	1/5/97	15	1			31	
13	2/26/95	17	1	1		71	
14	1/1/96	16	2	1		54	
15	11/29/93	18	1	1		100	
16	9/30/94	17	2	1		51	

Table A3 – Continued. Sample site 3 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
17	4/12/97	14	2			49	
18	1/30/92	20	1	1		46	
19	8/4/95	16	2	1		51	
20	4/17/94	17	2	1		46	
21	9/20/93	18	1			86	
22	9/3/92	19	1	1		97	
23	10/9/59	52	1	2		100	
24	2/3/98	14	1			51	
25	4/17/93	18	2	1		31	
26	6/15/86	25	1	2		100	
27	2/29/00	12				91	
28	7/11/34	77	2	2		94	
29	2/29/48	64				77	
30	1/2/40	72	1	1		100	
31	4/8/45	66	1	1		69	
32	3/6/54	58	2	2		63	
33	8/10/46	65	1	1		43	
34	7/7/47	64	2	1		43	
35	8/4/41	70	2	2		91	
36	4/4/37	74	1	3		86	
37	2/11/34	78	2	2		74	
38	3/29/48	63	2	1		40	
39	12/26/46	65	1	2		77	
40	9/10/46	65	1			63	
41	5/8/44	67	2	2		49	
42	7/5/32	79	1	2		100	
43	9/14/47	64	2	2		97	
44	2/29/00	12		1		86	
45	6/7/39	72	1	2		83	
46	12/27/60	51	2	2		91	
47	5/22/34	77	1	3		97	
48	3/9/46	66	2	3		91	
49	6/5/55	56	2	3		100	
50	2/12/34	78	2	1		89	
51	9/28/47	64	2	2		94	
52	3/16/36	75	2	1		40	
53	6/3/36	75	2	1		46	
54	5/10/34	77	2	1		71	
55	6/20/36	75	1	2		71	
56	4/18/67	44	2	2		66	
57	2/29/00	12				43	

Table A3 – Continued. Sample site 3 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
58	11/11/35	76	2	3		89	
59	8/8/32	79	2	1		29	
60	10/5/34	77	2	1		63	
61	7/26/44	67	2	3		89	
62	8/31/36	75	2	2		91	
63	9/26/36	75	2	2		34	
64	6/3/44	67	2	2		43	
65	6/24/36	75	2	1		94	
66	9/26/00	11	2			80	
68	1/1/70	42	2	2		46	
70	4/27/44	67	1	1		34	
71	2/22/43	69	2	1		20	
72	9/29/46	65	2	2		97	
73	2/29/00	12				94	
74	7/16/40	71	2	2		97	
75	10/14/28	83	2			97	
76	4/9/33	78	2	1		97	
77	5/6/28	83	2			97	
78	6/18/66	45	1	2		54	
79	3/10/72	40	2	2		80	
80	12/1/69	42	2	3		80	
81	8/15/64	47	1	2		86	
82	6/18/66	45	1	2		49	
83	9/22/59	52	2	3		74	
84	6/6/63	48	1	2		54	
85	1/7/65	47	2	1		37	
86	4/17/70	41	2	2		97	
89	3/5/73	39	1	2		54	
90	6/8/75	36	2	2		54	
93	8/23/28	83	1	2		60	
94	8/4/43	68	1	2		80	
95	6/16/31	80	2	2		71	
99	1/1/62	50	1	3		69	
100	7/27/66	45	2	2		51	
101	2/29/00	12	2	2		37	
103	4/9/33	78	1	2		31	
105	10/19/26	85	2	1		63	
106	9/9/25	86	2			69	
109	11/18/48	63	2	2		100	
112	1/1/63	49	1	1		97	
113	6/10/58	53	1	2		97	

Table A3 – Continued. Sample site 3 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
114	4/3/22	89	1	1		74	
115	10/12/14	97	1	1		40	
116	6/15/26	85	1	2		60	
117	11/16/53	58	1	3		100	
118	11/30/43	68	1	2		54	
119	12/1/24	87	1	1		40	

Table A4. Sample site 4 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
36	8/28/77	34	2	2	1	74	68
156	10/10/74	37	2	3	1	85	60
120	11/24/73	38	2	3	1	86	72
35	11/23/71	40	1	3	1	100	80
118	4/15/70	41	2	2	1	60	56
114	2/18/69	43	2	3	1	77	80
45	7/18/68	43	2	2	1	40	56
134	1/24/64	48	2	2	1	60	64
41	9/23/59	52	2	2	1	74	44
76	12/2/55	56	2	3	1	89	56
74	1/30/55	57	1	2	1	71	44
86	4/7/54	57	2	2	1	100	92
68	10/14/53	58	1	3	1	86	56
83	11/5/51	60	1	1	1	40	52
69	6/9/50	61	1	3	1	100	64
117	8/4/49	62	2	2	1	66	60
91	9/26/48	63	2	3	1	94	36
17	7/24/46	65	2	3	1	91	76
152	1/5/44	68	2	1	1	17	52
82	8/18/43	68	2	2	1	65	40
28	6/28/43	68	2	2	1	89	64
55	5/4/42	69	2	1	1	57	44
95	8/29/41	70	2	2	1	74	40
129	10/1/35	76	1	3	1	97	88
130	10/25/33	78	1	2	1	86	56
160	1/4/33	79	1	1	1	91	84
56	3/15/31	80	2	1	1	40	32
63	12/19/30	81	2	1	1	69	60
128	2/7/30	82	1	3	1	91	88
123	12/27/29	82	1	1	1	63	52
54	1/12/29	83	2	1	1	57	36
57	7/17/26	85	2	1	1	63	32
1	5/28/89	22	2	2	2	77	56
132	7/12/84	27	2	2	2	66	80
137	12/19/77	34	1	2	2	100	84
140	10/22/77	34	2	2	2	80	80
141	6/19/68	43	2	2	2	89	92
51	11/6/66	45	1	1	2	54	44
48	1/30/62	50	1	2	2	71	64
47	7/12/61	50	1	1	2	43	48
53	3/29/61	50	1	2	2	100	64

Table A4 – Continued. Sample site 4 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
71	4/14/57	54	1	2	2	100	72
79	2/26/57	55	2	2	2	66	84
111	6/13/49	62	2	2	2	71	76
81	5/27/49	62	2	3	2	69	72
98	7/10/48	63	1	3	2	51	60
133	8/11/45	66	2	3	2	89	80
99	3/26/45	66	1	1	2	63	68
50	12/22/44	67	1	1	2	71	64
20	11/2/40	71	2	2	2	94	76
97	2/26/40	72	1	2	2	71	64
150	3/1/39	73	1	3	2	83	68
96	2/25/38	74	1	3	2	83	64
65	12/1/35	76	1	1	2	23	88
108	6/3/32	79	2	1	2	91	80
64	5/10/31	80	1	3	2	66	80
103	12/12/28	83	2	3	2	89	64
148	7/10/28	83	1	2	2	26	40
104	5/10/25	86	2	1	2	74	100
67	3/10/24	88	1	1	2	91	64
66	8/11/22	89	1	2	2	71	84
88	11/25/46	65	2	2		94	32
135	7/18/26	85	2	3		86	36
62	4/17/26	85	2	1		20	0
157	4/19/11	0	2	2		76	
143	1/1/11	1	2	3		57	
144	1/1/11	1	2	1		57	
146	1/1/11	1		1		29	
147	1/1/11	1	2	1		11	
149	1/1/11	1	1	1		57	
151	1/1/11	1	2	2		74	
154	1/1/11	1	2	2		26	
159	1/1/11	1	2	1		29	
30	2/2/91	21	2	2		71	
32	9/28/86	25	2	2		91	
33	5/31/82	29	1	2		66	
37	3/1/81	31	2	2		57	
31	2/12/81	31	1	1		89	
139	1/1/79	33	2	2		89	
138	10/25/78	33	2	3		72	
142	8/31/76	35	1	2		51	0
49	5/31/75	36	1	2		63	

Table A4 – Continued. Sample site 4 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
116	4/21/74	37	2	2		71	
52	1/22/73	39	1	2		69	
119	12/22/72	39	2	2		69	
121	6/24/71	40	2	2		63	
44	11/25/67	44	2	2		69	
131	12/2/66	45	2	2		57	
38	10/3/65	46	2	1		74	
43	4/2/63	48	2	2		86	
40	4/2/61	50	1	2		83	
75	12/28/57	54	2	1		63	
109	4/9/56	55	2	2		57	
39	1/1/56	56	1	2		69	
85	10/15/54	57	2	1		46	
73	8/23/54	57	2	1		94	
34	3/12/54	58	2	2		60	
46	7/9/53	58	1	2		57	
29	2/3/53	59	2	2		63	
90	2/2/53	59	2	2		86	
13	4/5/52	59	2	2		54	
80	3/12/51	61	1	2		74	
16	2/11/51	61	2	2		46	
24	1/14/51	61	2	2		46	
84	1/11/51	61	2	1		34	
100	8/15/49	62	1	2		74	
89	4/7/49	62	2	1		49	
93	6/23/47	64	2	1		40	
77	5/27/47	64	1	2		69	
11	7/31/46	65	1	2		91	
23	9/26/45	66	2	2		100	
3	11/19/44	67	1	1		46	
6	10/15/44	67	1	1		60	
19	12/1/43	68	2	2		63	
15	9/26/43	68	2	2		43	
153	9/25/43	68	1	2		20	
115	8/8/43	68	2	1		77	
72	11/7/42	69	1	2		83	
5	10/17/42	69	1	1		37	
70	4/15/42	69	2	1		77	
4	4/1/42	69	1	2		91	
7	9/24/41	70	1	3		60	
78	9/6/41	70	2	3		80	

Table A4 – Continued. Sample site 4 raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
14	8/4/41	70	2	1		51	
8	5/9/41	70	1	2		74	
18	3/17/41	70	2	1		20	
9	12/29/40	71	1	2		43	
125	8/9/40	71	1	2		83	
10	10/25/39	72	1	2		71	
87	8/25/39	72	2	2		94	
42	7/10/39	72	2	3		97	
126	11/14/38	73	1	2		71	
26	8/22/38	73	2	2		89	
21	1/19/38	74	2	2		74	
12	11/12/37	74	2	3		66	
122	7/7/37	74	1	3		97	
27	4/15/37	74	2	2		83	
94	10/30/36	75	2	1		57	
127	7/30/36	75	1	3		91	
145	6/16/36	75	1	3		37	
25	2/24/36	76	2	1		86	
60	1/21/36	76	2	2		26	
155	10/3/34	77		2		11	
158	11/1/33	78	1	2		14	
59	4/16/33	78	2	1		74	
61	2/16/33	79	2	1		46	
58	2/5/32	80	2	1		77	
22	8/15/31	80	2	2		91	
136	12/4/30	81	2	3		83	
106	2/17/30	82	2	1		80	
124	1/20/30	82	1	1		37	
105	1/18/30	82	2	2		100	
107	9/12/29	82	2	2		100	
112	3/19/27	84	2	1		71	
101	2/20/26	86	2	3		63	
110	10/2/24	87	2	2		77	
113	2/22/22	90	2	1		71	
102	8/15/16	95	2	2		31	
92	1/8/15	97	2	1		40	
2	1/5/11	101	2	1		57	

APPENDIX 5

QUALITATIVE DATA

This appendix contains summaries of the interview data for each sample site. The sites are identified only by number and participant responses are provided without identification of individuals.

Sample Site 1 Interview Summary

As a site with two Sunday school sessions, the interview at Sample Site 1 was conducted in two parts. For the first portion of the interview, all participants were part of the test group while in the second portion there were participants from both the test and control groups. This summary includes comments from both portions of the interview by question.

6. Did you spend time during the week reviewing the material presented in the Nahum lesson's video presentation or the additional activities? If so, how much time?

Participants indicated spending from thirty minutes to three hours in review of the material. Thirty to forty-five minutes was the most common review timeframe.

7. Which if any of the additional activities do you feel contributed most to your learning of the Nahum lesson? Which contributed least to your learning of the Nahum lesson?

Members of the Test Group indicated that some found the acrostic to be most helpful while others found it to be least helpful. Activity 4, Implications and Applications, was also mentioned as being very helpful in learning the lesson. Control Group participants found the acrostic to be least helpful.

8. Which if any of the activities do you feel prepared you most for the Nahum lesson test? Which activities do you feel prepared you least for the Nahum lesson test?

With regard to preparation for the posttest, the participants in the first portion of the interview did not find any of the activities particularly helpful. They agreed that re-reading the text and conducting personal study provided the best review. During the second portion, members of the Test Group reiterated the helpfulness of re-reading while members of the Control Group indicated Activities 2-4 provided the most assistance in preparing for the posttest.

9. Please give an overall assessment of your experience with the additional learning activities

The Control Group participants found the learning activities challenging to work on alone without input from anyone else. Test Group participants noted that the activities contributed to a desire to learn more and the small group interactions helped to pull all the information together while also aiding retention.

10. Please describe your impression of the value of the type of learning experience you participated in.

Regarding the experience, participants in general indicated challenges with the video presentation due to the lack of opportunities for interaction during the information presentation as well as the volume and speed of the data. Several suggestions were made to add visuals either before or as part of the video presentation to create interest while introducing the topic. At the same time, the suggestion that there might be a test enticed participants to study more on their own if inclined to do so.

The overall response from Sample Site 1 was positive regarding the small group interaction and activities. With a large number of senior adult learners, the video presentation was not the best means of conveying information. The video did not allow for pausing to reflect and discuss the material in process. Another suggestion was made to provide information for pre-study – focal passage, topic – so that those who are so inclined may prepare ahead of the class.

Sample Site 2 Interview Summary

As another site with two Sunday school sessions, the interview at Sample Site 2 was conducted in two parts. For the first portion of the interview, all participants were part of the control group while in the second portion the participants were from the test group. This summary includes comments from both portions of the interview by question.

1. Did you spend time during the week reviewing the material presented in the Nahum lesson's video presentation or the additional activities? If so, how much time?

Control group participants indicated spending from thirty to seventy-five minutes in review of the material. One seminary graduate indicated spending two to three hours however; this was not the overall consensus. Participants from the test group indicated no specific review during the week between the lesson and posttest.

2. Which if any of the additional activities do you feel contributed most to your learning of the Nahum lesson? Which contributed least to your learning of the Nahum lesson?

For the purposes of learning the material presented, the Control Group participants found Activity 3, Key Points, to be most helpful while Activities 1 (Acrostic) and 2 (Summary) were the least helpful. The comment was made that the acrostic was too much work and took too much time to be of benefit. In contrast, the Test Group participants were divided. Several members found all the activities to be helpful while approximately half of the interview participants found each of the activities less helpful. It was felt by some that Activity 3, Key Points, was too repetitive, reducing its helpfulness in learning the material.

3. Which if any of the activities do you feel prepared you most for the Nahum lesson test? Which activities do you feel prepared you least for the Nahum lesson test?

When considering the impact of the activities on preparation for the posttest, Control Group participants felt their personal reading combined with the video provided the most preparation while Activity 1, Acrostic, provided the least. The Test Group participants felt Activity 3, Key Points, was most helpful in preparing them for the posttest. Activities 1 and 4 were believed to be the least helpful.

4. Please give an overall assessment of your experience with the additional learning activities

For the Control Group, the accountability derived from the homework was the most meaningful aspect of the learning activities. Among the Test Group participants, some found the change in format from their normal Sunday school

experience to be jarring. The video was not found to be impressive but did allow for collecting of information during the small group time. Most found the small group activities to help solidify the information provided in the video and enjoyed the interaction.

5. Please describe your impression of the value of the type of learning experience you participated in.

Two suggestions were given by the Control Group participants. The first was to include activities for all learning styles (visual, auditory, kinesthetic) in order to maximize learning. The second was to provide more information as an introduction so that as adults, the learners would know why they were doing things differently. The Test Group participants felt that the group interaction they experienced was the key to their learning. It encouraged participation and the combination of activities helped to capture the interest of everyone. A lack of knowledge regarding the material was suggested as a possible deterrent to more vibrant discussion.

At Sample Site 2, the differences in experience between the Control Group and Test Group came through very clearly. The activities that the Control Group found least helpful were viewed as most helpful by a number of Test Group participants. The common theme from the Test Group was the value of the interaction during the small group time while a predominant theme for the Control Group was the need for more interaction to facilitate learning.

Sample Site 3 Interview Summary

Sample Site 3 had one Sunday school session. For the Follow-up Interview, participants took the posttest with their classes and then convened at a designated location for the interview. Participant comments are summarized below for each question.

1. Did you spend time during the week reviewing the material presented in the Nahum lesson's video presentation or the additional activities? If so, how much time?

Control Group participants indicated spending fifteen minutes to two hours reviewing the material while Test Group participants spent thirty to forty-five minutes in review.

2. Which if any of the additional activities do you feel contributed most to your learning of the Nahum lesson? Which contributed least to your learning of the Nahum lesson?

Members of both groups found Activity 1, Acrostic, to be least helpful. One participant commented that it was difficult to start and abandoned the effort without much progress. As the most helpful activities, Control Group participants found Activities 2 (Summary) and 3 (Key Points) to be similar but helpful. The Test Group Participants indicated Activity 4 (Implications and Applications) was the most helpful, particularly when supported by Activities 2 and 3.

3. Which if any of the activities do you feel prepared you most for the Nahum lesson test? Which activities do you feel prepared you least for the Nahum lesson test?

With regard to preparation for the posttest, the participants from the Control Group did not find any of the activities particularly helpful. Members of the Test Group found re-reading the text to be helpful in addition to Activities 2 and 3. Activity 1 (Acrostic) was viewed as least helpful in preparing for the posttest.

4. Please give an overall assessment of your experience with the additional learning activities

When asked this question, the Control Group participants focused on the video, responding that it was too focused on the figurative language in the text. The Test Group participants found Activities 2-4 to be helpful in building upon each other to solidify the information. They did feel that more specific questions would have been more helpful and generated more discussion. The activities did help to generate more interest in learning about Nahum in particular and the Minor Prophets overall.

5. Please describe your impression of the value of the type of learning experience you participated in.

The Control Group participants' responses again focused on the video when asked for an overall impression. They felt the video was not stimulating and they were being read to rather than taught. At the same time, the participants found the whole experience to have sparked curiosity in further study. For the Test Group participants, the environment detracted from the group dynamic. What discussion was accomplished was found to be helpful in learning the material and providing a good experience.

Sample Site 3 had a very challenging environment for the lesson presentation and particularly the small group activities. Presented in the worship center which has fixed pews, the small group interaction was effected by the inability to move around and form groups easily. This is reflected in the feedback received. The interactions that did take place had a positive impact on the learning and experience of the Test Group participants.

Sample Site 4 Interview Summary

Sample Site 4 also had one Sunday school session. For the Follow-up Interview, participants took the posttest in the interview location rather than with their classmates. Participant comments are summarized below for each question.

1. Did you spend time during the week reviewing the material presented in the Nahum lesson's video presentation or the additional activities? If so, how much time?

Control Group participants indicated spending up to an hour reviewing the material either Saturday night before the posttest or that morning. For the Test Group participants, the time spent reviewing was in the fifteen to twenty minute range, most on Sunday afternoon after the lesson presentation.

2. Which if any of the additional activities do you feel contributed most to your learning of the Nahum lesson? Which contributed least to your learning of the Nahum lesson?

The combined participants indicated Activity 1 (Acrostic) to be most helpful along with Activity 4 (Implications and Applications). The Test Group participants also found just talking together in small groups to be helpful to their learning. No response was given of activities that did not contribute to learning the lesson.

3. Which if any of the activities do you feel prepared you most for the Nahum lesson test? Which activities do you feel prepared you least for the Nahum lesson test?

In preparation for the posttest, the combined group found Activity 4 to be the most helpful in association with the video. No response was given for activities that provided the least preparation assistance.

4. Please give an overall assessment of your experience with the additional learning activities

The Test Group participants found the overall experience of the learning activities to be helpful, particularly because of the small group interaction. One participant commented that the activities and discussion helped to realize what had been forgotten. For the Control Group, the interview participants did not find the activities particularly helpful except as a way to focus review of Scripture.

5. Please describe your impression of the value of the type of learning experience you participated in.

As an overall experience, the Control Group participants felt the video provided some good memory triggers and the activities were useful for guiding personal

study but the benefits of interaction were clearly lacking. The Test Group participants felt they understood and learned more of the material through the group discussions. The small groups also helped them to feel more accountable for the material. Small groups can also present some challenges related to the physical environment (background noise, lack of writing surface, physical difficulties) but these are not insurmountable.

The overall response from Sample Site 4 was positive regarding the small group interaction and activities. Participants from the Test Group had a more positive view of the experience and the learning that took place. An overarching theme of the interview was the need to provide explanation to learners about the purpose for the change in normal procedure. Several from both groups felt they were “giving up Sunday school” without understanding why.

APPENDIX 6

PILOT STUDY DATA

This appendix contains the pilot study data and results used to test the experimental process for this study.

1. Pilot Study Results
2. Pilot Study Raw Data

Pilot Study Results

There were 24 participants who successfully completed both the pretest and posttest. Of these, sixteen were in Group 1 (Control) and eight were in Group 2 (Experimental).

For the pre-test, the mean score for Group 1 was 72.68 and for Group 2 it was 66.43. Using a Levene's test to see if the variances are equal, an insignificant result (.897) was found allowing the assumption that the variances are equal. The 2-tailed t-test yielded a significance of .590, also an insignificant result. Therefore, there is no statistical difference in the test scores between the two groups which supports the assumption that the difference in the level of Bible knowledge for the two groups is also insignificant.

In the posttest results, the mean for Group 1 was 62.0 and the mean for Group 2 was 68.38. Conducting the Levene test again showed the variances to be equal (.245) and the t-test result was insignificant at .355, indicating no statistical difference in the results between the two groups. However, with only 24 samples the standard deviation was much smaller on the posttest for both groups, especially Group 2. This may be a case in which the size of the sample was not large enough to show statistically what is taking place.

Finally, using Excel, the Cronbach's Alpha of the posttest was calculated for the pilot study participants. Using all the posttests taken, the Cronbach's Alpha was .71 which is not at the .8 level desired for the posttest but still indicates a significant level of reliability for the posttest.

Table A5. Pilot study raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
32	7/3/31	80	1	2	1	86	64
90	1/10/37	75	1	1	1	31	24
89	2/12/49	63	2	2	1	54	88
54	4/23/49	62	1	3	1	94	68
92	4/23/49	62	1	2	1	91	76
39	1/13/50	62	1	2	1	51	60
94	9/12/52	59	2	2	1	51	72
41	7/4/55	56	1	2	1	100	60
98	2/20/57	55	2	2	1	97	84
107	2/22/59	53	2	1	1	57	28
46	6/9/61	50	1	2	1	63	56
65	11/21/61	50	1	3	1	91	68
64	12/13/62	49	2	2	1	89	76
18	8/14/63	48	2	2	1	100	60
47	7/15/65	46	1	2	1	23	64
55	1/30/76	36	1	2	1	83	44
42	2/11/45	67	2	3	2	83	68
61	3/4/60	52	1	2	2	63	80
106	8/6/61	50	2	2	2	94	75
67	3/14/70	41	2	2	2	34	64
17	10/16/71	40	2	2	2	83	68
78	8/16/73	38	2	2	2	97	80
3	5/15/78	33	2	2	2	17	56
115	7/20/42	69	1	1	2	60	56
28	4/7/21	90	1	3		40	
10	10/31/23	88	2	1		57	
7	2/19/24	88	2	2		34	
6	4/5/28	83	2	1		66	
9	8/14/31	80	2	1		91	
27	8/4/34	77	1	1		80	
11	1/1/37	75	2	1		69	
8	2/2/39	73	2	2		54	
31	6/15/40	71	1	2		60	
12	10/19/42	69	2	1		29	
99	4/19/44	67	1	2		54	
91	11/24/45	66	1	3		34	
13	2/10/47	65	2	1		34	
5	7/13/47	64	2	2		83	
23	8/1/47	64	2	1		31	
29	8/15/47	64	1	2		97	
60	11/2/48	63	2	2		46	

Table A5 – Continued. Pilot study raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
75	4/4/49	62	2	3		83	
33	9/29/49	62	1	1		49	
95	10/2/49	62	1	2		51	
20	7/9/50	61	2	2		40	
22	8/7/50	61	2	2		83	
111	10/13/50	61	1	2		37	
21	3/19/52	59	2	1		100	
26	4/28/52	59	2	2		51	
97	12/29/52	59	2	2		77	
93	6/29/53	58	2	2		69	
100	1/1/55	57	2	1		57	
49	8/2/55	56	2	2		97	
45	10/13/55	56	2	2		69	
96	10/19/55	56	2	3		8	
30	1/23/56	56	2	1		94	
66	10/10/56	55	1	3		97	
16	3/31/57	54	2	2		71	
73	11/1/58	53	2	2		49	
40	7/18/59	52	2	2		57	
25	6/15/60	51	2	1		100	
62	9/8/60	51	1	2		71	
81	4/25/61	50	2	1		20	
108	4/9/62	49	2	2		74	
112	10/6/62	49	1	1		74	
110	3/23/63	48	1	2		100	
68	3/25/63	48	2	3		80	
70	8/17/63	48	2	2		63	
24	10/31/63	48	2	2		31	
104	6/28/64	47	1	2		74	
109	7/7/64	47	1	3		100	
34	3/24/65	46	1	2		94	
63	5/4/65	46	2	2		91	
113	6/19/65	46	2	1		57	
74	7/19/65	46	2	3		54	
114	12/22/65	46	1	2		86	
72	12/1/66	45	2	2		49	
71	6/13/67	44	2	1		77	
15	6/24/67	44	2	2		57	
19	7/28/67	44	2	2		80	
80	3/29/69	42	1	2		94	
57	5/26/69	42	1	1		49	

Table A5 – Continued. Pilot study raw data

Survey#	Birth Date	Age	Gender	Ed Level	Group	Quiz 1	Quiz 2
48	11/29/70	41	2	2		29	
105	2/5/71	41	1	2		54	
44	5/23/71	40	2	2		43	
77	4/26/72	39	1	2		66	
59	9/21/72	39	1	2		91	
101	8/14/73	38	1	3		46	
58	3/9/74	38	2	2		49	
43	12/11/74	37	1	2		63	
79	1/8/75	37	2	2		71	
56	6/21/75	36	2	2		60	
2	8/15/75	36	1	2		60	
102	9/21/75	36	2	1		31	
4	4/22/76	35	2	2		43	
1	7/30/76	35	2	2		86	
76	10/26/76	35	1	2		43	
103	7/19/77	34	1	2		43	
14	11/12/77	34	2	2		54	
69	2/12/79	33	1	3		69	
88	11/10/81	30	2	2		40	
86	3/3/82	30	1	3		94	
52	1/15/87	25	2	2		29	
38	6/7/87	24	1	2		100	
50	7/1/87	24	1	2		57	
51	7/1/87	24	1	2		37	
36	4/12/88	23	2	2		29	
35	9/23/88	23	2	2		60	
37	10/3/88	23	1	2		49	
87	8/1/89	22	1	2		86	
53	12/13/89	22	2	2		66	
82	2/8/90	22	1	2		63	
83	3/24/92	19	2	1		31	
85	5/22/92	19	2	1		34	
84	8/24/92	19	2	1		60	

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ABSTRACT

LEARNING THEORY IN ADULT DISCIPLESHIP: A QUASI-EXPERIMENT ASSESSING ADULT LEARNING IN A SUNDAY SCHOOL CONTEXT

Lorrie Elizabeth Francis, Ph.D.
The Southern Baptist Theological Seminary, 2011
Chair: Dr. Gary J. Bredfeldt

This study was concerned with the learning that takes place in the adult learning context of adult Sunday school classes in Southern Baptist churches. Using Lev Vygotsky's concept of the Zone of Proximal Development (ZPD), a test of learning was created and administered to adults from ages 18 to over 65 in four geographically and socio-economically diverse areas of the United States who attended Sunday school at a Southern Baptist church between January and May 2011.

Using descriptive and inferential statistics, the data gathered through the experimental protocol was analyzed to test for differences in the learning measured for control and test groups at each sample site. The results at two sample sites showed significantly higher posttest scores for the participants who took part in small group activities rather than attempting to learn alone. For the other sites, small sample sizes prevented significant results however, the data indicated that results were likely to match those of the other sites if sufficient sample data had been collected. Through multiple regression, the data was tested for a continuation of the relationship when age, gender, and education level were considered. Upon analysis it was found that only education

level had a significant impact on the learning that took place. Participants who were more highly educated scored higher than those at lower education levels on the posttest. The variation in sample site was found not to be a significant factor in the scores. The study shows that the ZPD is applicable for adults, at least in the learning context of Sunday school. Additional research should consider adult learning in the ZPD in other learning contexts as well as testing other learning theories for adult learners.

VITA

Lorrie Elizabeth Francis

PERSONAL

Born: May 5, 1969, Pontiac, Michigan
Parents: Roger and Linda Francis

EDUCATIONAL

Diploma, North Middlesex Regional High School, Townsend, Massachusetts
B.S.E. A.E., University of Michigan, 1991
M.S., George Mason University, 2000
M.Div., The Southern Baptist Theological Seminary, 2006

ACADEMIC

Adjunct Instructor, Lancaster Bible College, 2010-11

ORGANIZATIONAL

North American Professors of Christian Education