Using Graphic Organizers with Scriptural Text: Ninth-Grade Latter-Day Saint (LDS) Students’ Comprehension of Doctrinal Readings and Concepts

Mark D. Potter
Utah State University

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USING GRAPHIC ORGANIZERS WITH SCRIPTURAL TEXT: NINTH-GRADE LATTER-DAY SAINT (LDS) STUDENTS’ COMPREHENSION OF DOCTRINAL READINGS AND CONCEPTS

by

Mark D. Potter

A dissertation submitted in partial fulfillment of the requirements for the degree of DOCTOR OF EDUCATION in Education

Approved:

Cindy D. Jones Ph.D.
Major Professor

Michael Freeman, Ph.D.
Committee Member

Kay Camperell, Ph.D.
Committee Member

Kay Bradford, Ph.D.
Committee Member

Jim Dorward, Ph.D.
Committee Member

Mark R. McLellan, Ph.D.
Vice President for Research and Dean of the School of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2011
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ABSTRACT

Using Graphic Organizers with Scriptural Text: Ninth-Grade Latter-Day Saint (LDS) Students’ Comprehension of Doctrinal Readings and Concepts

by

Mark D. Potter, Doctor of Education
Utah State University, 2011

Major Professor: Dr. Cindy Jones
Department: Educational Leadership and Curriculum

This study investigated the effect of instruction that included graphic organizers on LDS seminary students’ ability to understand scriptural text and their ability to identify doctrines in scriptural text, utilizing a repeated measures, quasi-experimental design involving 209 ninth-grade student participants. The participants were randomly assigned by class to one of two treatment groups. Participants in the treatment group received instruction using graphic organizers with the standard curriculum and participants in the comparison group received instruction using only the standard curriculum. Three different measures were employed to measure the effectiveness of the graphic organizers intervention: (a) a multiple-choice test of LDS doctrines and principles; (b) an identifying doctrines and principles in text test; and (c) a student perception survey. Results of the ANOVA for the multiple-choice test indicated no significant difference between instructional groups for ability to recall facts from the
class instruction and the class text, $F(1, 205) = 1.60, p = .21$, partial $\eta^2 = .21$. Results of
the ANOVA for the identifying doctrines and principles in text test, measuring
transferability of the skills learned while studying the *Doctrine and Covenants* to a
different text containing some of the same doctrines and principles, also indicated no
significant difference between groups, $F(1, 196) = 1.93, p = .17$. The results for the
student perception survey were positive; most students felt confident about their ability to
comprehend scriptural text, but were slightly less confident about their ability to identify
doctrines and principles in the text. The participants in this study were generally positive
in their willingness to learn about and use graphic organizers. Results of this study
indicated that graphic organizers did not significantly impact students’ ability to identify
doctrines and principles in scriptural text or to learn concepts from scriptural text.
ACKNOWLEDGMENTS

I would like to thank Dr. Cindy Jones for her patient mentoring and hours of work on my behalf. I am also grateful to my committee members, Dr. Kay Camperell, Dr. Kay Bradford, Dr. Michael Freeman, and Dr. Jim Dorward, for their assistance and insight throughout the coursework, research, and review of this work.

I would like to give special recognition and thanks to my wife, Kayleen, and our family for the encouragement, support, and sacrifices they have made to help me see this project through. I also owe a debt of gratitude to my colleagues and leaders at the Seminaries and Institutes for their assistance, especially to Rob Seamons, who helped with the design of graphic organizers and participated in the research, and to Shae Curtis for her help in proofreading and formatting the manuscript.

Mark. D. Potter
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CHAPTER I
INTRODUCTION

Comprehending Scriptural Text

In a recent LDS Seminary class, one ninth-grade boy was asked to read the following passage from the King James Bible aloud to other students;

He is despised and rejected of men; a man of sorrows, and we hid as it were our faces from him; and we esteemed him not. Surely he hath borne our grief, and carried our sorrows: yet we did esteem him stricken, smitten of God and afflicted. But he was wounded for our transgressions, he was bruised for our iniquities: the chastisement of our peace was upon him: and with his stripes we are healed. (The King James Edition of the Bible, Isaiah 53:1-5)

He had not paused or missed a word; his pronunciation was great. He sat down and said, “I didn’t understand any of that. I know it’s about the Messiah, but that’s about all.”

Others in the class nodded in agreement with his statement. How can seemingly good readers miss the major doctrinal concepts of the scriptural passages they read?

Scriptural text and spiritual education present some unique challenges for religious educators and their students. These challenges include the following.

Language of the Scriptures

For many Christians, the King James Edition of the Bible is their standard text. First printed in 1611, this edition of the Bible was written in early modern English, as were the works of William Shakespeare. While this style of writing is still readable today, some of the spelling and grammatical conventions are problematic to many readers both young and old. Early modern English was a time of great change in the evolution of the
English language. Spelling was unstable and many foreign words, particularly French and Latin, were being adapted into common usage. Stabilization and standardization of spelling and word usage would not happen until well into the mid-1700s and 1800s, with the development of modern English (Beach, 2001). The King James translators also retained many words that were archaic even at the time it was published. Mistranslations, misspellings and the adaptation of foreign words all tend make reading of the 1611 King James Version (KJV) difficult for modern readers (Skousen, 1986).

**Context of the Scriptures**

Because Christian scriptural texts are translations of ancient texts from Hebrew, Greek, Latin, Aramaic, or other languages, there are some nuances in translation in which meanings may have become obscured or even lost. They were written by ancient people about ancient cultural and religious experiences of their day, many of which are very foreign to the modern readers’ experience. Metaphors, allegories, geographical and historical data that all made sense to the original authors and audience are quite difficult for the modern student.

**Nature of the Students**

To many religious educators, the question of how to motivate students to engage in scriptural text also comes into play. Some of the problem stems from the seeming disconnect between the Gen X students and engagement with the printed text (Hinds, 2001). Other students who may have considerable religious experience have, what Vaage (2007) described as, “affective alienation or default dissociation from the Bible and those
reading traditions historically associated with its constructive interpretation” (p. 88).

They may have respect and even reverence for the text; they simply have no background or experience with reading and learning from the text. This ambivalence toward engaging in scriptural text may be due in part to the difficulty of the text or because the student sees little relevance in of the ancient text in the modern world. Additionally, rather than engage the text, many students wait for someone to interpret it for them or as Vaage observed, “It is not uncommon to hear these students suggest that it would be either too difficult or too dangerous for them to venture interpretation on their own” (p. 88).

Religious educators have long recognized that scriptural text is difficult on a variety of levels. Scriptural texts are considered sacred in the communities that use them. Sacred texts are meant to be transformative; that is they are to inform and guide the readers’ life. Religious educators also recognize that a scriptural text cannot be transformative if the students cannot comprehend its meaning and make appropriate application in their lives.

**What Constitutes Difficult Text?**

Steiner (1978) outlined a four-level hierarchy of how a text may be difficult for a reader to understand. This hierarchy can be applied to examining the difficulty of comprehension of scriptural text.

**Contingent Difficulties**

Steiner (1978) called these contingent difficulties because they are “contingent on being looked up” (p. 267). These are the most visible of difficulties—the words and
phrases that need to be defined. Contingent difficulties can be easily solved by use of a
dictionary or encyclopedia. For example archaic words that appear in the KJV New
Testament such as *mete, privily, or closet* may be difficult for modern readers to
understand. However, after consulting a dictionary a student would know that *mete*
means to measure or portion out, *privily* means secretly or privately and a *closet* is an
inner room in a house for study, meditation or prayer, not the tiny room for storage of
clothes and other things. Contingent difficulties represent a surface level of
understanding. The reader is able to read the words of the text, but may not have a
genuine comprehension of the meaning of the text.

**Modal Difficulties**

Modal difficulties are caused by dissonance or distance between the writer and the
reader. Modal difficulties are not removed by clarification of words or phrases. Modal
difficulties involve understanding an entire concept. These difficulties may arise from the
way in which the writer expresses himself or from the context in which he is writing. For
example, Isaiah was a prophet and a counselor to King Ahaz. God was speaking to King
Ahaz through Isaiah and made the following assessment:

> And say unto him, Take heed, and be quiet; fear not, neither be faint hearted for
the two tails of these smoking firebrands, for the fierce anger of Rezin with Syria,
and the son of Remaliah. Because Syria Ephraim and the son of Remaliah have
taken evil against thee saying, let us go up against Judah, and vex it, and let us
make a breach therein for us and set a king in the midst of it, even the son of
Tabeal. (Isaiah 7:4-5)

There are several things the reader needs to know in order to understand this passage.
Perhaps most important to understand is the role of a Hebrew prophet as a spokesman for
God to His people. The reader should also know that there has been a civil war in the ancient house of Israel. The resulting two kingdoms are named Judah in the south, and include Jerusalem and the area south of Jerusalem, and Israel in the area north of Jerusalem and bordering on Syria. The northern kingdom of Israel is also known as Ephraim. The son of Remaliah is Pekah, who is the king of Israel (Ephraim). Rezin is the King of Syria. They have made a treaty with each other to attack and conquer the kingdom of Judah and set up a new king. The tails of the two smoking firebrands (Syria and Ephraim) is symbolic of the idea that there is more smoke than fire in these two Kings, they once had power and influence but it is on the wane at this time. They will not succeed in their plans to conquer Judah. Modal difficulties are often exaggerated by the lack of experience or maturity of the reader. Where contingent difficulties are focused on understanding words and phrases, modal difficulties require a deeper understanding of an entire concept.

Tactical Difficulties

These difficulties are caused deliberately by the writer. In scriptural text, some parables and allegories are meant to veil the meanings of the text. This was plainly taught by Jesus to the disciples when they asked why he spoke to the people in parables (Matthew 13:1-15). After Jesus had delivered the Parable of the Sower, the people asked why he taught using parables. His reply was:

For whosoever hath, to him shall be given, and he shall have in abundance: but whosoever hath not, form him shall be taken away even that he hath. Therefore, I speak unto them in parables: because they seeing see not; and hearing they hear not, neither do they understand. (Matthew 13:12-13)
The tactical jump from rhetorical text to the metaphysical realm is often unsettling to readers because it requires something more than cognition of concepts, phrases and words. It requires an act of faith on the part of the reader, a willingness to act upon what is being said in the text rather than simply perusing it. With scriptural text and spiritual learning the more time a student spends reading and seeking personal guidance from the scriptures, the more the scriptures will open up for him or her. This process is described by Kimball (1982), “The treasures of both secular and spiritual knowledge are hidden ones – but hidden from those who do not properly search and strive to find them…spiritual knowledge is not available for the mere asking: even prayers are not enough. It takes persistence and dedication of one’s life (p. 82).

**Ontological Difficulties**

As indicated by the name, ontological difficulties actually stem from the metaphysical nature of some scriptural text. This type of difficulty may be applied to prophetic text, where the actual meaning is known only to the author, who is a prophet; the message is veiled or unknowable at the present time. The role of a prophet is to reveal the will of God to the inhabitants of the earth. To know the mind of the prophet is to know the mind of God. In the *Bible*, this would apply the writings of the prophets, such as Isaiah, Jeremiah, Daniel, Ezekiel, and especially to the book of Revelation in the *New Testament*. The prophets often speak of events that are in the future. This is done sometimes using types, symbolic images, and events that are familiar to them in their time but attached to some future event. For example, Isaiah compared the destruction of Israel by Assyria, an event that happened in his time, to events that would occur in the
future at the second coming of Jesus Christ.

Other prophetic writings involve visions of things that were outside the experience of the prophet and his audience. An example of this would be the Revelation of John, which includes vivid images of fantastic beasts, a variety of angelic beings ministering in different capacities some to destroy and some to save. Incredible scenes of battle, desolation, and famine are also described. The language is understandable as far as the words and phrases are concerned, and the imagery is vivid and moving; however, in many instances the meaning and timing of the events he is attempting to describe are not forthcoming. The reader is left questioning the meaning of the images and whether they are to be understood literally or symbolically and how they are to be applied.

Application of these four categories of difficulty to scriptural text clearly identifies reasons students may fail to comprehend scriptural text. Contingent difficulties exist throughout scriptural text. They represent the first order of difficulty a reader needs to cope with by doing homework including vocabulary, historical, cultural, and geographical studies. Modal difficulties are also a constant throughout scriptural text. Modal difficulties, like contingent difficulties, can also be remedied through the thoughtful application of reading skills and strategies and a willingness to pay a price in personal study.

Tactical and ontological difficulties are somewhat different than contingent and modal difficulties in the fact that they have made the jump from rhetorical to metaphysical realm of meaning. Tactical difficulties are created by the author in order to conceal the meaning of a text from one reader while revealing the meaning of the same
text to another reader with a different set of competencies or level of spiritual awareness. Ontological difficulties present the greatest challenge because some parts of scriptural text are incomprehensible at the present time, unknowable because their meanings have not yet been revealed. Tactical and ontological differences are generally overcome as a student matures in scriptural study and spiritual learning. First, by overcoming the contingent and modal difficulties through diligent study, followed by a willingness to learn by faith, personal meditation and seeking the guidance of God and Christ through prayer. The scriptures themselves give some keys for coping with tactical and ontological problems. For example, consider the following verses, “But there is a spirit in man: and the inspiration of the Almighty giveth them understanding” (Job 32:8). Or, “For the Lord giveth wisdom: out of his mouth cometh knowledge and understanding” (Proverbs 2:6). Clearly, complete spiritual understanding of some scriptural text is something that happens outside of the realm of mental cognition.

**What Constitutes Comprehension of Any Printed Text?**

Comprehension consists of three basic elements: the reader who is doing the comprehending, the text that is to be comprehended, and the activity in which the comprehension is to occur. Surrounding these three elements is the sociocultural context of the learning community (Snow, 2002). Some of the issues concerning the reader and the types of difficulties they encounter in scriptural text were addressed in the previous section. In this section I would like to discuss briefly what is necessary for comprehension to happen.
Kintsch (1994) proposed that comprehension of printed text occurs on different levels. At the surface level (also referred to as the surface code), there are the words and phrases and the linguistic relations that occur between them. The semantic and rhetorical structure of the text provides another set of relationships that are important to comprehension. These relationships constitute what van Dijk and Kintsch (1983) called the text base. This is distinguished from a second component known as the situation model. According to Kintsch, the situation model corresponds with a deeper level of understanding in which information from the text is “elaborated from prior knowledge and integrated with it” (1994, p. 294). The text base is associated with remembering a text, or being able to reproduce the text such as recalling a story or, remembering items from a list. The situation model represents the reader’s ability to learn from the text. Kintsch (1994) explained:

The distinction to be made here between learning and memory is a matter of the criteria used to define learning: Learning requires deep understanding of the subject matter, so that the information acquired can be used productively in novel environments; for mere memory, as assessed by reproduction of the text, a mere shallow understanding suffices. (p. 294)

Kintsch (1986) explained this relationship further in the following way, “The problem is not with the words or the phrases, nor even with the overall structure of the text…is the problem with understanding the situation described by the text. Clearly, understanding the text is not a sufficient condition for understanding what to do” (p. 88). With this model of comprehension, the reader needs to be able to construct mental representations of the text and be able to make productive connections with previous knowledge. Other factors at work in this model of learning and comprehension are the
form and organization of the text and the background knowledge of the reader. Graesser, Mills, and Zwan (1997) concurred with van Dijk and Kintsch (1993) on the purpose of the surface code, text base, and situation model in aiding comprehension, but added two other levels of text representations—the communication level and the text genre level. The communication level is the pragmatic communicative context created by the writer to communicate ideas to the reader. The text genre level includes many categories and subcategories of text including narration, exposition, description, persuasion, poetic and many others.

If one were to visualize the task of comprehension it would look like an octopus with tentacles reaching out and working simultaneously with vocabulary, meanings, syntax, previous knowledge, experience, text genre, and memory functions all at multiple levels and all for the purpose of constructing meaning from the text. For young students of the scriptures, managing the vast arena of information needed to construct meaning from the text can seem overwhelming. Like the young man in the opening anecdote, they have knowledge but it is only working at the surface level, understanding or comprehension has not yet been achieved because the student has not learned how and when to tap the other levels of meanings represented in the text.

There are many skills and strategies that work together to enhance comprehension. While there is no one best practice that encompasses all aspects of comprehension; there are a range of skills and strategies that can and should be used in a variety of teaching and learning situations. The Report of the National Reading Panel listed as part of its findings those strategies that held the most promise to improve
comprehension based on firm scientific evidence. The practices listed by the National Reading Panel included: comprehension monitoring, cooperative learning, graphic and semantic organizers including story maps, question answering, question generation and summarization (National Institute of Child Health and Human Development, 2000). While not a panacea, graphic and semantic organizers can usually be designed to include a variety of reading skills and comprehension strategies. According to the NRP, graphic organizers assist students in organizing text in ways that improve comprehension, memory and recall of text and information.

Purpose and Objectives

The purpose of this dissertation was to measure the effectiveness of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to analyze and comprehend scriptural texts. Based on the overall effectiveness of graphic organizer interventions in a variety of studies and in many different content areas, it stands to reason that students who learn to use them in their personal study will be better able to analyze scriptural text, recognize principles and doctrines contained in the text and be able to recognize, remember and understand how to apply them.

The questions for this study were as follows.

1. What is the influence of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to understand and recall doctrine and principles from scriptural text?

2. What is the influence of the use of graphic organizers on ninth-grade LDS
Seminary students’ ability to identify and analyze religious doctrines and principles across scriptural text?

3. What are the students’ opinions about using graphic organizers to analyze and study scriptural text?

Definitions

The sacred texts used by the LDS include the King James Edition of the Bible (1,590 pages, excluding all appendices, 1981 LDS English Edition), the Book of Mormon (531 pages, 1981 English edition), the Doctrine and Covenants (294 pages, 1981 English edition) and the Pearl of Great Price (61 pages, 1981 English edition). These are referred to as the standard works of the Church. The Bible, Book of Mormon and portions of the Pearl of Great Price are each a translation of ancient records. Each contain a variety of literary styles including historical narratives, poetry, prophecies and genealogies. The Doctrine and Covenants is different from these texts in that it is not a translation of an ancient text, rather it is compilation of revelation received through the Prophet Joseph Smith and others who have received revelation for the governing of the Church of Jesus Christ of Latter-Day Saints (Davies, 1992). The Doctrine and Covenants is not a historical narrative, although the history of the Church is closely linked to the revelations. The text is expository in nature and follows the establishment and growth of the Church throughout its formative years. The Doctrine and Covenants contains explicit instructions from the Lord Jesus Christ to a number of individuals, and to members of the Church as a body. These revelations continue to provide guidance for members of the Church today.
as they try to understand and live the gospel of Jesus Christ.

Seminary is a part of the Church Educational System in which teenage youth
grades 9-12, (ages 14-18) in the American school system gather for religious instruction.
There are three formats in which this is accomplished: released time seminary, early
morning seminary and home study. In several western states, released-time seminary is
held during the regular school day. Students are “released” from the public school for one
class period each day to receive religious instruction in Church-owned buildings adjacent
to the public schools. The curriculum for these studies is centered on the standard works
of the Church, the *Old Testament, New Testament, the Book of Mormon, the Doctrine and
Covenants, and Pearl of Great Price* (Christensen, 1992). The students and teachers use
these books as their text. Each book of scripture is taught in a 4-year rotation, each
student will have opportunity to make an in-depth study of each volume of scripture. The
students who participated in this study were in a released-time Seminary, their course of
study for the school year 2010-2011 was the *Doctrine and Covenants.*
CHAPTER II

REVIEW OF LITERATURE

The purpose of this review of literature was to evaluate and synthesize research concerning the teaching of scriptural text including pedagogical methods and difficulties encountered by religious educators. The number of studies located in the search is indicated by the numbers within the parentheses.

Inclusion Criteria:

1. Must be in the Christian tradition using Christian canon. (50)
2. Must contain descriptions of difficulties associated with the teaching of scriptural text. (25)
3. Must include pedagogical methods for teaching scriptural text. (10)
4. Must focus on youth ministries or similar congregational teaching situations. (20)

An online search using EBSCO host, Academic Search Premier, PSYCHinfo, and ERIC databases was used to locate studies; search terms included biblical studies, teaching scriptural text, religious education, bible study and teaching, scriptural pedagogy and youth ministries.

This review of literature located 105 studies that met the criteria for inclusion in this review. All of these studies acknowledge the difficulty of teaching from scriptural text and most of them suggested skills that would be useful to assist religious educators in improving the scripture study habits of the students in their respective ministries. None of the studies selected made comparisons of one pedagogical method against another. Some
of the pedagogical methods suggested were particular to the tradition and ritual practice
of the religious community in which they were used and thus, would not be readily
applicable to other religious educational settings. No studies were located that assessed
the efficacy of the pedagogical method described, except to report that some students or
congregation members felt that they had benefited from the practice. Religious educators
appear to be more interested in the subtle and very personal evidence of revelation,
transformation and conversion that is reflective of comprehension on a personal level.
The following is an overview of the identified studies from religious education organized
by the content of the study.

Textual Difficulty and Language of Scriptural Text

Having been a religious educator for over 25 years, the most oft repeated
complaint of most of my young students has been, “The scriptures are just hard to
understand, the language is so different from how we talk.” At the same time the question
most religious educators wrestle with is, “How can I help my students understand this
doctrine or principle or text?” Consequently, one focus of religious education has been to
open scriptural text in ways that lead to comprehension.

Lee (2007) commented on the need for educators to connect student’s learning
from biblical text to the context of their own lives, finding contemporary applications of
an ancient message. This article focused on hermeneutical principles and application to
biblical text. Paddison (2006) explained, “Theology is rooted in the reading of Holy
Scripture and as such requires a theological hermeneutic appropriately informed by
attention to God’s revealing activity” (p. 433). There were many similar articles urging biblical interpretation from one point of view or another and arguing why their point of view (feminist, modern, postmodern, colonial, postcolonial, etc.) would be best model for students to follow. There are many points of view and voices to be heard in scriptural text; it is important that the student learn to ‘pay attention to God’s activity of self-disclosure’ thus allowing the student the freedom to be led by the voice of the scripture and not one forced upon it (Paddison, 2006). Lee (2007) suggested a course of study that would help any student of the Bible including: (a) a study of geography, cultures, and history of the Near East along with rise and fall of the various empires in the region; (b) a study of the world of modernity from the rise of European empires, western capitalism and Christian missionary movements; and (c) a careful consideration of the world in which the students live and interpret scripture in, striving to create a Christian worldview.

Pyper (2005) focused directly on the biblical prophetic text of Zechariah and Daniel. He suggested that difficult text such as Zechariah has an important role in teaching readers how to read scriptural text despite their difficulty. He further suggested the role of faith and personal revelation that must become a part of the comprehension process when reading scriptural text. His arguments give credence to the idea that comprehension of scriptural text happens on many different levels and that interpretation is ultimately the role of the reader and is closely related to the time and socio-cultural tradition of the reader.

Whaling (2000) considered the value of scripture as more than just literature and the hermeneutical challenges faced by students of the scriptures. Whaling explored the
notion of what constitutes scriptural text across several religions and how they are valued and interpreted by their respective communities. He considered interpretation issues such as whether one considers the scriptures to be open or closed the historical context of scripture itself or the historical traditions within which the scriptures have been interpreted through the ages. He also discussed issues stemming from translation of sacred texts. Whaling, along with authors of several other studies, mentioned the importance of the community when it comes to interpretation of the scripture. When students of scriptural text interpret or make application of the text, they generally do so in the light of the collective experience of the religious community or tradition in which they practice.

Word studies were also a common theme throughout the literature. The use of early modern English in the King James edition of the Bible has been the cause of many misunderstandings. Skousen (1986) described how archaic words have caused confusion for the modern reader of the scriptures. He also discussed the changes in meanings through the evolution of the English language along with misprints, mistranslations, and alternative meanings of translated words that have contributed to the difficulties in understanding the language of the scriptures. Some denominations have translated the Bible into modern English in the hopes that people would be less intimidated by the text and more willing to venture reading it (Griggs, 1990).

**Pedagogical Methods for Enhancing Comprehension of the Scriptures**

Nearly all discussions on comprehension skills and strategies focus on decoding,
vocabulary, world knowledge, active comprehension strategies, and monitoring their own understanding (Kamil, Mosenthal, Pearson, & Barr, 2000). Religious educators have also recognized the value of these skills in many of their pedagogical approaches. Decoding was not mentioned in any of the studies; it was generally assumed that most students of the scriptures in secondary education have already mastered the ability to recognize letters and sounds that constitute the words of a text. However, vocabulary studies in which scriptural words are defined in terms of their meaning in the context of the scripture and their meaning in the context of the world of the modern reader have been very useful to students of the scriptures (Crockett, 2005; Griggs, 1990; Skousen, 1986). Scriptural text often has specialized vocabulary including word usage that is different from other texts. It requires time and effort to build a good vocabulary base which will significantly open the scriptures for understanding (Welch & Draper, 2005).

World knowledge is all knowledge a student possess and can apply to understanding the world in which they live and the world they are reading about. It is the activation of this prior knowledge base that allows the student to connect what they already know with the new information they are receiving and processing (Caillies, Denhiere, & Kintsch, 2002; Crockett, 2005; Griggs, 1990; Kanitz, 2005). Students oftentimes have relevant prior knowledge, but do not connect it or integrate it with the new knowledge in ways that lead to comprehension. Learning how to bridge the gap between old and new knowledge is an important comprehension strategy and can be facilitated by other active comprehension strategies. Some active comprehension strategies include questions and answers, and question generation (Holzer, 2007; Maynes,
2005; Vaage, 2007) and exercises in exegesis and creating narratives from the text (Vaage, 2007; Wright, 2002).

Another effective study strategy was suggested by Scott (1993) for students of the scriptures:

As you seek spiritual knowledge, search for principles. Carefully separate them from the detail used to explain them…. As each element of truth is encountered, you must carefully examine it in the light of prior knowledge to determine where it fits. Ponder it; inspect it inside and out. Study it from every vantage point to discover hidden meaning. View it in perspective to confirm you have not jumped to false conclusions. (p. 86)

The framework provided by a graphic organizer allows students and teachers to examine the text carefully, compare it with their previous knowledge and allows the student to see where it fits in their personal life.

**Why Use Graphic Organizers in Religious Education**

Ausubel (1963) rationalized the use of graphic organizers by speculating that a learners existing knowledge, which he referred to as cognitive structure, greatly influences his or her learning. When cognitive structure expands and strengthens by incorporating new information, learning occurs. To facilitate this process graphic organizers provide learners with a meaningful frame work for relating their existing knowledge to the new information (Kim, Vaughn, Wanzek, & Wei, 2004).

Graphic organizers are visual/spatial representations of textual material. The graphic display of the material helps students to discover relationships, see patterns and recognize concepts (Fisher, 2001). Graphic organizers help students sort, show relationships, make meaning, and manage data quickly and easily. They can be used
before, during, and after reading (Gallavan & Kottler, 2007). The information presented in a graphic organizer can be arranged in a variety of different frameworks so that student can begin to understand a concept at a glance. Review of material is also enhanced because the student can visualize each concept and its relationship with other concepts. Graphic organizers are also useful for activating students’ prior knowledge and promoting more active classroom involvement.

In religious education, the text can be difficult on a number of levels. Graphic organizers can be of great assistance in organizing background information from the text in ways that assist the reader to visualize and understand ancient cultural, historical or geographical information within the text and make connections to the modern world from out of the text. Graphic organizers can be used for vocabulary development (see Appendix E, Figure E-1), story mapping, and concept mapping (see Appendix E, Figure E-2), as well as activating prior knowledge.

Being unable to locate studies in the religious education journals and dissertations concerning the use of graphic organizers, it was necessary to turn to current research being described in secular educational journals to discover the efficacy of graphic organizers.

Selection of Studies Concerning the Use and Efficacy of Graphic Organizers

The criterion used to select the studies included the following.

1. Peer reviewed studies in journals on reading strategies and graphic organizers.

2. The studies were conducted with subjects between the ages of 14 and 24,
including students with learning disabilities.

3. The studies must have included the use of a graphic organizer as the independent variable.

4. The studies must also have reading comprehension, recall and other comprehension descriptors as dependent variables.

5. Studies would be conducted using a pre/posttest, intervention and control design.

Using EBSCO Host, Academic Search Premier, PSYCHinfo and ERIC databases to locate studies; search terms included GOs, mind map, concept map, semantic map, concept web, reading comprehension and literacy. The most usable material came from Academic Search Premier. A search using GO combined with reading comprehension yielded 23 articles of which only five met the selection criteria for inclusion in this proposal’s review of literature.

**Graphic Organizers**

Kim and colleagues (2004) conducted a meta-analysis of 21 studies on the use of graphic organizers for students with and without learning disabilities in inclusion classes. Each study described the use of a specific type of graphic organizers as the independent measure and a variety of dependent measures such as multiple choice recall tests, multiple choice comprehension test, oral free retell test, and analysis of student generated graphic organizer. All of these studies were conducted with subjects in grades 4-12 and some undergraduate students in the American Public School System. The majority of the
studies were of middle school and high school students in classes. Studies identified for
the meta-analysis investigated four types of graphic organizer. The effect sizes listed in
this review were based on the use of Cohen’s $d$, which is defined as the difference
between two means divided by a standard deviation for the data and is represented by the
formula; $d = \frac{x_1 - x_2}{s}$. Using this formula and Cohen’s guidelines, effect sizes were
interpreted as: 0.2 as small effect size, 0.5 as a medium effect size, and 0.8 as a large
effect size. The research questions guiding the meta-analysis were:

1. Are graphic organizers effective in improving reading comprehension?
2. Are certain types of organizers more effective than others?
3. Does the effectiveness of the graphic organizer change depending on who is
generating or implementing the graphic organizer?
4. Do students from elementary, junior high and high school benefit equally from
the use of graphic organizers?


1. Six of the studies used semantic organizers designed to represent the
relationships between concepts and main features of concepts. The participants were
tested using multiple choice comprehension tests; effect sizes were $d = .81-1.69$.

2. Three of the studies combined cognitive maps and mnemonics. The participants
were evaluated using informal reading inventories. The reported effect sizes were $d =
.36-1.22$.

3. Seven studies looked at the use of cognitive maps without a mnemonic to
display the various concept relationships in a unit of study. The participants were
evaluated by multiple choice comprehension tests with effect sizes $d = .96$-$5.07$.

4. Two of the studies evaluated teacher-generated graphic organizer vs. student-generated graphic organizer. Framed outlines that are created by teachers and students identify main ideas and important facts in a unit of study. Framed outlines (Appendix E, Figure E-1) are a note taking strategy and can be used during reading or listening activities. The teacher fills in some portions of the graphic organizer such as main ideas, characters, or back ground information, and then allows the students to fill in the missing information from the text or the lecture. These were evaluated by analyzing the content of the student generated graphic organizer. Effect sizes were $d = .80$-$1.78$.

5. Eighteen of the studies were evaluated using researcher-prepared multiple choice comprehension tests, two combined researcher-developed tests with standardized tests and one used and curriculum based assessment developed by a text book company. The duration of the interventions in 19 of the studies ranged from 1 to 3 weeks with the number of sessions ranging from 2 to 12. The interventions in two of the studies lasted from 12 to 16 weeks with no mention of the number of sessions.

Overall, the findings of this meta-analysis indicated the following.

1. Semantic organizers, cognitive maps with a mnemonic and framed outlines were found to be very effective for reading comprehension.

2. Graphic organizers were effective regardless of who directed their implementation.

3. Students who used graphic organizers outperformed students who did not.

4. That the use of graphic organizers were beneficial to all the subjects especially
in the areas of recall and reading comprehension

Beginning with the most recent, the following studies also indicate the variety of ways to use graphic organizers can be used and their effectiveness with different content areas and methods of use. Robinson conducted three quasi-experiments using intact classrooms and one true experiment using random assignment on the use of graphic organizer as note-taking strategy. They employed a specific note taking strategy instruction using partially completed graphic organizer where the teacher created a framed outline with headings, allowing the student to fill in the missing information from both lectures and text. Results of the three quasi-experiments showed participants that received the graphic organizer instruction showed statistically significant improvement on pre/posttests over their classmates who used only linear note-taking strategies (effect size $d = .45$). Additionally, the participants who received training in the use of partially completed graphic organizer the greatest improvement (effect size $d = .45$). Encouraged by the positive results of the three quasi experiments, they conducted a fourth experiment using random selection and assignment to 12 groups.

The participants were 58 students enrolled in an undergraduate psychology course; students in groups 1-6 served as the treatment group, 7-12 were the control group. The treatment groups used both web-based graphic organizers both to complete assignments and quizzes for the first three units of study then switched to paper based notes for the second three units. The order was reversed for the control group.

The researchers compared the use of the partially completed graphic organizer, where students filled in the missing information during class lectures or from textbook
reading, with the use of teacher created completed graphic organizer where the students simply reviewed what the teacher had prepared. The experiment was conducted during a 15-week semester with a switch over point at midterm. The students were tested after the first three units, with results showing greater achievement by the students using the partially completed graphic organizer. The methods were then switched so the complete groups were given partially completed graphic organizer and the partial groups were given complete graphic organizer for the same amount of time.

There was no difference in the performance for the second part of the experiment ($d = .04$). This finding was not unexpected, because both groups had been exposed to the treatment for the same amount of time. However, over the course of the experiments the students that used the partially completed graphic organizers fared much better than did their classmates with an effect size $d = .28$. This was less than the effect size in the three previous experiments where the effect sizes ranged from .45-.78. The results from all four experiments provide support for the use of partially completed graphic organizers for a note-taking strategy.

In earlier experiments, Robinson and colleagues (2006) found similar results in two experiments involving college freshmen. The purpose of the experiment was to determine which type of notes and review strategy would be most effective in immediate and delayed recall test. The experiment was carried out in only two days with a 70-minute session for the immediate recall groups and a 50-minute session on 1 day with a 20-minute review 2 days later for the delayed group. The use of graphic organizers was the independent variable; the dependent variables were immediate recall (1 day later) and
delayed recall (10 days later). Once again, the students who had used the graphic organizers fared much better than their counter parts in immediate and delayed recall of material. They also reported the groups who were trained in the use of the graphic organizers were more able to discover and remember the relations between the different concepts than the text only group. They hypothesized the difference in performance was because the graphic organizers caused the students to focus on concept relationships or increased the students’ ability to see the “big picture” rather than focus on memorizing separate pieces.

In another study of graphic organizer, Griffin, Malone, and Kameenui (1995) sought answers to two questions: (a) Does graphic organizer instruction facilitate comprehension, recall, and transfer of information in an expository textbook; and (b) To what degree is explicit instruction necessary for independent generation and use of graphic organizers by students? Participants included 99 fifth-grade students who had been randomly assigned to one of five treatment groups: (a) explicit graphic organizer instruction, (b) explicit instruction with no graphic organizer, (c) implicit graphic organizer instruction, (d) implicit instruction with no graphic organizer, and (e) traditional basal instruction. The experiment was conducted over the course of ten days. They discovered a significant difference in acquisition, retention and recall of material by students who had received the explicit graphic organizer instruction. They employed three types of dependent measures: immediate and delayed posttests, immediate and delayed recall tests and a transfer test. The immediate test was administered the next day, while the delayed test was delivered 12 days later. The findings in this study indicated the
students who had been trained in the use of the graphic organizers scored higher on all
tests than did their non-graphic organizer using counter parts.

The students in the explicit graphic organizer, explicit no graphic organizer and
implicit graphic organizer all performed better in transfer and recall than students
receiving traditional instruction. The explicitness of the instruction and the presence of
the graphic organizer greatly facilitated students’ ability to retrieve information from the
text. The researchers employed a written free recall format for testing. They hypothesized
that because of the unstructured nature of the test that students would be motivated to
incorporate the graphic organizers in their answers. However, this was not the case;
instructions given to the student prior to writing did not prompt them to apply the graphic
organizer strategy to their written answers. There was no way to measure how different
the outcome might have been had the students been instructed to use the graphic
organizer strategy in their written responses. This finding led the researchers to
hypothesize that it takes more than ten days to get the students firmly established in the
personal use and generation of the graphic organizers. While the graphic organizer
intervention did make a statistically significant difference in the learning outcomes, the
students did not successfully master how to use the graphic organizers. In other words,
even though the students learned material by using the graphic organizer strategy, they
did not learn how to apply the graphic organizer strategy personally.

Alvermann’s (1981) research on high school tenth grade students was designed
with three independent variables: one continuous (reading comprehension level) and two
categorical (graphic organizer and text structure). The dependent variable (number of
idea units recalled) was measured twice, immediately after reading and one week after reading. The purpose of the study was to clarify conditions under which graphic organizers can facilitate comprehension of expository text. All the students had been tested for reading comprehension ability and were randomly assigned to one of four groups according to reading comprehension ability. Those groups were then randomly assigned to treatment conditions. It was anticipated that lower achieving students would benefit most from the graphic organizer instruction while the higher achieving students would be able to rely on text alone. It was discovered that both high and low achieving students benefited from the use of graphic organizer. The use of the graphic organizers also helped students integrate information across sentences for better assimilation of concept. Alvermann hypothesized the reason for these findings as follows: (a) the graphic organizer provided “anchors” to help students hold on to new information; (b) the graphic organizer may cause the student to analyze and process the information more deeply; and, (c) graphic organizers may also cause the students to restructure the text, increasing their comprehension and thereby compensating for the less effective list type features commonly used in secondary textbooks.

Summary

The use of graphic organizers has been shown to help students’ organize and understand material in many content area classrooms. Kim and colleagues (2004) demonstrated graphic organizers to be useful to students with some learning difficulties. Graphic organizers were effective in helping students’ recognition of material on
multiple-choice tests and effectively extended their ability to recall material for longer periods of time as indicated by Katayama and Robinson (2000). Most of the studies reflected large effect sizes on text comprehension and recall for the participants who were exposed to the practice of using graphic organizers over those who were not. Because graphic organizers have been shown to be effective in secular educational situations, it would seem reasonable that they would be an appropriate strategy for reading and studying scriptural text.
CHAPTER III
RESEARCH METHODS AND PROCEDURES

The purpose of this dissertation was to measure the effectiveness of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to analyze and comprehend scriptural texts. Based on the overall effectiveness of graphic organizer interventions in a variety of studies and in many different content areas (Kim et al., 2004; Langan-Fox, Waycott, & Albert, 2000; Robinson et al., 2006), it stands to reason that students who learn to use graphic organizers in their personal study will be better able to analyze scriptural text, recognize principles and doctrines contained in the text and be able to recognize, remember and understand how to apply them.

The questions this study sought to answer were as follows.

1. What is the influence of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to understand and recall doctrine and principles from scriptural text?

2. What is the influence of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to identify and analyze religious doctrines and principles across scriptural text?

3. What are the students’ opinions about using graphic organizers to analyze and study scriptural text?

Participants

Upon reaching the age of 14 (ninth grade in the U.S. school system), students may
enroll for one class per day of release-time from the public school for religious
instruction. The Church of Jesus Christ of Latter-Day Saints Seminary program of
religious education begins at this time. Participants in this study were ninth-grade
students attending release-time seminary classes. This age group was selected for this
study because it represented their first regular in-depth study of scriptural texts. See Table
1 for participant characteristics.

All of the participants attended ninth grade in a school district located in the
western United States. The percentage of population by ethnic subgroups for this school
district is 83% Caucasian, 11% Hispanic/Latino, 2% Native American, 2% Pacific
Islander, 1% Asian, and 1% African American. Students in this study represented rural,
suburban and urban areas. This study included 209 student participants from one junior
high school enrolled in the same Seminary program with two teachers (the researcher and
one cooperating teacher). Sample size was derived using Lypsy’s formula (Creswell,
2000, p. 284). For significance $\alpha = .05$, with power criterion of .80 and effect size $d = .50$,
an appropriate sample size would be 65 students in the treatment and comparison group.

Table 1

*Overview of Participant Characteristics by Group Assignment*

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<th>Treatment ($n = 104$)</th>
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<th>Comparison ($n = 105$)</th>
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<td>Female</td>
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<td>22</td>
<td>50</td>
</tr>
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</table>
Other studies on graphic organizers had indicated effect sizes ranging between $d = .36 - .81$ (Kim et al., 2004; Robinson et al., 2006) so it seemed appropriate to choose an effect size of $d = .5$ for this study.

**Research Design**

This 8-week study of the effect of graphic organizers on ninth-grade students’ comprehension of scriptural text was a quasi-experimental, repeated measures design. Students enrolled in release-time seminary were randomly assigned to one of 10 classes by public school administration. Using randomization software, these classes were then assigned to either the treatment ($n = 5$) or the comparison ($n = 5$) groups. Participants in the treatment group ($n = 104$) received instruction using the standard seminary curriculum with explicit instruction in the use of graphic organizers as a note taking and reading strategy. The participants in the comparison group ($n = 105$) were taught using the standard curriculum issued by the Seminary program without explicit use of the graphic organizer strategy. Class sizes for the study ranged from 21 to 28 students. There were two teachers participating in the study: the researcher and one cooperating teacher. Both teachers work in the same building adjacent to the same public junior high school. Both teachers have master’s degrees; the researcher has 25 years of experience teaching grades 9-12 and college, the cooperating teacher has 9 years of experience in grades 9-12.

**Teacher Effects**

The two teachers participating in the study each taught randomly assigned classes
from both the treatment and comparison groups. One teacher taught three of the treatment classes and two comparison classes, while the other teacher taught three of the comparison classes and two of the treatment classes. Having both teachers teach both the treatment and comparison groups should help to minimize threats from teacher effect.

**Description of Instruction**

The course of study for the school year of 2010-2011 was from a scriptural text known as the *Doctrine and Covenants of the Church of Jesus Christ of Latter-day Saints* and included instruction from the history of The Church of Jesus Christ of Latter-day Saints according to the standard curriculum supplied by the Seminary and Institute educational programs.

This study was conducted during the first quarter of the fall semester of the 2010-2011 school year. Beginning in August and concluding in October, the quarter consisted of 22 class sessions of 80 minutes each. The class sessions were conducted as follows.

Session 1 - Orientation to Seminary, send informed consent letters home with students
Session 2 - Class organization with pre-study student survey
Session 3 - Multiple choice and Identifying Doctrines and Principles Across Text Pretest
Sessions 4–19 - Instructional sessions for treatment and comparison groups
Session 20 - Class Conference
Session 21 - Multiple Choice and Identifying Doctrines and Principles Across Text Posttest
Session 22 - Post-study Student Survey and complete class business
For the treatment group, specifically designed graphic organizers were used with each instructional unit to analyze and define the doctrines and principles in ways that were designed help the students understand the major concepts and their application. The graphic organizers consisted of a variety of semantic and concept maps, cognitive organizers, matrices, and framed outlines. Twelve graphic organizers were used in the instruction; two of the graphic organizers used were repeated as part of a continuing lesson. The participants in the treatment group were trained using a scaffolding approach with teacher prepared complete and partially complete graphic organizers. The participants worked toward the goal of generating their own graphic organizers by the end of the eight weeks treatment period. Some form of graphic organizer was used as part of the lesson presentation every day, either as part of vocabulary instruction, review or preview of background material, or illustration of conceptual relationships and personal application of concepts.

The comparison group received instruction using the standard curriculum including the scriptural text as described for the treatment group. The participants in this group received instruction on the same doctrines, principles, and church history as the treatment group, only without the use of a specifically designed graphic organizer. If there was a graphic organizer included as part of the standard curriculum it was used for instruction with the comparison and treatment groups. There was only one graphic organizer included in the standard seminary curriculum (Appendix E, Figure E-4). However, special effort was made to avoid potential use of any additional graphic organizer for the comparison group. The researcher and the cooperating teacher worked
together through the summer of 2010 designing graphic organizers to be used for the treatment group.

**Fidelity**

To ensure the parameters of the study were met, the researcher and the cooperating teacher developed each of the daily lesson plans together for both groups. During these preparation sessions it was decided which type of graphic would be best suited for the topic of the day, including the visual design, text and method of presentation for each graphic organizer. This preparation time also included planning how the lesson material would be presented to the comparison classes without the use of a graphic organizer.

When teaching schedules allowed, both teachers visited the other’s classes to observe the instruction of both the treatment and comparison groups. Observing how and when graphic organizers were used (or not used) in both the treatment group classes and the comparison classes. Each class was visited at least twice during the course of the study for at least 30 minutes of instruction time with the researcher visiting the cooperating teacher and the cooperating teacher visiting the researchers’ classes. Copies of the lesson plans were kept and documented. Observation forms (Appendix D) were completed during each observation by the visiting teacher.

**Instrumentation**

The study was in the form of a pretest/posttest, control group design (Campbell,
1963). The pre and post treatment assessments include three measures: (a) a 13 question multiple-choice test of LDS doctrines and principles; (b) an identifying doctrines and principles in text reading test; and (c) a student perception survey about identifying doctrines and principles.

**Multiple Choice Doctrines and Principles Test**

The multiple-choice test was created by the Department of Research of the Seminaries and Institutes in 2009 and has been through four rounds of testing, evaluation and revision; it has reliability rating of .87 using Cronbach’s alpha. The data from this test was used to evaluate the students’ knowledge and recall of material taught from the scriptural text. A total of 13 questions were selected from a pool of 80 questions. These 13 questions were selected because they were more closely aligned with the specific doctrines and principles that were presented during the time period the study was conducted and would produce a more focused snapshot of the instruction that was presented to the participants. The multiple choice questions were a combination of reading comprehension and recall of information (Appendix A).

**Identifying Doctrines and Principles Across Text Test**

The *Identifying Doctrines and Principles* in text is currently in development by the Department of Research of the Seminaries and Institutes of Religion. It has had one round of testing and evaluation, this study represents the second round of use and evaluations for this instrument, no measures of reliability have been published for this
instrument. The test is designed primarily to determine if students are able to effectively read and recognize basic LDS doctrines as they appear in scriptural text.

The passage in this assessment was taken from the Book of Mormon, a scriptural text that is unique to The Church of Jesus Christ of Latter-day Saints. Although the passage of scripture from the Book of Mormon is similar to the Doctrine and Covenants in language and structure, it was not the same text the participants were using in seminary during this study. Like the Doctrine and Covenants, this passage was an expository text. The text was selected purposefully in order to measure of transferability of the skills learned while studying the Doctrine and Covenants to a different text containing some of the same doctrines and principles.

This in-text reading assessment has been significantly revised during the time that this study was underway. This instrument was used as it is currently the best measure available and because there were no other validated measures being used for scriptural text. Additionally, information from this study will be used by the Department of Research of Seminaries and Institutes to further their investigation of reading measures.

**Student Perception Survey**

The Student Perception Survey on identifying doctrines and principles was used to assess what the students think about their ability to identify gospel doctrines and principles in text (Appendix C). This survey was developed by the Department of Research of the Seminaries and Institutes of Religion and has been used for approximately 6 years. The purpose of the survey in this study was to measure the participants’ actual performance against their perceived ability and their perceptions of
the effectiveness of the instruction they have received.

**Administration of Assessments**

On the first day of school all students were given an informed consent letter as required by the IRB. The students were also assigned a student identification number and entered into a database. There were 239 students enrolled in seminary on the first day. Nine students opted not to participate in the study and returned the consent form but remained enrolled in the class. Four students dropped out of the released-time Seminary program to pursue other interests. Of the students who participated in the study, some who were absent on the days the assessments were administered. Most of the absentees were able to take the assessments the following day. However, there were a few students who took the pretests but opted out of the posttests. The amount of missing data from these students was small (17 cases out of more than 200). The total number of participants who completed all the assessments was 209. There were 104 participants in the treatment group and 105 in the comparison group.

All three measures were administered by the researcher and the cooperating teacher as a pretest to establish a baseline for measurement. The pretest was administered during class time at the end of the second week in the fall semester of the 2010-2011 school year. The same three instruments were administered again at the end of the eight week study period, which coincided with the end of the first term of instruction as a post-treatment assessment.

It was anticipated that the three measurements would take approximately 60
minutes for the participants to complete. In reality it took most students more than 80 minutes to complete. The pretests were administered over the course of 2 days. The Student Perception Survey and multiple-choice test were administered on the first day. The Finding Doctrines and Principles in Text was administered on the second day. The same procedure was followed with the posttest. The answers were recorded on standard Scantron answer sheets. Participants in the study were identified by class assignment and student number; the results of all tests and surveys were held confidential. Participants and their parents were assured the results of the tests would not affect their grades.

**Statistical Analysis**

Analysis of the results from the pre/posttest scores for both study groups was conducted using the SPSS® analysis program student version 15.0. Descriptive analysis examined distribution of measures of central tendency and standard deviation for each group on both the pre and posttest. Group gains scores were of particular interest for this study, pretest and posttest gain scores for each group were evaluated using a one-way analysis of variance (ANOVA) to evaluate gains between the treatment and comparison groups. A comparison of mean gain scores between classes was also evaluated.

It was hypothesized the use of graphic organizers would cause a significant difference in the outcome scores between the two study groups. Statistical significance was set at $\alpha = .05$ in order to reject the null hypothesis for research questions one and two. For research question number three, percentages from pretest scores from the student perception survey were compared to the participant’s posttest scores in order to
detect changes in the students’ perceptions of their ability to identify doctrines and principles.

**Summary**

The purpose of this study was to evaluate the usefulness of graphic organizers as a tool to enhance students’ comprehension of difficult scriptural text. This study employed a repeated measure, quasi-experimental design. Participants were 209 ninth-grade LDS Seminary student enrolled in a released time Seminary program. Data were collected at two different points in time, using two validated measures, a 13 question multiple-choice test, a student perception survey and one experimental measure that was used to evaluate students’ ability to identify doctrines and principles in scriptural text. The assessments were administered once at the beginning of the 8-week study and once at the end of the study.
CHAPTER IV

RESULTS AND FINDINGS

This study investigated the influence of graphic organizers on ninth-grade LDS students’ ability to comprehend scriptural text, as well as their ability to recognize and recall doctrines and principles from scriptural text. The study was conducted by collecting quantitative and qualitative data using instruments developed by the Department of Research of the Seminary and Institute of Religion. Assessments including a thirteen question multiple-choice test of gospel doctrines and principles, an identifying doctrines and principles in text and a student perception survey were used to investigate the research questions. Descriptive statistics and analysis of variance were used to evaluate the information gathered with the assessments.

Results

Multiple Choice Principles and Doctrines Test

The Multiple Choice Principles and Doctrines test consisted of 13 questions that were designed to assess participants’ ability to recall material from class study or to recognize doctrines and principles in scriptural text (Appendix A). The 13-question test yielded a possibility of 16 correct responses. Reliability of this multiple-choice test has been established as .87 (Cronbach’s alpha). The participants’ scores ranged from 0 to 15. Distribution of the participant responses at both pre and posttest were normal as shown in Figure 1. Skewness and kurtosis values for both groups were less than 1 at both pretest and posttest. The box plots in Figure 2 indicate the changes in the scores of the
Figure 1. Distribution of responses of the multiple-choice tests.

Figure 2. Changes in scores of multiple-choice tests between groups at pre/posttest.

participants in the two treatment groups at both pre- and posttest. Descriptive statistics for the two treatment groups at pretest and posttest are found in Table 2.

A 2 x 2 ANOVA was conducted to evaluate the effects of instructional use of graphic organizers during the 8-week study. The dependent variable was student gain scores on the Multiple Choice Principles and Doctrines test. The first factor was instructional group with two levels: (a) instruction using the standard seminary
Table 2

*Descriptive Statistics for Groups at Pretest and Posttest*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. error mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison</td>
<td>105</td>
<td>7.80</td>
<td>3.36</td>
<td>.328</td>
</tr>
<tr>
<td>Treatment</td>
<td>104</td>
<td>7.50</td>
<td>3.53</td>
<td>.346</td>
</tr>
<tr>
<td>Posttest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison</td>
<td>105</td>
<td>8.23</td>
<td>3.50</td>
<td>.341</td>
</tr>
<tr>
<td>Treatment</td>
<td>104</td>
<td>8.41</td>
<td>3.44</td>
<td>.337</td>
</tr>
</tbody>
</table>

curriculum with the use of teacher generated graphic organizers (treatment group), and (b) instruction using the standard seminary curriculum without the use of graphic organizers (comparison group). The second factor was teacher with two levels: teacher one and teacher two. Results of the ANOVA indicated no significant difference between instructional groups, $F(1,205) = 1.60, p = .21$, partial $\eta^2 = .01$. There was also no significant main effect for teacher, $F(1,205) = .01, p = .944$, $\eta = .000$. However, there was a significant interaction between treatment and teacher, $F(1,205) = 6.84, p = .01$. The strength of the teacher/treatment relationship was small as assessed by $\eta^2 = .01$

**Identifying Doctrines and Principles Across Text**

The Identifying Doctrines and Principles in Text assessment was in development by the Department of Research of the Seminaries and Institutes at the time it was used in this study. The assessment was selected as it is used by the LDS Seminary program and because no other validated reading assessment based on scriptural text existed. The
assessment (Appendix B) consisted of reading a passage of scripture from the *Book of Mormon*, underlining certain phrases as prompted by rubric next to the passage that described which doctrines or principles to underline. Once the participant has identified the doctrines, underlined them, and marked them with a number, they transferred those numbers to a Scantron answer sheet, which was then graded by machine. There were 10 possible answers on the test, the participant scores ranged from 0 to 10. Nine fewer students completed the reading assessment. The distribution of scores for the reading pretest and posttest were also normal as indicated in Figure 3. At pretest, the skewness for both groups was less than 1; kurtosis at pretest was -1.27 for the comparison group and -.93 for the treatment group. At posttest, skewness was again less than 1 for both treatment groups while kurtosis was -.95 for the comparison group and -.84 for the treatment group.

Although the purpose of this study was not to investigate the measurement properties of the Identifying Doctrines and Principals Across Text assessment, a test-retest reliability analysis was conducted with this study’s sample ($n = 209$) to initially

![Figure 3. Distribution of identifying doctrines and principles at pre/posttest.](image)
investigate the reliability coefficient of this measure. Reliability means that scores from an instrument are stable and consistent when the instrument is administered at different times (Creswell, 2000). The test-retest analysis uses one version of the instrument, which is administered to the participants twice at different points in time. The reliability measurement is the correlation between the two scores. The resulting Cronbach’s alpha was determined to be .58 on the assessment for this study. A coefficient of .58 is considered too low for validation of test-retest reliability for a test instrument. Thus, results from this measure may not accurately reflect student growth in ability to identifying doctrines and principles across various texts.

The box plots in Figure 4 indicate the changes in reading scores by the participants at both pretest and posttest. The descriptive statistics are shown in Table 3.

A 2 x2 ANOVA was conducted to evaluate the effects of instructional use of graphic organizers during the 8-week study. The dependent variable was student gain scores on the Identifying Doctrines and Principles Across Text test. The first factor was

![Figure 4](image-url)

*Figure 4. Changes in scores of the identifying doctrines and principles test by group at pre/posttest.*
Table 3

*Descriptive Statistics of the Identifying Doctrines and Principles*

*Across Text Test by Group*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. error mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison</td>
<td>104</td>
<td>3.69</td>
<td>2.60</td>
<td>.25</td>
</tr>
<tr>
<td>Treatment</td>
<td>103</td>
<td>4.18</td>
<td>2.42</td>
<td>.24</td>
</tr>
<tr>
<td>Posttest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison</td>
<td>99</td>
<td>4.55</td>
<td>2.67</td>
<td>.27</td>
</tr>
<tr>
<td>Treatment</td>
<td>101</td>
<td>4.45</td>
<td>2.60</td>
<td>.26</td>
</tr>
</tbody>
</table>

Instructional group with two levels: (1) instruction using the standard seminary curriculum with the use of teacher generated graphic organizers (treatment group), and (2) instruction using the standard seminary curriculum without the use of graphic organizers (comparison group). The second factor was teacher with two levels: teacher one and teacher two. Results of the ANOVA indicated no significant difference between instructional groups, $F(1, 194) = 1.46, p = .23$, partial $\eta^2 = .007$. There was also no significant main effect for teacher, $F(1,194) = .39, p = .53$, partial $\eta^2 = .002$. No significant difference was found for teacher/treatment interaction with, $F(1,194) = .25, p = .62$, partial $\eta^2 = .001$

**Student Perception Survey**

The Student Perception Survey was used to evaluate how students felt about their personal abilities to read and comprehend scriptural text (Appendix C). The statements were rated on 5-point Likert scale from 1 to 5 with 1 = disagree and 5 = completely
agree. Statement numbers 5 and 8 were selected for analysis for this study because they related directly to how the participants felt about their ability to understand, scriptural text and their confidence in identifying doctrines and principles in scriptural text. Statement 5 was, “Because of what I have learned in this class, I find the scriptures are easier to understand.” Statement 8 was, “Because of what I have learned in this class, I know I can find doctrines and principle in the scriptures.” Histograms for both pretest and posttest survey results compare answer distributions to statement 5 (Figure 5) before and after the study. An analysis of how the participants responded to statement 5 by frequency percentage at pretest and posttest are shown in Table 4.

As shown in Table 4, the number of participants selecting “disagree” on statement Five drops from 13 to 0, while the number of participants selecting completely agree increases from 58 to 75. Histograms for pretests and posttests compare answer distributions for question eight (Figure 6) before and after the study. As shown in Table 5, the number of participants selecting “disagree” for statement 8 dropped from 15 to 4 between the pretest and the posttest. The numbers of students in some level of agreement

![Figure 5](image_url)

*Figure 5. Distribution of responses to statement 5 at pretest and posttest.*
Table 4

Responses to Statement 5 by Frequencies and Percentages

<table>
<thead>
<tr>
<th>Rank</th>
<th>Pretest frequency</th>
<th>Pretest percent</th>
<th>Posttest frequency</th>
<th>Posttest percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>13</td>
<td>6.2</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Slightly disagree</td>
<td>15</td>
<td>7.6</td>
<td>14</td>
<td>6.7</td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>27</td>
<td>12.9</td>
<td>28</td>
<td>13.4</td>
</tr>
<tr>
<td>Agree</td>
<td>87</td>
<td>41.6</td>
<td>84</td>
<td>40.2</td>
</tr>
<tr>
<td>Completely agree</td>
<td>58</td>
<td>27.7</td>
<td>75</td>
<td>35.9</td>
</tr>
<tr>
<td>Missing</td>
<td>9</td>
<td>4.0</td>
<td>8</td>
<td>3.8</td>
</tr>
<tr>
<td>Total</td>
<td>209</td>
<td>100</td>
<td>209</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 6. Distribution of responses to statement 8 at pretest and posttest.

increased slightly. However, the number of participants in the highest level of agreements for statement 8 remained about the same. These results indicate that the participants have a generally positive view of their ability to both understand scriptural text and identify doctrines.

The results of the survey shown in Table 4 and Table 5 illustrated interesting
Table 5

Responses to Statement 8 by Frequencies and Percentages

<table>
<thead>
<tr>
<th>Rank</th>
<th>Pretest frequency</th>
<th>Pretest percent</th>
<th>Posttest frequency</th>
<th>Posttest percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>15</td>
<td>7.2</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>Slightly disagree</td>
<td>20</td>
<td>9.6</td>
<td>15</td>
<td>7.2</td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>32</td>
<td>15.3</td>
<td>51</td>
<td>24.4</td>
</tr>
<tr>
<td>Agree</td>
<td>72</td>
<td>34.4</td>
<td>68</td>
<td>32.5</td>
</tr>
<tr>
<td>Completely agree</td>
<td>62</td>
<td>29.7</td>
<td>63</td>
<td>30.1</td>
</tr>
<tr>
<td>Missing</td>
<td>8</td>
<td>3.8</td>
<td>8</td>
<td>3.8</td>
</tr>
<tr>
<td>Total</td>
<td>209</td>
<td>100.0</td>
<td>201</td>
<td>100.0</td>
</tr>
</tbody>
</table>

changes in the number of participants who disagreed with statements 5 and 8 from the pretest survey to the posttest survey. The results also indicated an increase in the number of participants who completely agreed with statement 5 from pretest to posttest survey. These dramatic changes prompted further analysis to investigate a fourth question, “Did graphic organizers have an effect on the comprehension abilities of students who responded most negatively or most positively to statements 5 and 8?” Question number 12 asked participants to explain their responses to statements 5 through 11. Pretest and posttest survey answers were reviewed for the participants that selected “disagree” for statements 5 and 8.

The 15 participants who disagreed with statement 8 included the 13 participants who also disagreed with statement 5. The main reason students provided for disagreeing with the statements was that they “hadn’t done anything yet” and had “no basis to judge whether or not the instruction would make a difference” (see Table 6).
Responses for participants who selected “strongly agree” on statements 5 and 8 were also analyzed for content. Table 7 illustrates the participants’ responses to question 12 concerning the reasons why they selected “completely agree” with statements 5 and 8. The responses from the participants on the pretest survey reflected a positive attitude and could be divided into the five general categories listed in the table. The responses at posttest were similar in substance to those in the pretest; two other categories were added from the posttest survey, each reflecting a positive experience with their instructional experience. The numbers in parenthesis indicate the number of participants who responded with that phrase or one similar to it.

Additional analyses were conducted to investigate potential impact of the use of graphic organizers on student attitudes for students that selected a 1 (disagree) or a 5 (completely agree) on the 5-point Likert scale Student Perception Survey for statements 5 and 8. For the small group ($n = 15$) that represented the participants whose response was the most negative, ANOVA results for the multiple-choice test were similar instructional groups were nonsignificant, $F(1, 14) = .18, p = .15$, and $\eta^2 = .03$. Teacher effect was to
Table 7

Reasons for Responses to Statements 5 and 8 for Participants Who Completely Agree

<table>
<thead>
<tr>
<th>Statement #</th>
<th>Completely agree pretest</th>
<th>Reason for response</th>
<th>Completely agree posttest</th>
<th>Reason for Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>58</td>
<td>I know it will help. (36)</td>
<td>75</td>
<td>Seminary has been good. (35)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>That is how I felt. (14)</td>
<td></td>
<td>That is how I felt. (11)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Because it is true. (8)</td>
<td></td>
<td>Because it is true. (8)</td>
</tr>
<tr>
<td>8</td>
<td>62</td>
<td>63</td>
<td></td>
<td>I have learned a lot. (21)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>That is how I felt. (1)</td>
</tr>
</tbody>
</table>

those of the whole group. On the multiple choice measure, differences between

classifications were nonsignificant, \( F(1, 14) = .05, p = .82, \) and \( \eta^2 = .004. \) For the students that selected a 1 (disagree) on the Student Perception Survey, there was also no significant difference for

instructional group on the Identifying Doctrines and Principles Across Text measure, \( F(1, 12) = .35, p = .57 \) and \( \eta^2 = .03. \) Teacher effect was nonsignificant, \( F(1, 12) = .32, p = .58 \) and \( \eta^2 = .03, \) and no teacher/treatment effects were detected.

For the small group \((n = 17)\) whose responses were the most positive, the
differences between instructional groups were nonsignificant. Results for the multiple-
choice test were, \( F(1, 16) = 1.05, p = .32 \) and \( \eta^2 = .14. \) Teacher effect, \( F(1, 16) = .57, p = .46, \) with \( \eta^2 = .42, \) and teacher/treatment effect, \( F(1, 16) = .57, p = .46 \) and \( \eta^2 = .42, \) were also nonsignificant. Analysis of the results for the Identifying Doctrines and

Principles Across Text for the students that selected a 5 (completely agree) on the Student

Perception Survey indicated there was no significant differences between instructional
groups, \( F(1, 14) = 1.67, p = .23, \) \( \eta^2 = .143. \) A teacher effect was noted \( F(1, 14) = 6.68, p \)
\( = .03, \eta^2 = .40, \) with a teacher/treatment interaction, \( F (1, 14) = 1.38. p = .27 \) and \( \eta^2 = .12. \)

These participants at first appeared to be an anomaly because their responses to the survey statements 5 and 8 were substantially different from the other participants. However, additional analyses to investigate potential impact of the use of graphic organizers on these two small groups of participants indicated there was no significant difference between their scores and those of the other participants. This anomaly was not substantiated by a change in the abilities of the participants to comprehend text or retain material, but rather, indicated a change in the attitude of the participants concerning their instructional experience. On the pretest survey assessment, statements 5 and 8 required the participants to respond to what they expected from their seminary experience. Since this class represented the participant’s first seminary experience, they had nothing on which to base their response. If a participant was one who tended to be somewhat of a pessimist, they would most likely respond in the negative by selecting “disagree” on the survey. On the other hand, if a participant tended to be more of an optimist, they would most likely have responded in a more positive manner by selecting “completely agree” on the survey. These attitudes are reflected in the “reasons for responses” column listed on Tables 6 and 7. On the posttest survey, the results for both statements were more positive indicating an overall positive attitude about the instructional experience.

**Summary**

This study investigated the effect of graphic organizers on ninth-grade LDS seminary students’ ability to understand and recall doctrines and principles from
classroom instruction in scriptural text and their ability to identify doctrines in scriptural
text, utilizing a repeated measures, quasi-experimental design involving 209 ninth-grade
student participants. The participants were randomly assigned to one of two treatment
groups. One group received instruction using graphic organizers with the standard
curriculum and one group received instruction using only the standard curriculum.

Three different measures were employed in order measure the effectiveness of the
graphic organizers intervention: (a) a multiple-choice test, (b) an identifying doctrines
and principles in text test, and (c) a student perception survey. Descriptive statistics
indicated mean gains in both groups, but no significant difference ($p < .05$) could be
detected between the treatment and comparison groups for any of the measures. ANOVA
results for the multiple-choice test indicated no significant difference between
instructional groups, $F (1, 205) = 1.60, p = .21$, partial $\eta^2 = .21$. There was also no
significant main effect for teacher, $F (1,205) = .01, p = .944$, $\eta^2 = .000$. There was a
significant interaction between treatment and teacher, $F (1, 205) = 6.84, p = .01$. The
strength of the teacher/treatment relationship was small as assessed by $\eta^2 = .01$. Results
of the ANOVA for the Identifying Doctrines and Principles Across Text test also
indicated no significant difference between instructional groups, $F (1, 194) = 1.46, p =
.23$, partial $\eta^2 = .007$. There was also no significant main effect for teacher, $F (1,194) =
.39, p = .53$, partial $\eta^2 = .002$. No significant difference could be found between teacher
and treatment with $F (1,194) = .25, p = .62$, partial $\eta^2 = .001$. Additional analyses of
students that selected a 1 (disagree) or a 5 (completely agree) on the 5-point Likert scale
Student Perception Survey also revealed no significant difference in their ability to recall
doctrines and principles or their ability to identify doctrines and principles in text.

The results of this study indicated that measuring the effectiveness of graphic organizers in a fluid classroom environment can prove to be difficult. It also indicated the need for more research into use of graphic organizers with different kinds of text and study situations. This study represents one of the first attempts at quantifying the usefulness of graphic organizers with expository scriptural text. The results obtained in this study resulted only from work that was done in the classroom, no attempt was made to discover or measure what participants did in their own personal study.

Assessments were limited to the three instruments described in the study. While both study groups did exhibit gains in their mean scores for the assessments, neither group significantly outperformed the other. Even though the assessments used in this study were similar to assessments used in other studies, there could be other ways measure how graphic organizers affect students. For example; one of the observations made by the researcher and the cooperating teacher was that the students who used the graphic organizers were more engaged in the text during class time than were those who did not receive the treatment. They also observed that participants in the treatment group tended to reference the text more often in their written work and in class discussions, referring to their own feelings or opinions about the text, rather than what they had heard others say about the text. These observations were noted but not quantified, and may represent another avenue by which the usefulness of graphic organizers can be measured.

Ultimately, the purpose for using graphic organizers is to more effectively engage students in the text itself in a way that enables them analyze and make useful
application of the information contained in the text. With scriptural text this includes assisting the students in making meaningful personal connections with the text that will have an impact on their lives. From their genesis in the early 1960s until now, graphic organizers have a reliable track record for helping students and teachers effectively cope with difficult texts in a variety of learning situations. They are a valuable tool in any teacher’s repertoire of teaching skills and should be used to their best advantage.
CHAPTER V
DISCUSSION OF FINDINGS

The purpose of this study was to investigate the usefulness of graphic organizers to enhance ninth-grade LDS seminary students’ ability to understand and use scriptural text. The specific questions this study sought to answer were as follows.

1. What is the influence of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to understand and recall doctrine and principles from scriptural text?

2. What is the influence of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to identify and analyze religious doctrines and principles in scriptural text across texts?

3. What are the students’ opinions about using graphic organizers to analyze and study scriptural text?

Three different measures were used to evaluate the research questions: (a) a 13-question multiple-choice test concerning various gospel doctrines; (b) a reading assessment to identify gospel doctrines and principles in text; and (c) a survey concerning students perceptions about their scripture reading skills and seminary learning experience. The study was conducted for a period of eight weeks during the first term of the 2010-2011 school year. The study involved 209 ninth-grade seminary students in two instructional conditions, one group receiving graphic organizer study intervention in addition to the standard seminary curriculum and one group receiving the standard curriculum without the use of graphic organizers. Classes were randomly assigned to one
of these two groups. Two teachers were involved in the study, the researcher and one cooperating teacher.

Influence of Graphic Organizers on Students’ Ability to Understand and Recall Doctrine and Principles from Scriptural Text

The first question this study sought to answer was: What is the influence of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to understand and recall doctrine and principles from scriptural text? The 13-question multiple-choice test was the measure for this question. The analysis at pretest revealed there was little difference between scores; the comparison group mean was 7.80, while the treatment group mean was 7.50. This difference was not statistically significant, $p = .21$. The means at posttest were also very similar with the comparison group $M = 8.23$ and the treatment group $M = 8.41$. Although both groups exhibited a mean gain between pretest and posttest, the results of the ANOVA analysis at posttest indicated no significant difference between instructional groups for mean gain scores, $F (1, 205) = 1.60, p = .21$, partial $\eta^2 = .005$. However, there was a significant interaction between treatment and teacher $F (1, 205) = 6.84, p = .01$. The strength of the teacher/treatment relationship was small as assessed by $\eta^2 = .01$. Because the findings were statistically nonsignificant at $\alpha = .05$, the null hypotheses were retained.

In previous studies measuring the effects of graphic organizers (Kim et al., 2004; Robinson, 1998; Robinson et al., 2006), the researchers used similar multiple-choice tests
to measure both comprehension and recall of material. These researchers created their tests specifically to measure the exact content of the graphic organizers that were presented in the classroom experience. Katayama and Robinson (2000) found the spatial arrangement of material in graphic organizers proved to be beneficial in assisting students to remember new information. Another reported benefit of graphic organizers is that they can help students integrate different reading skills such as identifying facts, drawing conclusions and making inferences (Kirylo & Millett, 2000).

In this study, the multiple-choice test was designed to measure both recall and analytical questions. Recall questions were used to determine the effect on a students’ ability to retain new material over time, both short term and long term. This study utilized twelve graphic organizers that were presented to the participants over a period of eight weeks (22 class sessions). Each graphic organizer represented a new concept or doctrine. Of those 12 graphic organizers, 5 were in the form of framed outlines (Appendix E, Figure E-3); 4 were concept maps (Appendix E, Figure E-2), 1 compare/contrast columns, 1 timeline, and 1 graphic illustration (Appendix E, Figure E-4). The framed outline format is one that is designed to help students analyze text more deeply by requiring the students to look for elements in the text and make personal connections with the characters or ideas in the text and will be discussed in the next section. Concept maps are another effective form of graphic organizers and are generally useful for organizing ideas and concepts in ways that provide a tie between new knowledge and ideas to previously learned ideas or knowledge (Alvermann, 1981; Struble, 2007). The compare/contrast column organizer was a character assessment between different people in church
history as their individual experiences revealed different traits through their reactions to events in scriptural and historical accounts. This organizer allowed the participants a more personal view of some of the major characters in the history of the LDS church. The timeline organizer was designed to help the students understand the historical framework for the development and movements of the church from its inception to the present day. Analysis of the questions from the multiple-choice test showing the type of question (recall and analytical), the graphic organizer that was used (framed outline, graphic illustration, concept map), and which group (treatment or control) utilized the graphic organizers is found in Table 8.

One graphic illustration (Appendix E, Figure E-4) was part of the standard curriculum and was used for both groups. It was the only graphic organizer included in

Table 8

*Analysis of Questions from the Multiple-Choice Test*

<table>
<thead>
<tr>
<th>Question</th>
<th>Type of question</th>
<th>Type of graphic organizer</th>
<th>Treatment group</th>
<th>Comparison group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Analysis of text</td>
<td>Concept map</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Analysis of text</td>
<td>Concept map</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Recall</td>
<td>Concept map</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Recall</td>
<td>Graphic illustration</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Analysis of text</td>
<td>Graphic illustration</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Recall</td>
<td>Graphic illustration</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Recall</td>
<td>Graphic illustration</td>
<td>Yes</td>
<td>Yes</td>
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<td>8</td>
<td>Recall</td>
<td>Graphic illustration</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>9</td>
<td>Recall</td>
<td>Graphic illustration</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>Recall/relationships</td>
<td>Concept map</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>11</td>
<td>Recall</td>
<td>Concept map</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>12</td>
<td>Recall</td>
<td>Graphic illustration</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>13</td>
<td>Analysis of text</td>
<td>Framed outline</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
the standard seminary curriculum for the topics covered during the time of the study. This particular graphic illustration was used for two full class periods during the first two days of instruction and represents one of the major building blocks for doctrinal understanding and has been referenced frequently throughout the school year. Unfortunately, this resulted in both groups being exposed to an almost equal number of graphic organizers for the questions represented by the multiple-choice test. This is most likely the reason that no significant difference was found between the instructional groups on the multiple-choice test.

There are other plausible reasons for the findings of nonsignificant differences in the multiple-choice test. First, the questions in the pretest and posttest were not custom created to fit the information presented in each of the graphic organizers. The questions that were used in this study were selected from a pool of questions created by the Seminaries & Institutes Research Department. These questions were very general and are used as pretests and posttests for all courses of study in the Seminary and Institute program. The thirteen questions presented in this study were selected because they were validated and were somewhat related to the doctrinal topics covered for the duration of the study, but they did not represent an exact match. Thus, this study investigated a broader assimilation of content knowledge than previous studies (Kim et al., 2004; Robinson, 1998; Robinson et al., 2006). A second factor that the participating teachers noted was the number of concepts and graphic organizers presented during the limited time of the study (12 graphic organizers in 8 weeks on different subjects) may have been overwhelming to the students.
A third factor which may have affected the outcome of the multiple-choice test was the idea that some of the student participants have about seminary in general. The name of the class is *released-time* seminary. In the minds of some seminary students, ‘released-time’ implies being released from school and the pressures and responsibilities associated with school, including taking tests. Even though this was the first time any of these students had ever attended seminary, the cultural tradition of seminary being a class where the pressures of school do not exist still persist. Some participants were bold enough to offer the opinion that in a religion class “it is more about how you feel about things than what you score on a test.” In addition, all participants were assured the testing would not affect their grades (and it did not); thus, there is the possibility that there were some who did not take the test seriously enough to do their very best. Overall, although both groups did experience growth over the course of the 8-week study, the results of the multiple-choice test indicated no significant difference between the two study groups, possibly due to some mitigating factors.

**Influence of Graphic Organizers on Ability to Identify and Analyze Doctrines and Principles Across Text**

This study also investigated the question: What is the influence of the use of graphic organizers on ninth-grade LDS Seminary students’ ability to identify and analyze religious doctrines and principles across scriptural text? A comparison of the pretest means scores indicated that the treatment group had a slightly higher mean ($M = 4.18$) than the comparison group ($M = 3.69$) at the beginning of the study, which was
nonsignificant, \( p = .17 \). Posttest results indicated that both groups experienced a gain in means; the comparison group \((M = 4.55)\) fared a little better than the treatment group \((M = 4.45)\). However, this difference was also nonsignificant, \( p = .17 \). The results of ANOVA analysis of group mean gain scores was nonsignificant at \( \alpha = .05 \). No difference could be detected between the two instructional groups, and the null hypothesis was retained.

The differences between the treatment groups for *The Identifying Doctrines and Principles in Text Test* were statistically nonsignificant. It appears there was not sufficient variance in the scores between the groups to adequately evaluate the graphic organizer intervention. As has been previously described, the instrument used in this study to analyze students’ ability to identify and analyze doctrines and principles in text is experimental and lacks established reliability. The lack of reliability may have also contributed to the findings of nonsignificance. The purpose of the assessment in this study was so see if the participants would be able to learn how to analyze a text and recognize separate doctrines or principles from the body of the text then form them into cohesive explicit phrases that reflected an understanding of the text rather than recall of facts from a text. The text in this assessment was different from the text used in the class for the purpose of investigating transferability of the graphic organizer skills to a different scriptural text.

In an effort to promote students’ ability to identify doctrines and principles in text and to transfer these skills to new text, four framed outlines were used during the course of the study. The framed outline graphic organizer is one that is designed to help students
analyze text more deeply by requiring the students’ to look more deeply for elements in the text and make personal connections with the characters or ideas in the text (Baxendell, 2003; Langan-Fox et al., 2000). All four framed outline graphic organizers were created by the researcher and the cooperating teacher. The graphic organizers included headings for major sections. The students were required to complete the body of the organizer by making inferences, drawing conclusions or writing their own ideas (Appendix E, Figure E-1). Open ended questions such as, “How did Joseph feel about his situation or what did Joseph do about his dilemma?” were used as guides to help prompt thinking, reading and writing. To scaffold student use of graphic organizers, the first two graphic organizers were completed as whole class activities with directions from the teacher and class discussion. The third graphic organizer was completed as a small group activity with the teacher giving specific help to groups as needed. The fourth was a paired activity with the teacher giving assistance to pairs who needed help. The process of reading, evaluating and writing was very difficult work for many of the participants.

The most plausible hypothesis for why the difference in the means between the groups was statistically nonsignificant was the cumbersome nature of the measurement instrument itself as described in Chapter IV. The passage used in this assessment was not particularly lengthy, but it was complex. The six-verse passage from the Book of Mormon contained nine separate doctrinal phrases for the participants to identify.

It should also be noted that no graphic organizer was created specifically for the text that was used in the assessment instrument as this measure was designed to investigate transferability of reading skills across different kinds of text. The participants
saw the text presented in this assessment only on the pretest and posttest, it was never referenced in class during the study. One of the desired outcomes of the study was to identify evidence of the participants’ ability to apply graphic organizer skills to a different text without being prompted to do so.

**Transferability of Graphic Organizer Use**

In this study, the participants became proficient at filling in the graphic organizer as they read or took notes, without really thinking about “why” they were filling in the missing information. Teaching students to understand how to better analyze the text, and then decide how to present the information from the text in some form of graphic organizer required much more time than was allotted for in this study. The results of the reading tests would indicate that the participants in this study did not make sufficient connections as to “why” they were using graphic organizers.

During the day-to-day graphic organizer instruction, participants were willing to write answers to the prompts provided by the teachers, but most students required a significant amount of teacher support and interaction. In a review of all student responses for the “Identifying Doctrines in Text” assessment, not one of the participants had made a written effort to analyze the text using any form of graphic organizer that had been presented in the classroom instruction. With practice on only four different framed outlines, and without prompts from the teachers, the participants may not have thought to make some kind of graphic organizer to analyze the text themselves. In Alvermanns’ (1981) study of compensatory effect of graphic organizers on descriptive text, students
were shown a graphic organizer and instructed to make connections from the text to the graphic organizer while they read, by mental process, not writing anything down.

Alvermann theorized that the graphic organizer influenced the participants encoding process and provided an anchor on which to hang concepts and forced the participants to analyze the text more deeply. However, the participants in this study were encouraged to review their notes the day before and the day of the posttest, but they were not told to use a graphic organizer as a tool for analysis of the test text.

Using graphic organizers as a reading strategy can be useful. However, getting students to change how they normally go about the business of reading and analyzing text is easier said than done. The students in this study became adept at utilizing prepared graphic organizers to sort out ideas, doctrines and principles. However, they did not show much interest in creating their own graphic organizers to fit different types of text. The next step to independent learning is to get students to recognize ways by which they can analyze a particular text by making use of a graphic organizer.

**Students Opinions about Using Graphic Organizers to Analyze and Study Scriptural Text**

The answer this question is based on qualitative data obtained from the results of the student perception survey and from comments written by the students concerning the study and their ability to understand scriptural text. The two statements that were analyzed from the student perception survey, statement 5 and statement 8, were both about participants’ opinion as to whether the skills they learned in seminary class helped
them understand the scriptures and whether or not they felt more confident in their ability to identify doctrines in scriptural text.

There were changes in percentages of participants who felt that what they had learned in class made a difference in their ability to understand scriptural text. The results from the survey statement 5, “Because of what I have learned in this class, I find the scriptures are easier to understand,” indicate an overall gain of 7% on how the participants felt about their abilities to understand the scriptures because of what they had learned in class, from 72% at pretest to 79% at posttest.

The survey statement 8 asked the participants to rate their opinions on whether or not they “know” they can identify doctrines and principle in text. The number of participants who felt more confident increased, as evidenced by a decrease in the percentage of students who selected “disagree” or “slightly agree” from 17.5% at pretest to 9.5% at posttest. At the other end of the scale, the response for this question was less confident with 66.6% of the participants indicating a strong agreement by selecting “agree” or “completely agree” on the pretest, which fell to 65.1% on the posttest. The largest gain was in the “somewhat agree” ranking, which increased from 15.9% at pretest to 25.4% at posttest.

Several open ended questions were also included on the student perception survey. Unfortunately, not many participants answered these questions. For example, question number 14 for the treatment group asked the participants if the graphic organizers helped them understand and identify doctrines and principles. Of the 67% (67/104) who responded to the question, 30 were very positive in their responses, 17 said
“they kind of helped,” 10 said “the graphic organizers didn’t help at all” (three of the 10 said “graphic organizers were too much work”), and 10 said “they didn’t know if they helped.”

However, the overall positive results of this section of the study were encouraging. The students began the study with a very optimistic point of view about being able to read and understand scriptural text. By the end of the study, they were still very positive about what they had learned. The small decline in the number of students who felt confident about identifying doctrines and principles in text may have been due to the reality that they did not really know what they were looking for in the scriptures before. It may have shaken their confidence just a little once they began to see how much there was to the text.

**Conclusions**

Scriptural text is difficult text for students to comprehend as it contains every level of difficulty described by Steiner’s (1978) hierarchy of difficult text. What the researcher attempted to do in this study was to introduce a change in the way students interact with difficult text through the use of graphic organizers. Robinson (1998) described difficulties associated with graphic organizer research to include: (a) lack of consensus on what constitutes a graphic organizer; (b) extensive use of facts as a dependent measure; (c) limited use of relations as dependent measures; (d) use of short text passages; (e) use of single organizers with longer text; and (f) use of immediate testing. These problems were manifest in the results of two meta-analyses concerning the
use of graphic organizers. Kim and colleagues (2004) reviewed 21 studies and Gajria, Jitendra, Sood, and Sacks (2007) reviewed 29 studies; both reviewed a wide variety of comprehension instruction, content enhancement including graphic organizer instruction and cognitive instruction strategies. Effect sizes varied widely depending which variables were being tested, which outcomes were being measured, and how and when assessments were made. There was very little consensus among researchers as to what the best measure of the effectiveness of graphic organizers should include. The one factor that all agreed upon was that the more difficult the text, the more need there is for students to have some kind of strategy to cope with it.

Noting Robinson’s (1998) first concern, this study did not seek to differentiate what constitutes a graphic organizer. If there was a way to represent written text in a spatial arrangement with or without a graphic it was used. This study used 12 graphic organizers. Each one was used for a different purpose. For example, four of the graphic organizers were in the form of a framed outline. These were used to cover large sections of text—up to six pages in some cases. The reason for using the framed outline was to help the students get the “big picture” of what was happening in the text, not just isolated facts. Four other graphic organizers used in this study were concept maps. These were used to identify one important concept such as the word “dispensation,” then to identify other ideas from the text that would render the word more memorable with more ideas connected to it. Each of these two examples were indeed graphic organizers, but their classroom application and end result were very different and may require a different type question or analysis to measure their effectiveness.
Robinson’s (1998) second concern was the extensive use of facts as a dependent measure. One of the purposes of this study was to measure participants’ ability to recall facts from text and classroom instruction by use of a multiple-choice test. This study also attempted to determine the participants’ ability to identify doctrines and principles in text after receiving graphic organizer instruction. The instrument for this aspect of the study was difficult to use for both the participants and the researcher; the use of factual recall as a dependent variable makes assessments much easier to conduct and evaluate as opposed to written retell or one-on-one oral free retell assessments. Of course, true comprehension of a text is more than the ability to recall facts.

Robinson’s (1998) third concern noted the limited use of relations as a dependent variable. One of the purposes for using graphic organizers is to help students understand relationships between concepts and the overall structure of the text. The focus of an assessment should be more on “what” is learned rather than how “much” learned. Although graphic organizers have been shown to assist students with factual recall, their real advantage is to organize concepts and demonstrate their relationships with each other. The instruments used in this study did not allow this type of evaluation.

Robinson’s (1998) fourth concern was the use of short passages of text in comprehension assessments. This practice is convenient for researchers because it is important to use passages students can manage in given amount of time. In actual classroom experience students and teachers generally need to manage much larger passages. For example, during this study students read over 120 pages of text about many different concepts in over 16 instructional sessions. When researchers use short text
passages, the results do not truly reflect authentic instruction.

Robinson’s (1998) fifth concern was using a single organizer with larger sections of text. This study utilized the framed outlines to cover larger sections of text; time did not permit the introduction of more than one organizer in some of the longer sections. However, in this study some of the longer sections were selected for use with a single framed outline graphic organizer because the text was narrative rather than expository. The use of more than one graphic organizer with any text would depend upon the number of difficult concepts being presented in the text.

Robinson’s (1998) sixth concern was the use of immediate testing. In many of the studies that were reviewed, the testing on the effectiveness of the graphic organizer took place during the same class period in which the material was presented, with test intervals ranging from one to fourteen days. Effectiveness values for these tests also varied greatly. For this study, the pretest and the posttest were separated by 8 weeks. No intermediate assessments were administered, although some reviews were conducted in the form of oral question and answer games.

This study was certainly representative of some of the challenges associated with graphic organizer research. The quantitative results for the multiple-choice test and the Identifying Doctrines and Principles Across Text test revealed there was no significant difference between the two instructional groups. A finding of no significant difference between study groups is not unusual in graphic organizer research (Gajria et al., 2007; Kim et al., 2004).

The positive qualitative data collected from the participants in the study indicated
that students have gained some confidence in their ability to comprehend what they are reading and how they can apply it in their lives. Observations of the participants by the teacher and researcher also indicated a positive interaction between the participants and the text. Too often students equate reading with nothing more than the ability to say words in the order in which they are printed on a page. The use of graphic organizers helped students see the “bigger picture” contained in the text and assisted them to make more personal connections with the text.

**Instructional Observations**

During the study, the teachers noted their observations as they taught and conducted fidelity observations regarding instruction using graphic organizers. The teachers noted it is difficult to get people to change reading habits or attitudes. Reading is a large part of the LDS Seminary experience. Some participants had already decided the text was too difficult for them to understand; they would read, but generally made only token efforts to apply the graphic organizer instruction in their personal study. Second, most participants in the treatment group did enjoy using the graphic organizers in class, working together to make sense of a particular text. However, it seemed they were more interested in merely completing the graphic organizer rather than reflecting on the meaning of the text. Based on these observations, it appears that the graphic organizers were more useful to this group of students as a note taking strategy than as a reading strategy, especially when applied to larger sections of text.

The teachers also noted that the framed outlines were the least popular with
students, perhaps because this style of graphic organizer usually required more reading and analyzing of the text. The most popular graphic organizers were the concept maps perhaps because these graphic organizers used more brain-storming type activities and usually shorter text passages. Thus, teachers may want to consider the difficulty of the graphic organizer and incorporate graphic organizers that are as simple as possible yet help students in comprehending the text.

Significance of the Study

Curriculum and instructional practice is an evolutionary process with new ideas and methods of presentation coming to the forefront continually. It is important that teachers have as many tools as possible to help students understand and make use of the content of their text. This is true in every content area and is especially true in religious education, where the text may be more difficult for adolescent readers. Graphic organizers are frequently recommended for use in a variety of instructional settings (Kim et al., 2004; Kirylo & Millett, 2000; Struble, 2007). However, as shown from the literature review conducted for this study, previous research has not investigated the use of graphic organizers with scriptural text. Thus, this study will be an important contribution to the field of research as it extends the investigation of the instructional effectiveness of graphic organizers with scriptural text. Potentially, this could result in modifications of the seminary curriculum to include more prepared graphic organizers with the standard curriculum or for teachers to include graphic organizers during instruction.
Limitations

Limitations associated with the study include the following.

1. The limited amount of time of the experiment. This study was conducted for a period of 8 weeks during twenty-two 80-minute class periods on an A/B alternating schedule. Approximately 127 pages of expository text were read during the study period.

2. The limited number of classes (10) involved in the study. This sample size was adequate, as indicated by power analyses, to show significant differences at the \(d = .05\) effect size. Future studies may consider increased sample sizes to investigate potentially smaller effect sizes or to investigate differences between groups based on student demographics such as ethnicity or English Language Learners.

3. The lack of standardized, norm-referenced assessments to evaluate student performance. The Seminary and Institute program has only recently instituted limited testing of seminary students. Future researchers may have access to a wider variety and greater quantity of validated questions as new reading assessments are being developed by the Seminary and Institute Research Department.

Recommendations for Future Research

This study investigated the effect of graphic organizers on ninth-grade LDS seminary students’ ability to understand scriptural text and recall doctrines and principles in scriptural text and their ability to identify doctrines in scriptural text, utilizing a repeated measures, quasi-experimental design involving 209 ninth-grade student participants. Based on results of this study, the following recommendations are presented
for future studies. First, allow more time for the study. Eight weeks was not enough time for the participants to learn how to independently use graphic organizers. Using graphic organizers over a longer period of time and across many concepts would provide a more accurate measure of the effectiveness of graphic organizers with difficult to read text. For studies focusing on questions of recall a longer study time would give the researcher the opportunity to conduct several assessments over time with multiple concepts. For questions concerning graphic organizers as a textual analysis tool a longer study period would give teachers sufficient time to provide the students more repetition and feedback on how, when and why to use graphic organizers to analyze text, until students can independently use graphic organizers to match the type of text being read.

A second recommendation is to make sure that no graphic organizers are introduced to the comparison group. If this condition cannot be avoided, then it would be wise to ensure that there are sufficient questions on the assessment instruments to give balance to the other graphic organizers used in the instruction. It is also important that the questions in the assessments include something specific from the graphic organizer instruction. In this study, for example, only half of the questions in the multiple-choice test were directly tied to the graphic organizers used during classroom instruction.

Finally, research might be conducted pertaining to how many graphic organizers can be used during a unit of study. Can even good graphic organizers be overused? How many different types of graphic organizers can be introduced during a unit of study without losing effectiveness?

Graphic organizer instruction and research is still gaining traction in many
different educational disciplines. This study sought to discover if graphic organizers can be useful in a religious educational setting teaching scriptural text. Finding the right way to measure the true effectiveness of graphic organizer instruction with scriptural text proved to be a very challenging task. The lack of a reliable instrument for analyzing scriptural text and the many idiosyncrasies surrounding the measuring of reading comprehension combine to make a study of graphic organizers as a reading strategy quite complex.

Future researchers may choose to focus only on how and why recall is enhanced by graphic organizers or they may choose to focus on how graphic organizers facilitate reading comprehension. This study represents a small effort to do both. Graphic organizers represent just one of a number of tools a teacher can use to help students learn more out of their reading. However, as with any skill, learning to use graphic organizers effectively takes time and practice to refine—for the teacher and the student.
REFERENCES


APPENDICES
Appendix A

Pre- and Post-Multiple Choice Basic Doctrine Questions Test
Select one correct option for questions 1-11

1. Which scripture best illustrates that one of the roles of a Prophet is to testify of Christ?
   a. “By the help of the all-powerful Creator…I can tell you concerning your thoughts” (Jacob 2:5)
   b. “Did not Moses prophesy unto them concerning the coming of the Messiah, and that God should redeem his people?” (Mosiah 13:33)
   c. “The judgments will come upon which he [Nephi] has testified unto us” (Helaman 8:9)
   d. “And Malachi, the Prophet who testified of the coming of Elijah” (D&C138:46)
   e. I don’t know

2. “For as death has passed upon all men, to fulfill the merciful plan of the great Creator, there must needs be a power of the resurrection, and the resurrection must needs come unto man by reason of the fall” (2 Nephi 9:6). This verse shows that the fall of Adam was ____________.
   a. part of the Plan of Salvation
   b. not expected to happen in the Plan of Salvation
   c. an adaptation to the Plan of Salvation
   d. a direct opposition to the Plan of Salvation
   e. I don’t know

3. Which Scripture best describes the beginning of a dispensation?
   a. The keys of the Kingdom of God are committed unto man on earth, and from thence shall the gospel roll forth (D&C 65:2)
   b. The Spirit of Christ is given to every man, that he may know good from evil (Moroni 7:16)
   c. I will give them one heart, and…put a new spirit within you (Ezekiel11:19)
   d. The works, and designs, and purposes of God cannot be frustrated (D&C 3:1)
   e. I don’t know

4. In the scriptures we learn that blessings from God are always dependent upon which principle?
   a. Obedience to the law upon which it is based.
   b. Being a baptized member of the church.
   c. Our desires for obtaining blessings
   d. Our needs for a blessing.
   e. I don’t know.
5. What part of our eternal existence is Alma referring to when he says, “Now concerning the state of the soul between death and the resurrection?” (Alma 40:11)
   a. Mortal life
   b. The resurrection
   c. The post-mortal spirit world
   d. The pre-mortal spirit world
   e. I don’t know

6. The results of the _____________ made it possible for us to be tested by the difficulties of life and the temptations of the adversary.
   a. Restoration of the gospel
   b. Fall
   c. Atonement
   d. Apostasy
   e. I don’t know

7. To what gospel topic is this passage referring? “That they can die no more; their spirits uniting with their bodies, never to be divided” (Alma 11:45).
   a. Eternal life
   b. Angels
   c. Celestial glory
   d. The resurrection
   e. I don’t know

8. All the spirits in spirit prison remain there ______________.
   a. forever
   b. temporarily
   c. for 100 years
   d. until the Second Coming
   e. I don’t know

9. According to the following verse, how many keys does the Aaronic Priesthood hold? “Upon you my fellow servants, in the name of Messiah, I confer the Priesthood of Aaron, which holds the keys of the ministering of angels, and of the gospel of repentance, and of baptism by immersion for the remission of sins; and this shall never be taken again from the earth, until the sons of Levi do offer again an offering unto the Lord in righteousness” (D&C 13).
   a. One
   b. Two
   c. Three
   d. Four
   e. I don’t know
10. What is different about the prophets in Column A when compared to the prophets in Column B? The prophets in Column A were ____________ while those in Column B were not.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noah</td>
<td>Isaiah</td>
</tr>
<tr>
<td>Joseph Smith Jr.</td>
<td>John the beloved</td>
</tr>
<tr>
<td>Moses</td>
<td>Gordon B. Hinckley</td>
</tr>
<tr>
<td>Abraham</td>
<td>Joshua</td>
</tr>
</tbody>
</table>

a. given the priesthood keys of the kingdom
b. the heads of dispensations
c. told to perform miracles
d. given the priesthood by angels
e. I don’t know

11. The Great Apostasy lasted until the restoration which began when _________.
   a. the Saints came to Utah and built the Salt Lake Temple
   b. the Joseph Smith translation of the Bible restored plain and precious truths
   c. the Father and the Son appeared to Joseph Smith
   d. Joseph Smith showed the gold plates to the Three witnesses
   e. I don’t know

Section II

Please select all correct answers

12. Why is marriage between a man and a woman central to the Plan of Salvation?
   a. Having a family is the only way we contribute to the building of the Church.
   b. Children are entitled to birth within the bonds of matrimony.
   c. Marriage is the only way God’s children learn to serve each other.
   d. Marriage is a fundamental step to becoming like Heavenly Father.
   e. I don’t know

13. Which Scriptural phrases refer to the Holy Ghost?
   a. Sealed by the Holy Spirit. (D&C 132:7)
   b. The Comforter. (John 14:6)
   c. The Spirit of God was upon him. (1 Samuel19:23)
   d. A broken heart and contrite spirit. (Job10:18)
   e. I don’t know
Appendix B

Identifying Doctrines and Principles in Scriptural Text Test
Section 1: Identify Doctrines and Principles in Text

Instructions: Underline doctrines and principles in the scripture passage.

Example:

Doctrine and Principles to Underline
1. Underline the phrase* that teaches what faith is and put a number 1 next to the last word you underlined.

*BY PHRASE WE MEAN MORE THAN THREE WORDS.

Scripture Passage: Ether 12:6

6 And now, I, Moroni, would speak somewhat concerning these things; I would show unto the world that faith is things which are hoped for and not seen; wherefore, dispute not because ye see not, for ye receive no witness until after the trial of your faith.

Doctrines and Principles to Underline in the Scripture Passage BELOW

1. Underline ONE phrase* that teaches about the purpose of this life and put a number 1 next to the last word you underlined.
2. Underline ONE phrase that teaches what immortality is and put a number 2 next to the last word you underlined.
3. Underline THREE phrases that teach what would have happened if there had been no Atonement and put a number 3 after the last word you underlined.
4. Underline ONE phrase that teaches why justice is so important and put a number 4 after the last word you underlined.
5. Underline THREE phrases that tell us about the effects of the Fall and put a number 5 after the last word you underlined.
6. Underline ONE phrase that teaches what the Atonement accomplished and put a number 6 after the last word you underlined.

SCRIPTURE PASSAGE: ALMA 42:9-15
9 Therefore, as the soul could never die, and the fall had brought upon all mankind a spiritual death as well as a temporal, that is, they were cut off from the presence of the Lord, it was expedient that mankind should be reclaimed from this spiritual death.

10 Therefore, as they had become carnal, sensual, and devilish, by nature, this probationary state became a state for them to prepare; it became a preparatory state.

11 And now remember, my son, if it were not for the plan of redemption, (laying it aside) as soon as they were dead their souls were miserable, being cut off from the presence of the Lord.

13 Therefore, according to justice, the plan of redemption could not be brought about, only on conditions of repentance of men in this probationary state, yea, this preparatory state; for except it were for these conditions, mercy could not take effect except it should destroy the work of justice. Now the work of justice could not be destroyed; if so, God would cease to be God.

15 And now, the plan of mercy could not be brought about except an atonement should be made; therefore God himself atoneth for the sins of the world, to bring about the plan of mercy, to appease the demands of justice, that God might be a perfect, just God, and a merciful God also.

*BY PHRASE WE MEAN MORE THAN THREE WORDS.*
Appendix C

Identifying Doctrines and Principles Student Survey
Pre-treatment survey for all participants and post-treatment for comparison group

**THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS**

**Identifying Doctrines and Principles**

Please indicate your response by completely filling in one bubble per question with a dark pen or pencil (not a red one) like this ☐, not like this ☐.

I understand that my honest responses to these questions:

1. Are meant to help improve the teaching and learning experience in seminary. Yes ☐ No ☐
2. Should be based on what I have experienced in my current seminary class. Yes ☐ No ☐
3. Will be kept anonymous. My teacher will not be able to trace my comments back to me. Yes ☐ No ☐
4. Will not get me or my teacher into any trouble nor earn my teacher a promotion. Yes ☐ No ☐

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Slightly Agree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Completely Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. As a result of what I have learned in this class, I find the scriptures are easier to understand.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Because of this class, I find that the principles and doctrines in the scriptures are very clear to me.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. This class has done a very good job of demonstrating to me how to identify doctrines or principles in the scriptures.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. Because of what I have learned in this class, I know I can find doctrines and principles in the scriptures myself.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. I have many opportunities in this class to find doctrines and principles in the scriptures.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. I receive very helpful feedback from this class about how well I am identifying doctrines and principles in the scriptures.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>11. Because of my experiences in this class, I really understand why it is important for me to be able to identify principles in the scriptures.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

12. Explain why you responded the way you did to questions 5–11.

13. Describe a time in this class when you were identifying doctrines and principles in the scriptures.

14. Please offer any suggestions for how this class could be improved to help future students identify doctrines and principles in the scriptures (use the back of this paper if necessary).

---

**Information**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
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<td>☐</td>
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</tbody>
</table>

| Years I have enrolled in Seminary (make same year) | ☐ | ☐ | ☐ | ☐ |

Class ID (ask teacher)

Teacher ID (ask teacher)

Directions to support specialist: Use the TLE Quick Entry Tool to prepare a class summary of responses. Then cut at the dashed line and return the surveys to the teacher so they can review responses 12–14 with no student-identifying information.
Post-treatment survey for treatment group

Identifying Doctrines and Principles

I understand that my honest responses to these questions:

1. Are meant to help improve the teaching and learning experience in seminar.
2. Should be based on what I have experienced in my current seminar class.
3. Will be kept anonymous. My teacher will not be able to trace my comments back to me.
4. Will not get me or my teacher into any trouble nor earn my teacher a promotion.

5. As a result of what I have learned in this class, I find the scriptures are easier to understand.
6. Because of this class, I find that the principles and doctrines in the scriptures are very clear to me.
7. This class has done a very good job of demonstrating to me how to identify doctrines or principles in the scriptures.
8. Because of what I have learned in this class, I know I can find doctrines and principles in the scriptures myself.
9. I have many opportunities in this class to find doctrines and principles in the scriptures.
10. I receive very helpful feedback from this class about how well I am identifying doctrines and principles in the scriptures.
11. Because of my experiences in this class, I really understand why it is important for me to be able to identify principles in the scriptures.

12. Explain why you responded the way you did to questions 5–11.

13. Describe a time in this class when you were identifying doctrines and principles in the scriptures.

14. How has the use of graphic organizers affected your ability to identify and understand gospel doctrines and principles? Please explain why they have helped or why they have not.
   (Use the back of the paper.)

15. Please offer any suggestions for how this class could be improved to help future students identify doctrines and principles in the scriptures. (Use the back of the paper.)

Information

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Years I have enrolled in Seminary (include current year)</th>
<th>Class ID (ask teacher)</th>
<th>Teacher ID (ask teacher)</th>
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Appendix D

Teacher Observation Form
Teacher name ________________________________ Observer___________________

Date _____ Lesson number ________ Scripture block covered _____

Number of Students in class _________

Teaching methods:

Media used:

Graphic organizers used:

Student involvement:

Copies of daily lesson plans.
Appendix E

Graphic Organizers
Figure E-1. Graphic created using inspiration® software.

This is an example of a word web, the word “Dispensation” is defined and concept connections between words and ideas are illustrated. The role of a prophet is also introduced for discussion.
This is an example of a concept map created for Isaiah 53:3-5. It illustrates the relationship between what the Messiah is like and what he did for us and how we respond to him.
This is an example of a framed outline in its beginning form. Prompts from the teacher, the text and discussion guide the students in filling in the information in each quadrant. The student makes personal connections or application in the center.
Figure E-4. Example of a graphic illustration.

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Appendix F

Permission to Use Copyrighted Material
22 March 2011

Mark D. Potter
321 W. 450 N.
Ivins, UT 84738
Phone: (W) 435-673-2326, (C) 435-862-6273

To whom it may Concern:

I am in the process of preparing my Dissertation in the Teacher Education and Leadership at Utah State University. I hope to complete all requirements in the Spring of 2011.

I am requesting your permission to include the attached graphic illustration as shown. I will include acknowledgements and appropriate citations to your work as shown and copyright rights and information in a special appendix. The bibliographical citation will appear at the end of the manuscript. Please advise me of any special requirements.

Please indicate your approval of this request by signing in the space indicated below. If there are any reprint fees please indicate that as well.

Thank you for your cooperation in this matter.

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I hereby give permission to Mark D. Potter to reprint the following material in his Dissertation.

Signed [Signature] 22 Mar 2011
CURRICULUM VITAE

MARK D. POTTER

Education

B.S. in Geology, Weber State University, 5/82. Emphasis in geology of petroleum deposits and exploration. Minor in Geography with emphasis in land use planning and municipal development.

M.Ed in educational leadership from Brigham Young University, 8/87. Emphasis in community education including continuing and adult education and recreational classes.


Experience

INSTRUCTOR OF RELIGIOUS EDUCATION: The Church of Jesus Christ of Latter-day Saints from June 1985 to the present. Assignments have included teaching at Delta Seminary (grades 9-12), Hurricane Seminary (grades 10-12), Dixie Seminary (grades 9-12), Snow Canyon Seminary (grades 9-12) and Pine View Jr. Seminary (grade 9), St. George Institute of Religion (college students). Duties included teaching scriptural courses from the Old and New Testament, the Book of Mormon, the Doctrine and Covenants and Pearl of Great Price in a daily released-time setting. Working with parents, students and ecclesiastical leaders to recruit and retain students through all four years of Seminary study. Selected by the Seminary faculty members to teach students with mild to severe learning disabilities. Adapted a curriculum to use with these students based on the standard Church and Seminary curriculum.

SEMINARY PRINCIPAL: Pine Jr. Seminary (2001-2004), Dixie Jr. Seminary (1992-1997) Responsible for all daily instructional activities in the Seminary. This also included financial oversight, all student and teacher instructional needs and materials, safety, care of the physical facilities, planning and coordinating recruitment efforts with parents and ecclesiastical leaders and maintaining good working relationships with neighboring public school faculty and leadership. Was a mentor to one first year teacher and three student teachers. Mentoring duties included observing them in the classroom, offering suggestions for lesson presentation, preparation and problem solving with students and parents.

Advisor to Seminary student councils: (1986-1992) helped students learn leadership skills and coordinated major activities including leadership
workshops, firesides, barbecues, pancake breakfasts and other fun activities for recruitment and other student incentives.

Other Council member on Ivins City Council (200-2001).

Instructor for BYU Continuing Education Religion classes (1997-2000).

Geology Instructor for Dixie College Elderhostel summer program (1994).

Director of Adult Continuing Education (evening programs) at West Millard Vocational Center in Delta, UT. (1987-1989).

Instructor of Geology 101 for Snow College extension services at WMVC (1989).

Exploration and underground geologist for Uranerz USA Ltd. and Plateau Resources Ltd. (1982-1984). Duties included surface exploration for uranium and other precious metal using Radiometric, Magnetic, Gravimetric and Very Low Frequency methods to locate and map subsurface geologic structures in preparation for drilling and future development. Underground duties included mapping the known ore body, conducting underground exploration using long-hole drilling and radiometric probes to define other ore bodies. Worked with mine engineers on safety projects including ground movement, predictability of roof failure and radon gas monitoring.