

**CONCEPTUAL LEARNING IN SOCIAL STUDIES CLASSROOM: AN
ANALYSIS OF TEXAS ASSESSMENT OF KNOWLEDGE AND SKILLS
(TAKS) SOCIAL STUDIES QUESTIONS WITH AND WITHOUT CONCEPT**

A Dissertation

by

EMIN KILINC

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2012

Major Subject: Curriculum and Instruction

Conceptual Learning in Social Studies Classroom: An Analysis of Texas Assessment of
Knowledge and Skills (TAKS) Social Studies Questions with and without Concept

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May 2012

Major Subject: Curriculum and Instruction

ABSTRACT

Conceptual Learning in Social Studies Classroom: An Analysis of Texas Assessment of Knowledge and Skills (TAKS) Social Studies Questions with and without Concept.

(May 2012)

Emin Kilinc, B.S.; M.S. Selcuk University

Chair of Advisory Committee: Dr. Lynn M. Burlbaw

We are living in a conceptual world which we build through both informal and systematic interaction. Concepts enable us to simplify and organize our environment and communicate efficiently with others. The learning of concepts is represented by a general idea, usually expressed by a word, which represent a class or group of things or actions having certain characteristics in common, is a matter of central concern for designing effective instructional conditions in the school setting. Thus, concept attainment is a cornerstone of social studies to help students to make informed and reasonable decisions and therefore is a fundamental and challenging aspect of social studies content. Previous studies had not focused specifically on concept questions and nonconcept questions.

The purpose of this study is to determine whether 8th, 10th, and 11th grade students perform better on social studies questions which were classified as concept questions compared to questions which were classified as nonconcept questions. This

study also attempts to identify the relationship between correct answers on concept questions and students' demographics.

This study used a non-experimental descriptive, correlational, and causal-comparative research designs. This study used secondary data analysis, which involves a re-analysis of data collected for another study or purpose. The data for this study was gathered from Texas Education Agency, for all students who took the Spring 2006 and Spring 2009 version of the Grade 8, Grade 10, and Grade 11 Social Studies TAKS Tests.

A statistical significant difference was found between the percentage of correct concept question and nonconcept questions. Students had higher achievement on nonconcept questions than concept questions. The researcher compared students' correct answers for concept questions between years, the result indicated that students scored higher on concept questions in 2009 than 2006. Also, there was a significant difference between male students and female students. Male students had a higher mean of concept questions than female students. In addition, Grade 11 had a higher mean on concept questions than Grade 10 and Grade 8. The researcher found significant differences among ethnicity. Asian students and White students scored better on concept question than other ethnic groups. The researcher also examined the correlation between concept questions and nonconcept questions. The result indicated that there was a significant positive high correlation between choosing correct answers for concept question and nonconcept questions. Last, native speaker students had a higher achievement on concept questions than ESL students.

DEDICATION

I dedicate this study to the love of my life, Seray, my son Furkan, and my daughter Hulya. Only they know the challenges of this effort and always encourage me to complete of this degree.

I also dedicate this dissertation to my mother and father, who always support me to realize my dreams.

Finally, I dedicate my dissertation to my chair, Dr. Burlbaw, who inspires me all the time in my degree.

ACKNOWLEDGEMENTS

I would like to thank my committee chair, Dr. Lynn Burlbaw for his guidance and support throughout my doctoral work. He has always encouraged me when I want to give up. I deeply appreciate his expertise, professionalism, and commitment to me as his student. I see him as an excellent role model for me in the life of Academia. I believe that I could not have been a successful Aggie student without him.

I would also like to thank Dr. Janet Hammer for being a member of my committee and for her support throughout the course of my research. I thank Dr. Valerie Hill-Jackson for being a member of my committee. She has guided me through this process with kindness. I also thank Dr. Walter Kamphoefner for agreeing to be an outside member of my committee and for his guidance.

I want to thank my wife Seray Kilinc for her love and support. I will be forever grateful for the sacrifices she has made to ensure that I successfully complete this journey. Thank you again Seray for always being my support when I was ready to give up. I also want to thank my handsome son, Furkan and my beautiful daughter, Hulya. I know that you sacrificed your time for me and I appreciate your love and understanding when I had to focus on completing my work throughout this doctoral process.

I also want to thank my friend, Russell Evans for his support and encouragement. He has always been a good officemate and friend as we have worked together on several research projects. I had a great time, learned a lot from you and hope we can maintain a professional relationship throughout the future.

I want to extend my gratitude to the Texas Education Agency for providing me with the requested and necessary data for my dissertation. Thanks also go to my friends and colleagues and the department faculty and staff for making my time at Texas A&M University one that I will forever cherish.

Finally, thanks to my mother and father for their encouragement, patience and love.

NOMENCLATURE

| | |
|-------|---|
| ESL | English as a Second Language |
| FERPA | Family Educational Rights and Privacy Act |
| NCSS | National Council for the Social Studies |
| TAKS | Texas Assessment of Knowledge and Skills |
| TEA | Texas Education Agency |
| TEKS | Texas Essential Knowledge and Skills |

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CHAPTER I

INTRODUCTION

Concept learning in social studies has been studied extensively in the United States over the past 50 years (Hunt & Metcalf, 1968; Martorella, 1971; Taba, 1965). In the ten themes of the National Council for the Social Studies (1994), concept attainment plays a key role. Students need to learn concepts in order to understand the principles of social studies and to, “develop the ability to make informed and reasoned decisions for the public good” (NCSS, 1994, p.3). While social studies educators have different ideas about purposes of social studies (Brubaker, 1967; Fenton, 1967; Hunt & Metcalf, 1968), many agree with Martorella (1971) that concept learning is likely to be a highly desirable educational outcome. Concept was defined as “a general idea, usually expressed by a word, which represent a class or group of things or actions having certain characteristics in common (Quillen & Hanna, 1961, p. 187-188).

The idea of ensuring success for all students is an increased demand in Texas and the United States after the emergence of standards-based reform. This idea leads to high-stakes accountability systems for school, teacher and pupil performance (Zelenak, 2008). Unlike assessment in most states, social studies is one of the areas tested on the Texas Assessment of Knowledge and Skills (TAKS). Previous research has been conducted with a focus on the social studies concept teaching methods and curriculum (Hunt &

This dissertation follows the style of *Theory and Research in Social Education*.

Metcalf 1968; Martorella, 1971; Merrill, Tennyson, & Posey, 1992; Taba, 1965) and Texas Assessment of Knowledge and Skills (TAKS) Social Studies Test scores (Bedford, 2007; Evans, 2006). While researchers have focused on designing concept instruction and students' social studies scores, very few studies examine concept questions in the TAKS Social Studies Tests.

This study seeks to answer several questions focused on the responses on concept questions of students who took the TAKS Social Studies Test in 2006 and 2009.

Objectives

The purpose of this study is to explore whether there was a difference between students' responses on concept-based questions and non-concept-based questions on TAKS Social Studies Test in 2006 and 2009. Furthermore, this study aims to identify the impact of students' gender, ethnicity, and grade levels effect of giving correct responses to social studies concept questions in 2006 and 2009 TAKS Social Studies Test. Specific objectives include:

- To investigate the difference between concept questions and non-concept questions by students' correct answers.
- To analyze whether students' demographic/background characteristics are associated with giving correct answers to concept questions.
- To discover the difference between grade level and giving correct answers to social studies concept questions.

Rationale for the Study

Robert Glaser (1968) mentioned that “between basic elementary behavioral processes such as stimulus perception, discrimination, and associations, and more complex intricate behavioral processes such as problem solving, thinking, and creating, lies the domain of concept learning” (p.1). This sentence serves as a sharp reminder of the importance of conceptual learning. Edwin Fenton (1967) indicated three purposes of social studies which are to prepare children to be good citizen, teach children how to think and to pass on the cultural heritage. Hunt and Metcalf (1968) argued that the most important aim of social studies is to help students reflectively examine issues in the problematic areas of American culture. The importance of reflective thinking was mentioned by John Dewey (1910) at the beginning of the 20th century. Dewey asserted that reflective thinking is essential to maintain the state of doubt and to carry on systematic and protracted inquiry. Students need to learn concepts in order to understand the principles of social studies and to, “develop the ability to make informed and reasoned decisions for the public good” (NCSS, 1994, p.3). Gagne (1970) maintained that the students will be asked to classify many things and events which start at early grades and throughout their school career. While social studies educators have different ideas about purposes of social studies (Brubaker, 1967; Fenton, 1967; Hunt & Metcalf, 1968), many agree with Martorella (1971) that “concept learning is likely to be a highly desirable educational outcome. In this respect, “concept learning as an educational focus allows educators to transcend, to some degree their global statement of goals” (p.5).

Concept learning in social studies has been studied extensively in the United States over the past 50 years (Hunt & Metcalf, 1968; Martorella, 1971; Taba, 1965). One of the foundational studies on concept learning, *Concept Learning in the Social Studies* by Martorella (1971) compiled multiple researchers' definitions of concept learning. Concept learning scholars and psychologists, Bruner, Goodnow, and Austin (1977) defined concept as:

We have found it more meaningful to regard a concept as a network of sign-significate inferences by which one goes beyond a set of observed criteria properties exhibited by an object or event to the class identity of the object or event in question, and thence to additional inferences about other unobserved properties of the object or event..... the working definition of a concept is the network of inferences that are or may be set into play by an act of categorization (p. 244).

Similarly, Taba earlier wrote “the basic concepts are essentially high level abstractions expressed in verbal cues and labels” (1965, p. 465). Additionally, in 1964, Gould and Kolbs had defined a concept as “a kind of unit in terms of which one thinks; a unit smaller than a judgment, proposition, or theory, but one which necessarily enters into these” (1964, p. 20). Accordingly, Martorella (1971) concluded that a concept is not a basic unit, but is a complex of properties, inferences and connections. Because the definition of concept is so broad, teachers and educators have created subcategories of concept. Bruner and his associates, in summarizing the work of previous research, reified the classification of concepts into three different categories: conjunctive, disjunctive and relational concepts (Bruner, Goodnow, & Austin, 1977).

Martorella, provided examples of the three categories in his book. He defined conjunctive concept as a common class of combined elements. An example would be

“mountain”, as a land mass that projects well above its surroundings; higher than a hill. A disjunctive concept, on the other hand, was defined as particular sets of alternate attributes (Martorella, 1971). The use of the phrase “disjunctive concept,” has a long history as exemplified by the example of “furniture,” because it includes objects which have different characteristics such as chair and table. The third class of concept, relational concept, is defined as a “specifiable relationship between defining attributes” (Bruner, Goodnow, & Austin, 1977, p.43). Bruner and associates gave “income tax brackets” as an example. In social studies education, teachers and researchers should consider what the learning of these three types of concepts mean for student achievement. An important conclusion to draw is that attaining these types of concepts are different (Hunt & Metcalf, 1968).

As noted earlier, one of the social studies instruction’s central objectives has been the learning of concepts (Fancett, Johns, Hickman, & Price, 1968; Hunt & Metcalf, 1968; Martorella, 1971). If students’ concept attainment occurs in the correct way, students can make a connection with their previous learning and it effects students’ future academic achievement. It can be concluded that social studies concept attainment is crucial for students because social studies concepts help students to understand their physical and social life and improve their reflective thinking. Also, the understanding of a concept determines students’ academic achievement for social studies courses.

Statement of the Problem

We are living in a conceptual world which we build through both informal and systematic interaction. Concepts enable us to simplify and organize our environment and

communicate efficiently with others (Martorella, 1972). The learning of concepts is a matter of central concern for designing effective instructional conditions in the school setting (Gagne, 1965). Thus, concept attainment is a cornerstone of social studies to help students to make informed and reasonable decisions and therefore is a fundamental and challenging aspect of social studies content (Sunal & Haas, 2005). Social studies textbooks are indispensable tools of social studies teachers. Even though they are using other sources, acquisition of concept plays a key role for students understanding. Most of the time students are requested to read chapters of textbooks and independently comprehend the material (Reyes, 1983). Thus, Rowell (1978) concluded that concept attainment is crucial to comprehend social studies textbooks. For example, Freeland (1978) examined three elementary textbooks and stated that 90% of words represented abstract social studies concepts. This indicates how concepts are widely used as indispensable tools of social studies curriculum. Specifically, social studies concepts are more abstract, complex and difficult to teach than individual facts. Therefore, researching the techniques of effectively teaching abstract social studies concepts is important to nurture active, responsible, and sensitive citizens.

Decades ago, a number of efforts were made in the United States to modify social studies curricula in order to meet the challenges that social studies educators face in deciding what should be presented to the student for maximum educational value. Teaching or learning all known facts is impossible in the twenty-first century because new knowledge is being created at such a rapid pace. As a result, many social studies educators agreed that social studies content should be organized around a framework of

concept generalizations from the various social science disciplines (TEA, 1975). To provide sufficient materials for concept attainment, some curriculum materials were designed to teach significant social studies concepts. *Major Concepts for the Social Studies: A Progress Report* (Price, Smith, & Hickman, 1965) by Syracuse University and *Selection and Analysis of Social Studies Concepts for Inclusion in Tests of Concept Attainment* (Tabachnick, Weible, & Frayer, 1970) by University of Wisconsin were some of these studies. In the state of Texas, Texas Education Agency published *Framework for the Social Studies, Grades K-12* to provide guidelines to Texas public schools. This framework suggested that social studies content should be planned within a conceptual framework to ensure transferability of knowledge and ideas from one context or experience to another (TEA, 1975).

While research has focused on instructional methods for concept teaching, very few studies examine data at the 8th, 10th, and 11th grade levels for possible sources of higher social studies concept performance on standardized tests mandated at the state level. This presents a gap in the research literature with a need for studies focused on the academic achievement of 8th, 10th, and 11th grade students on concept questions at social studies 2006 and 2009 TAKS exam.

Purpose Statement

The purpose of this study is to determine whether 8th, 10th, and 11th grade students perform better on social studies questions which include concept or concepts compared to questions which do not include at least one concept. This study also

attempts to identify the relationship between correct answers on concept questions and students' demographics.

Research Questions

1. Are 8th, 10th, and 11th grade students more likely to choose the correct choice for concept questions rather than non-concept questions?
2. Is there a significant difference on 8th, 10th, and 11th grade students' correct responses between concept and non-concept questions on the 2006 and 2009 Social Studies TAKS Tests?
3. Is there any relationship between choosing correct choices for concept questions on the 2006 and 2009 Social Studies TAKS Tests and students' gender, ethnicity, socio-economic status, and language level?
4. Are the percentages of correct responses on concept and non-concept questions on the 8th, 10th, and 11th grade social studies TAKS test significantly different for students who are native speakers and who are in ESL class?

Method

This study used secondary data analysis, which involves gathering data from federal, state, or other research organization such as National Center for Educational Statistics and a number of developed, large-scale databases. Secondary data analysis is a widely accepted form of educational research and K-12 and higher educational analysts have used it extensively (Strayhorn, 2009; Thomas & Heck, 2001). The use of secondary databases has several advantages including maximizing generalizability because the

results that are produced by large scale secondary data analyses are inferentially robust, combining information from multiple sources to create a robust dataset. Also, data collection for federal and state data set is often performed by a staff member who specializes in that task and who may have years of experience (Boslaugh, 2007). In addition, using secondary databases is considerably cheaper and faster than doing original studies (Stayhorn, 2009).

This study used a non-experimental descriptive, correlational, and causal-comparative research designs. Descriptive research is useful for investigating a variety of educational problems and issues. Descriptive research aims to describe the data and characteristics of what is being studied (Gay, Mills, & Airasian, 2006). Correlational research involves collecting data to determine, whether, and to what degree, a relationship exists between two or more quantifiable variables (Anderson, 1990; Gay, Mills, & Airasian, 2006). Causal-comparative research design is a research method in which investigators attempt to determine the cause or consequences of differences that already exist between or among groups of individuals (Frankel & Wallen, 2003). These are appropriate designs due to the desire of the researcher to examine data which is preexisting and cannot be changed or influenced in any way for the purpose of understanding the impact of one (or multiple) variable(s) on another (Chatterji, 2007).

Participants

The population for this study consists of all 8th, 10th, and 11th grade students enrolled in Texas schools during 2005-2006 and 2008-2009 educational years. The researcher used a total of 1,609,028 students' data those who took either Social Studies

TAKS Test in 2006 or Social Studies TAKS Test in 2009 for this study. The researcher used 737,116 students' data for Social Studies TAKS Test in 2006 and 871,912 students' data for Social Studies TAKS Test in 2009. In total, 805,470 students are male while 803,555 are female; 584,808 students took 8th grade Social Studies TAKS Test; 558,131 students took 10th grade Social Studies TAKS Test; and 466,089 students took the exit level Social Studies TAKS Test in 2006 and 2009.

Instrumentation

For the purpose of this study, the Texas Assessment of Knowledge and Skills (TAKS) Social Studies Tests was used to measure all outcome variables. The statewide testing system was mandated by the Texas Legislature in 1999. The TAKS tests are designed to determine what students have learned and whether they can apply the designed knowledge and skills at each tested grade level. The TAKS is a standards-referenced assessment aligned with a statewide curriculum. The test requirements mandated by the legislature are that all eligible Texas public school students are assessed in social studies in Grades 8,10, and 11 (TEA, 2011; Zelenak, 2008). All 8th, 10th, and 11th grade students in the state of Texas were administered the state mandated Grade 8, Grade 10, or Grade 11 Social Studies TAKS Test based on their current grade level.

The content validity was assessed by the statewide advisory committee which used the Texas Essential Knowledge and Skills (TEKS) objectives to determine the content validity of the test. The reliability of the TAKS test is estimated by the Kuder-Richardson Formula 20. As a general rule, reliability coefficients from 0.70 to 0.79 are considered adequate, 0.80 to 0.89 are considered good, and above 0.90 are considered

excellent (TEA, 2009). For the 2008–2009 school year, most TAKS internal consistency reliabilities are in the high 0.80s to low 0.90s range, with reliabilities for TAKS assessments ranging from 0.87 to 0.90 (TEA, 2009). For the 2005-2006 school year, TAKS assessments consistency reliabilities were ranging from 0.81 to 0.93 (TEA, 2006).

Procedures

The data for this study was gathered from Texas Education Agency. The researcher submitted a request for data to the Texas Education Agency to access necessary data for the study. The TEA provided the researcher with data that included a coding for gender, ethnicity, ESL class, raw scores, scaled scores, and an item analysis for every 8th, 10th, and 11th grade social studies TAKS test item. Scores on the English version of the Spring 2006 and Spring 2009 TAKS tests were requested. The Grade 8 Social Studies TAKS Test consisted of 48 questions; the Grade 10 Social Studies TAKS Test consisted of 50 questions, and the Grade 11 Social Studies TAKS Test consisted of 55 questions.

Analysis of Data

This study was conducted utilizing quantitative methods. Through a nonexperimental quantitative process, numerical data was gathered from TEA and was subjected to statistical analysis to determine whether there were significant differences and relationship among variables. Descriptive and inferential statistics were used in the data analyses to understand the students and their responses to concept questions.

The data was imported from Excel into the Statistical Package for the Social Sciences (SPSS) version 19 for the purpose of data analysis. To answer research

questions about differences, a t-test for independent sample, t-test for paired sample, and one way ANOVA were used to examine whether there were a significant difference among variables. To answer research questions about relationship, coefficient was used to analyze correlation between variables.

Limitations

1. The potential that unidentified variables may influence giving correct response to TAKS Social Studies Test concept questions among 8th, 10th, and 11th graders.
2. The researcher had no control over the students' academic ability and any other leading factors for academic achievement.
3. The researcher cannot talk about the school or district level.
4. The researcher did not have socio-economic status data. Lack of socio-economic data inhibits interpretation of performance of African American and Hispanic students because quality of education is strongly influenced by socio-economic status (Lewis, James, Hancock, & Hill-Jackson, 2008; Valenzuela, 2005).
5. The researcher had no control over the quality of social studies teachers. The readers should consider that teachers with disposition for social justice positively affect the achievement of diverse learners (Hill-Jackson & Lewis, 2010).

Definitions

Concept

A concept is a general idea, usually expressed by a word, which represent a class or group of things or actions having certain characteristics in common.

Concept Attainment

Concept attainment is the process of learning what features of the environment are relevant for grouping events into externally defined classes.

Concept Question

Concept question is those who has concept or concepts and knowledge of these concepts are key to correctly answering the question.

Nonconcept Question

Nonconcept question is a fact, knowledge, or interpretation question that may contain concepts but do not test the knowledge of the concept.

Social Studies

Social studies is defined as the course that uses social sciences and humanities to prepare students as critical thinkers and effective citizens.

Organization of Chapters

This study examined students' responses on concept questions on Social Studies TAKS Test results of Grade 8, Grade 10, and Grade 11 students in Texas. This study is organized into five chapters. Chapter I is titled "An Introduction" and includes a rationale for the study, the statement of the problem, purposes of the study, research questions, limitations and delimitations of the study, instrumentation, assumptions, and definitions. Chapter II is titled "A Review of Related Literature" and includes definition and purpose of social studies, the history of social studies curriculum, concept learning in the social studies, and the history of high stake testing and Texas Assessment of Knowledge and Skills Test. Chapter III is titled "Design of the Study" and includes a

description of the theoretical framework used for the research, a description of the data used in analysis, instrumentation, analytical framework, and analytic process. Chapter IV is titled “Presentation and Analysis of Data” and includes four research questions. Chapter V is titled “Summary, Conclusion, and Recommendations” and includes a summary of the overall study, a summary of the findings which are detailed in Chapter IV, conclusions based on findings, implications and recommendations for theory and practice, and recommendations for future research. A list of references follows the five chapters.

CHAPTER II

A REVIEW OF RELATED LITERATURE

Introduction

In order to situate this study into existent knowledge and findings, a review of literature was conducted. This review began with a presentation of defining social studies and the purpose of social studies. Secondly, the researcher focused on the history of social studies curriculum and its changes in historical perspectives. Next, the researcher presented previous studies focused on the concept and the structure of knowledge. Then, the researcher focused on the researches of conceptual learning in the social studies classroom. Finally, the researcher mentioned the aim and history of Texas Assessment of Knowledge and Skills Test.

Defining Social Studies

Social studies has been a part of the school curriculum from the beginning of the twentieth century. However, there is no consensus on what constitutes a worthwhile social studies program (Case & Abbott, 2008). There is a story among social studies educators which describes this little agreement on the definition of social studies that if ten social studies educators are asked what the definition of social studies is, one will get ten different answers (Douglas, 1967; Texas Education Agency, 1999). Social studies educators also disagree over whether social studies is plural or singular (Texas Education Agency, 1999), whether it refers to content to be taught and learned or to a method of teaching (Douglas, 1967), and what to teach in social studies (Clark & Case,

2008). In addition, the terms of social science and social studies are used reciprocally. Social science refers to the academic disciplines of anthropology, psychology, and sociology. On the other hand, social studies is more inclusive and includes history, geography, economics, humanities, and philosophy (Duplass, 2011). Barr, Barth, & Shermis (1977) asserted that the disagreement over the definition of social studies involved the sources of content, the scope and sequence of the curriculum, and instructional strategies of the social studies. Over the past 100 years, several definitions of social studies have been proposed:

“the social studies are the social sciences simplified for pedagogical purposes” (Wesley, 1937, p.4).

Social studies is “those organized school subjects which take as their primary function the study of human group livings.... The term social studies is a generic label applying to all of the aspects of human experience which are selected for study in schools, no matter how the materials are organized for teaching purposes or under what specific labels they exist in school programs” (Wilson, 1938, p.6).

“The term social studies is used to include history, economics, sociology, civics, geography and all modifications or combinations of subjects whose content as well as the aim is social” (NCSS, 1957, p. 196).

“The social studies deal with man’s way of living with his fellow men in the present as well as in the past and in the future” (Hanna, 1957, p.27).

“The social studies are concerned with human relations. This content is derived principally from the scholarly disciplines. The ultimate goal of social studies is the development of desirable socio-civic and personal behavior” (NCSS, 1962, p.315).

“Social studies is the study of man’s relationships to his human and physical environments” (Clements, Fielder, & Tabachnick, 1966, p.7).

“Social studies is an American term that refers to a portion of the elementary and secondary school curriculum set aside to teach students about the

relationship of human beings to their social and physical environment” (Fontana & Mehlinger, 1981, p. 27).

Social studies is “those whose subject matter relates directly to the organization and development of human society, and to man as a member of social groups” (Nelson, 1994, p. 9).

“Social studies is the integrated study of the social sciences and humanities to promote civic competence. Within the school program, social studies provides coordinated, systematic study drawing upon such disciplines as anthropology, archeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as appropriate content from the humanities, mathematics, and natural sciences” (NCSS, 1994, p.3).

“Social studies is an inquiry-based social practices for understanding and addressing problems, especially complex, multi-faced problems” (Baildon & Damico, 2011, p.1).

The writing team of the Texas Essential Knowledge and Skills (TEKS) followed the 1994 definition of the National Council for the Social Studies as their guidance (TEA, 1999). The Texas Education Agency mentioned in the Texas Social Studies Framework that anyone who involved in social studies education should reflect on this definition (TEA, 1999).

Social studies, for this paper, is defined as the course that uses social sciences and humanities to prepare students as critical thinkers and effective citizens.

The Purpose of the Social Studies

Social studies is a crucial lesson because it prepares students as citizens. Social studies also aims to increase students’ knowledge and their reflective and critical thinking (Baildon & Damico, 2011). Although, there is a discussion about the importance of social studies, many agree that social studies is necessary and indispensable as a school subject (TEA, 1999). According to Price (1969), the purpose

of the social studies is to equip students with ways of thinking, feeling, and acting which can enable them to behave more effectively and with greater understanding and satisfaction. During the same decade, Fenton asserted that social studies has three popular purposes; preparing students to be exemplary citizens, teaching children how to think, and passing on cultural heritage (Fenton, 1967). The National Council for the Social Studies (1994) expressed that the main purpose of the social studies is “to promote of civic competence, which is the knowledge, skills, and attitudes required of students to be able to assume the office of citizen in the democratic republic” (p.3). Similarly, Texas Education Agency (1999) indicated that social studies “prepares students to assume productive, participatory lives as citizen” (p. 3).

The purpose of social studies, for this paper is to prepare active, inquiring citizens for the society. In order to become active, inquiring citizens, students need a language to communicate often abstract ideas and concepts. Also, to be able to apply the concept labels in appropriate situations, citizens need to be able to determine which concepts labels apply and why; and they need reflective thinking. Thus, since the concepts that most make us human are those from the social sciences, the learning of concepts in social studies – and our ability to determine the learning of concept - is important.

Concept acquisition is necessary for comprehension in the social studies. Promoting the learning of social studies concepts is essential for students because it helps comprehension. In his book, *The Process of Education*, Bruner (1960) asserted that acquisition of fundamental concepts makes a subject more comprehensible. He stated

that there is no difference between main fields. This idea is true not only mathematics and science but also social studies and literature. Bruner continues “once one has grasped the fundamental idea that a nation must trade in order to live, then such a presumably special phenomenon as the Triangular Trade of the American colonies become altogether simpler to understand...” (p. 23). In the social studies classroom, when students are able to recognize familiar elements and classify them with others by their similar characteristics, their thinking becomes more efficient and economical (Fancett et al., 1968).

Social studies content becomes more verbal when students move from elementary grades to secondary grades because educators assume that students have mastered social science concepts and generalizations and these concepts are enough to comprehend the materials (DeCecco & Crawford, 1974). Students are able to relate one big idea to another, see connections and make generalization when their understanding of social science concepts grows (Fancett et al., 1968). A research about social studies textbooks showed how learning social science concepts are crucial to comprehend social studies context. The research mentioned that 90% of the terms can be classified as words representing abstract social science concepts (Freeland, 1978). Concept learning makes possible the acquisition of abstract social studies ideas and the discovery new ideas (Ausubel, 1968).

Relating Social Studies to Concept Learning

A social studies course offers students several experiences in which they examine these concepts related to decision making. Students also examine decision making

methods, search data, and analyze and interpret the evidence in social studies classrooms. Also, they learn how to interact with their community as members of the society (Fancett et al., 1968). Parker (2001) postulated that concept learning can be considered as scaffolding without which students will not learn. Thus, students need to learn key social studies concepts to make personal decisions, actively participate in civic activities, and be economically productive (NCSS, 1994, Sunal & Haas, 2005). Concept teaching is an effective tool to help students to learn much of the essential subject matter of social studies.

There is other evidence that shows the importance of the concept. Even though, many researchers do not point to this importance, Parker (2001) took attention to NCSS standards. Each of the 10 social studies curriculum standards is a concept or a group of two or three concepts. Parker (2001) stated that if teachers become familiar enough with these concepts, they can teach more effectively.

There is another discussion about what content should be included in social studies curriculum and how it should be taught (Stanley & Nelson, 1994). Understanding the origin of the social studies is crucial for social studies educators because they need to consider the alternatives and develop their principles and teaching practices thoroughly (Evans, 2006). Furthermore, looking at social studies from historical perspectives helps to identify basic controversial issues in the social studies (Barr, Barth, & Shermis, 1977). The next paragraphs will discuss the history of social studies movements and historical trends towards how social studies should be taught.

The History of the Social Studies Curriculum

Foundations of Social Studies

The foundation of the social studies appeared from the attempt to utilize education for improving social welfare. This concept dates from 1820 in Great Britain and quickly spread to the United States (Saxe, 1991). The evaluation of the social studies in American schools dates from the early 20th century and in many ways reflects the changing values, attitudes, and beliefs of Americans (Barth, 1977).

Because social studies is the most inclusive of subjects, the social studies curriculum has been an ideological battleground throughout the twentieth century (Ross, 1997). The most significant problem of the social studies is that there has been a lack of consensus among scholars as to what the field of social studies is or should be (Barr, Barth, & Shermis, 1977). In his book, Evans (2004) expressed that “the history of social studies is a story of turf wars among competing camps, each with its own leaders, philosophy, beliefs, and pedagogical practices” (p.1). These battles about the purpose, content, and pedagogy are among the most difficult battles over social studies in the school curriculum (Stanley & Nelson, 1994). In order to understand the development of the social studies, one needs to know the debates about the social studies curriculum and the various "camps" in the field.

In his book, *Social Studies Wars*, Evans (2004) identified five main competing camps which struggled at different times to retain control of social studies or to influence its direction. These camps are traditional historians, mandarins, social efficiency educators, Deweyan experimentalists, and social reconstructionists.

Traditional historians maintain the importance and primacy of history and they stated that history should be the core of the social studies, while mandarins advocated social studies as a social science. On the other hand, social efficiency educators state the purpose of social studies is to create a smoothly controlled and more efficient society. Deweyian experimentalists want to use social studies to increase students' reflective thinking. The last group, social reconstructionists want to use social studies for the transformation of the American society.

Barth and Shermis (1977) asserted three traditions in the social studies curriculum; the citizenship transmission tradition, the social science tradition, and the reflective inquiry tradition. Advocates from each tradition insisted that students be acquainted with its leading concepts and theories (Fullinwider, 1991). In his classic work, *Struggle for the American Curriculum*, Kliebard (2004) classified four main groups for the curriculum: humanists, developmentalists, social efficiency, and social meliorist.

Traditions of Social Studies

The origins of the social studies have been studied extensively in the United States over the past decades (Barr, Barth, & Shermis, 1977; Crocco, 2003; Evans, 2004; Saxe, 1991). The most accepted idea about the origin of the social studies is that the term of social studies was introduced in 1916 by the National Education Association's (NEA) 1916 Committee on Social Studies (Ross, 1997; Singer, 2009). Crocco (2003) mentioned in her essay on historical perspectives of social studies that the field of social studies emerged during the period of 1890-1920.

The idea of social studies as a secondary school subject was a product of the NEA's Committee on Social Studies. The *1916 Report* is crucial for the social studies because it was the first attempt to make a history out of the past of the social studies curriculum (Lybarger, 1991). Before that, social studies in the United States was mainly history, some geography and civil government (Evans, 2004; Stanley & Nelson, 1994). Because the 1916 Committee on Social Studies included teachers, principles, teacher educators, and subject matter specialists from around the United States, the members sought to lessen history's place in the social studies curriculum (Whelan, 1997). This report brought a broad, interdisciplinary, and modern approach to the social studies curriculum (Evans, 2006). The National Education Association first decided the goal of public education then defined the role of social studies curriculum in order to achieve that goal. The committee defined the purpose of American public schools to be the cultivation of a good citizen (Barr, Barth, & Shermis, 1977). The 1916 report defined social studies as "to be those whose subject matter relates directly to the organization and development of human society, and to man as a member of social groups" (Nelson, 1994, p. 9). The aim of the social studies was to nurture upstanding citizens who became efficient members of their neighborhood (Nelson, 1994).

The 1916 Committee on Social Studies reports made four recommendations for the social studies curriculum. The 1916 report first recommended vocational civics and community civics in the seventh and eighth grades, Problems in American Democracy course for high school courses, European and American History courses for high schools, the term of social studies to refer collectively to economics, history, political

science, sociology and civics (Tryon, 1935; Lybarger, 1991). The progressive movement, which emerged at the beginning of the twentieth century (Stanley & Nelson, 1994) specifically Dewey's reflective thinking as an explanation of how we should think and learn (Barr, Barth, & Shermis, 1977), influenced the recommendation of the 1916 report. In reaction to the progressive educators' efforts to school new immigrants and change their lifestyles, the social studies was designed to remediate cultural deficiency and create better citizens. Thus, this period is called "the cultural amelioration phase" (Crocco, 2003, p.107). The debate about what should be taught in the social studies courses after World War I continued in 1930s and 1940s (Field & Burlbaw, 1995).

Five years after the 1916 report, the National Council for the Social Studies (NCSS) was established. The NCSS reflected the beliefs of teachers and curriculum makers that history alone was not preparing children to be good citizens in a complex, industrial society (Lybarger, 1991). The trends of social studies in the 1920s were improving patriotism; directing problems of citizenship (Shermis, 2009); teaching about democratic values, and geography (Field & Burlbaw, 1995). Meanwhile, the efforts of historians to define the role of history in the social studies curriculum continued in the 1920s. Advocates of the traditional history and the social sciences criticized the 1916 report; specifically they criticized the Problems of Democracy course and the idea of social studies (Evans, 2006). In the early 1930s, the idea that students could best be prepared for their citizenship role by fusing the subjects, history, geography, and civic increased interest in the development of social studies organization (Dogan, 1989). By the late 1930s, many social studies programs focused on the use of problem solving and

reflective thinking in the social studies curriculum through the use of the community civic concepts such as getting students into the community (Dougan, 1989).

The Great Depression and World War II had significant effects on social studies curriculum. The Great Depression provided evidence for the need to change the approach to the social studies curriculum. The most significant competing camp was social reconstructionism during the depression years (Stanley & Nelson, 1994). During the decade of 1930s, problem-centered social studies education was popular, and Harold Rugg, who advocated a social studies curriculum built around the American problem, was the leading person of the social studies curriculum (Evans, 2004). In addition, the philosophy of Dewey and Progressive Education Association (PEA) indicated that social studies should aim to educate children for life and to meet the needs of adolescent (Dougan, 1989). Social reconstructivists (Counts, 1932; Rugg, 1933) were criticized by both conservatives (traditional historians, social melorist) and liberals (Deweyan experimentalist, humanist). Conservative scholars stated that reconstructionism was a substantial threat to American traditional way of life.

After World War II, patriotic feelings aroused, and conservative approaches became dominant in the social studies curriculum. Briefly, in the period of 1940-1960, there were three main divisions within the social studies. There were the traditional subject-centered approach to the organization and content, the reflective inquiry approach with varying emphasis on inquiry, and the life-adjustment approach that emphasized the immediate concerns of students (Dougan, 1989). Conservatives, who were mainly university professors and journalists, criticized the perspectives of

progressive social studies from the 1920s and 1930s. The main criticism of the conservatives was the curriculum in school was soft, anti-intellectual, and weak when compared to schools in Europe and USSR (Bestor, 1953; Rickover, 1959). Instead of the study of contemporary problems, history was recommended as a main discipline; while the emphasis on civics was reduced (Stanley & Nelson, 1994).

A significant break from the practice of integrated social studies was seen in 1955 when Hunt and Metcalf asserted that social studies programs should not be organized around separate social science subjects, but around the closed areas of the society. They also conceived of a new way of integrating the knowledge and skills of social science with the goal of citizenship education. (Hunt & Metcalf, 1968).

The success of Sputnik is a milestone for social studies curriculum. After the Russian accomplishment over the United States, many aspects of American education were criticized and funding was available mainly for mathematics and science. The launch of Sputnik had an impact on social studies curriculum as well as mathematics and science. Bruner had a key influence on the new social studies. His book *The Process of Education* (Bruner, 1960) provided a framework for curriculum based mainly on cognitive psychology to the social studies curriculum. Key concepts, generalizations, theories, and modes of inquiry defined a unique structure of the new social studies (Stanley & Nelson, 1994). Several projects (e.g. Man: A Course of Study, High School Geography Project, Project Social Studies) were done to teach students the concepts (Ausubel, 1968; Bourne, 1970; Bourne & Guy, 1968; Bruner, 1960; Gagne, 1965; Glaser, 1968; Taba, 1964). All of these projects produced many social studies materials,

such as simulation games, plastic artifacts, and data banks. These multimedia materials were designed to be the basis for the new social studies curriculum. The curriculum materials of the New Social Studies were designed to teach students not only concepts but also the reflective thinking (Barr, Barth, & Shermis, 1977; Engle, 1960). Reflective thinking was another notable component of the New Social Studies. Shirley Engle (1960) suggested a rationale to social studies which was reflected by John Dewey's philosophy and made a significant contribution to include reflective thinking in social studies.

The main method and approach of the new social studies curriculum was the inquiry method and the structure of the discipline approach (Lybarger, 1991). The main aim of the new social studies was to "capture the main ideas and current approaches to knowledge represented by the academic disciplines" (Marker & Mehlinger, 1992, p. 838). Through discovery or inquiry techniques, students were able to use content derived from history and the social sciences to find the concepts, generalizations, and methods of this study in those disciplines (Stanley & Nelson, 1994). The New Social Studies Movement would take the discipline approach because of the Cold War fears combined with the critique of the progressive social studies (Evans, 2004).

Even though, the new social studies curriculum was well funded, it did not make any significant impact on classroom practices because of the lack of trainee teachers and technical problems (Ross, 1997; Shaver, Davis, & Hepburn, 1979). By some accounts, the new social studies also did not significantly affect the scope and sequence patterns of

the social studies curriculum (Haas, 1977; Martorella, Beal, & Bolick, 2001; Massialas, 1992).

The social studies era in 1980s is described as a period of reaction and soul searching for the social studies (Martorella et al., 2001). Atwood (1982) stated that “it can be argued that the 1980s must be the adolescent period for social studies as social studies educators, through their journals and in dialogue at national and regional meetings, are diligently seeking consensus on definitions and purpose, as well as agreement on the scope and sequence. At this point, it is unclear how long the adolescent period will last for social studies” (p.10). This quotation showed us that after six decades from the foundation of social studies, social studies educators wanted to reach a consensus on the definition and purpose of social studies. Thus, 1980 period is the time for self-absorption for social studies.

Social Studies and National Reform

On April 26, 1983, *A Nation at Risk* was published. The report was seen as a rallying cry for raising expectations for student learning and improving performance in American schools. The National Commission on Excellence in Education recommended that states and local school districts increase graduation requirements, extend the school year, and administer standardized tests (Mathison, Ross, & Vinson, 1997). The commission recommended a more rigorous four year high school course of study founded on the new basics which included three years social studies (Newmann, 1985). Social studies educators including Clearinghouse Advisory Board members, members of the Board of Directors of the Social Science Education Consortium, and attendees of

1983 National Council for the Social Studies were asked their responses about their reactions to *A Nation at Risk* (Davis, 1984). The social studies educators agreed that education had some problems and social studies as well. They also agreed that social studies education needed advancement. In addition, social studies educators supported the recommendation for three years of social studies for high school graduation (Davis, 1984). The reform also led to the standards movement in education. Evans (2004) stated that “the standards movement was launched amid a mythical national crisis in education based upon the charge that our schools were in dire condition and largely to blame for a U.S. decline in international economic competition. The public agreed that drastic reform was required to remedy the situation” (p.163). The reform movement generated by *A Nation at Risk* and continued with the America 2000 and Goals 2000 programs with a top-down push for standards (Evans, 2004). After *A Nation at Risk*, social studies educators suggested a national framework for social studies so that students graduating from high school would be exposed to similar content at similar levels (Davis, 1984).

Social studies was filled with alternative scope and sequence curriculum proposals in the 1990s (Martorella, 2001). The curriculum discussion about social studies was highly affected by standards movement in the 1990s. Three concurrent projects for developing standards for social studies in the broader arena were seen during the years in which the standards were being developed. These projects included the development of standards for the teaching of civics and government, geography, and history. These three projects were funded by the U.S. Department of Education (Evans,

2004). On the other hand, the National Council for the Social Studies did not receive any federal funds; and set national standards by using its own funding (Thornton, 2005).

Unlike mathematics and science organizations which created unified standards (NSTA and NCTM), the social studies organizations did not respond with a unified voice. The Center for Civic Education (1994) prepared civic standards called *National Standards for Civics and Government* for students in kindergarten through grade 12 supported by the Office of Educational Research and Improvement of the U.S. Department of Education and the Pew Charitable Trusts. The National Center for History in the Schools (1996) addressed one of the major goals for national education reform developed after *A Nation at Risk* and published the *National Standards for History*. National Council for Geography Education (1994) built a national consensus regarding the study of geography and produced *Geography for Life: National Geography Standards 1994*. The National Council on Economic Education (1997) aimed to raise the quality of economic education in America's school and prepared *Voluntary Content Standards in Economics*. The importance of social studies ensured that policymakers, educators, parents, and citizens of all kinds will want to know what students should be taught, how they will be taught, and how students achievement will be evaluated (NCSS, 1994). The National Council for the Social Studies (1994) designed the national curriculum standards to answer these questions. These standards were published in the book, *Curriculum Standards for Social Studies: Expectations of Excellence*. This effort resulted 10 themes, which affiliated the concerns of educating citizens (NCSS, 1994). These 10 themes are:

- Culture
- Time, continuity, and change
- People, places, and environment
- Individual development and identity
- Individuals, groups, and institutions
- Power, authority, and governance
- Production, Distribution, and society
- Science, technology, and society
- Global connections
- Civic ideas and practices (NCSS, 1994, p.15).

Concept Learning in Social Studies

Before starting concept learning in the social studies, knowing the nature of the data sources would be beneficial for readers. Most of the citations that the researcher used are from 1960s and 1970s. Because of the new social studies movement and the structure of discipline movement, several data sources about concept learning in the social studies are available for researchers. In addition, the researcher used numerous contemporary citations. Most of the contemporary citations are taken from textbooks and method books because no one is doing concept learning in the social studies. The reason for this could be the focus on core subjects as a result of the accountability movement beginning in the 1980s which has left social studies out of the mainstream as well as the fragmentation of the field.

David Ausubel (1968) sharply reminded us of the importance of concept by “anyone who pauses long enough to give the problem some serious thought cannot escape the conclusion that man lives in a world of concepts rather than in a world of objects, events, and situations” (p. 505). Similarly, Glaser (1968) mentioned the importance of conceptual learning and asserted that both basic elementary behavioral

processes (discrimination and associations) and more complex behavioral processes (problem solving, thinking, and creating) lie the domain of concept learning. Briefly, these two authors affirmed that if we interact with concepts, substantial comprehension of data occurs. Concepts enable us to simplify and organize environment and communicate efficiently with others in a conceptual world which we build through both informal and systematic interaction (Martorella, 1972).

Concepts are the main component of effective social studies content. Concept formation needs factual information, but social studies content cannot be acquired only by memorizing facts. Texas Education Agency (TEA) (1975, 1999) warned educators about the impossibilities for a person to learn or teach all known facts. Today, this warning is more essential. Pervasive technological improvements have caused an information explosion, which poses a significant challenge, for not only teachers but also students. In this technological era, students are exposed to an enormous amount of information. Technology makes the world more reachable to students. Technology has brought exposure at an early age to considerable information about people, places, and events. In addition, each year's knowledge becomes obsolete another year. Thus, both elementary and secondary social studies curriculum need a deep, more varied content in order to keep students' interest (Fraser, 1969). Also, students must have some logical structure to organize and classify the overwhelming amount of arbitrary information. In order to handle this huge amount of knowledge explosion, students should learn the critical concepts of each social studies discipline. Through the main concepts, social studies educators can use a small part of the information to teach out of a huge body of

knowledge for each discipline (Fenton, 1967). In addition, Fenton (1967) expressed his belief about the necessity of inquiry to order to accomplish information explosion.

Concepts play a key role for the process of inquiry. Attaining more concepts for the student is a crucial tool for the inquiry. Because structure influences the hypothesis that one can develop and hence control inquiry, learning to use of concepts is one of the key objectives of social studies. This is where the concepts enter the teaching-learning picture. A social studies curriculum that is organized around concepts can help students to understand meaningful relationships (TEA, 1999) and to handle new problem of meeting the challenges of on ever changing world. In 2012, students are more exposed to a huge amount of arbitrary information. Thus, students need to organize this arbitrary information around concepts to become active, inquiring citizens in the society. Therefore, it can be concluded that, acquisition of concepts and generalization is fundamental among the purposes of social studies.

Dealing with what should be taught and what information is most valuable is one of the big challenges for social studies educators in the explosion of the knowledge era. During the last decades, several efforts have been made throughout the nation to revise the social studies curriculum (NCEE, 1997; NCGE, 1994; NCHS, 1996, NCSS, 1994). One of the characteristics of almost all research to reform social studies curriculum is organizing ideas. Before engaging in researches about concept teaching in social studies, one must understand what he is trying to accomplish. This means one should clearly understand the definition of concept, the organization of knowledge, the importance of concept, conceptual learning, and researches about concept.

Definition of Concept

Before starting to discuss the organization of knowledge and conceptual learning, clarifying precisely the definition of concept is crucial. However, there is no consensus among the definitions of the concept. Gagne (1965) stated this variety of definitions “there is great variation in the ways in which the term "concept" is used by educational writers and, accordingly, a variety of descriptions of the essential conditions for learning concepts by students” (p. 187). Psychologist, social scientist, and educators have offered several definitions of the concept. In his article, Platt (1963) revealed this semantical confusion. The selected definitions of the term of concept below express the differences of opinions that exist concerning the properties of the concept.

The psychologist Robert M. Gagne maintained that “concepts are prior to principles and, in this sense, are simpler than principles. To learn a principle, one must have previously learned the concepts of which it is composed” (Gagne, 1965, p. 195). In his definition, Gagne articulated concept as an essential part of principles instead of categorization. In his influential book, *A Study of Thinking*, Bruner and his associates (1977) defined concept as “the network of inferences that are or may be set into play by an act of categorization” (p. 244). In this definition, Bruner expressed concepts as a relationship instead of an entity unto itself. Tanck (1969) mentioned critical attributes and categorization. Tanck (1969) defined concepts as “generalized bodies of attributes associated with the symbol for a class of things, events, or ideas. Attributes are distinguishable characteristics or properties of things, events, or ideas. A concept is the abstract body of meaning a person associated with the symbol for a class of things,

events, or ideas” (p. 101). He also approached the concept as an essential part of generalization. Other psychologists, DeCecco and Crawford (1974) defined concept from the classification perspectives. They defined concept as “a concept is a class of stimuli which have common characteristics. All concepts are referring to classes of stimuli. Concepts are not always congruent with personal experience, but they represent human attempts to classify our experience at least crudely” (DeCecco & Crawford, 1974, p.288). Tennyson and Park (1980) highlighted critical attributes on their definition. They defined the term as “a concept is assumed to be set of specific objects, symbols, or events which share common characteristics (critical attributes) and can be referenced by a particular name or symbol” (p.56).

Social studies educators defined concept a little different than psychologists. Quillen and Hanna (1961) looked at concept from the perspective of ordering and meaning. They expressed their opinion as “a concept is a general idea, usually expressed by a word, which represent a class or group of things or actions having certain characteristics in common. Concepts give order and meaning to experiences (Quillen & Hanna, 1961, p. 187-188). Hilda Taba, who promoted inductive concept learning, has considered the concept as abstraction. She defined concept as being “essentially high level of abstraction expressed in verbal cues and labels” (Taba, 1965, p.465). She also stated in the later that concept is a distinct characteristic of human beings. John Jarolimek (1966), former president of the National Council for the Social Studies, defined concept, “when we refer to the meanings associated with words and symbols in this way, we are defining concept” (p. 534). Jarolimek regarded concepts as categories

of meaning. The Social Studies Curriculum Center in the Syracuse University focused on identification of social studies concepts in 1968. The center has composite statements drawn from the literature and used a working definition of concept as:

- An individual's own way of making meaning of things he has experienced.
- A mental image which assists a person in classifying his experiences, and which continually changes as his experiences accumulate.
- An abstraction or general idea in the mind of a person which represents a class or group of things or actions having certain characteristics in common.
- A synthesis of a number of things an individual has experienced and conclusion he has drawn from his experiences.
- Represented by a verbal symbol which indicates the real content of the insights and meanings the word evokes in the mind of an individual (Fancett et al., 1968, p. 4).

The center's definition is the most comprehensive definition of concept. The most critical point in this definition is that the center claimed that there is a difference between people's understanding of particular concepts. Martorella (1972) stated the same thing that the professor may have a different concept of automobile than the service station mechanic but enough agreement on the critical attributes of their concept exists normally. Different from the center's definition, Martorella (1971) asserted that critical attributes are necessary to define a given concept. Parker (2001) followed Martorella's definition and defined concept as "ideas". He continued "the concepts refer to the attributes shared by all examples. That is the most concise definition of concept: the critical attributes shared by all examples" (p. 258). Sunal and Haas (2005) agreed with Martorella and Parker, and defined concept as "a set of factual statements that have common characteristics and distinguish any and all examples of the concept from non-examples" (p. 86).

Starting with the new social studies movement, the trend among educators in the social studies has turned to the use of concepts and generalizations as organizing schemes in an attempt to handle the problem of information explosion (Jarolimek, 1966). The main solution for the problem is using fundamental concepts and organization of knowledge which has high transfer value and helps students to understand the phenomena.

Organization of Knowledge

The organization of knowledge in the educational materials has been studied extensively in educational planning since the 1960s (Ausubel, 1964; Bruner, 1960; Gagne, 1970; Tanck, 1969). Social studies curriculum covers an overwhelming amount of information. In addition, the amount of information is increasing at a rapid rate (Jarolimek, 1966). The solution is teaching students how to think. Social studies educators should consider and use the tools of taught; facts, concepts, generalizations (TEA, 1999). Also, understanding the structure of abstract knowledge and how this knowledge can be learned is essential to equip students with the skills of reflective thinking.

Knowledge is defined as intellectual products that people have developed as a result of their own psychological processes (Tanck, 1969). Knowledge is classified into four components: facts, concepts, generalization, and construct (Ausubel, 1964; Morrisett, 1966; Jarolimek, 1966; Tanck, 1969). Figure 1 shows these components.

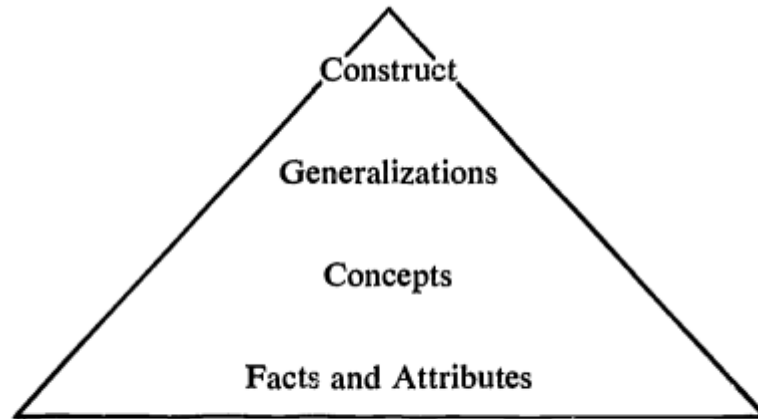


FIGURE 1: Elements in the Model

Figure 1. Elements in the Model (Tanck, 1969, p. 101).

Fancett et al. (1968) defined fact as “item of information and data which can be checked for accuracy and which is generally accepted to be true” (p.5). They also postulated that facts are the main component of development of the concept. Facts can be observed using the five senses in the form of observation (Parker, 2001; Sunal & Haas, 2005). In the social studies, facts come from the observation of people, objects, and events. They also come indirectly from the experiences of others (Sunal & Haas, 2005). Even though facts promote precision in thinking, there is no value in just learning facts (Fancett et al., 1968; Lewenstein, 1963). Bruner (1960) warned us that teaching an unconnected set of facts has a short half life in students’ memories. He mentioned that the only way of preventing loss of memory is the organization of facts.

Most social studies textbooks are filled with statements of facts. However, the range of facts is almost limitless because knowledge doubles each year (Lewenstein, 1963). According to Sunal and Haas (2005) traditional social studies lessons promote

fact learning and it resulted in inadequate students' understanding. Becker (1969) defined this situation as the crisis in learning and proposed a solution that conceptual learning helps student to handle this problem and understand and participate rapidly changing world.

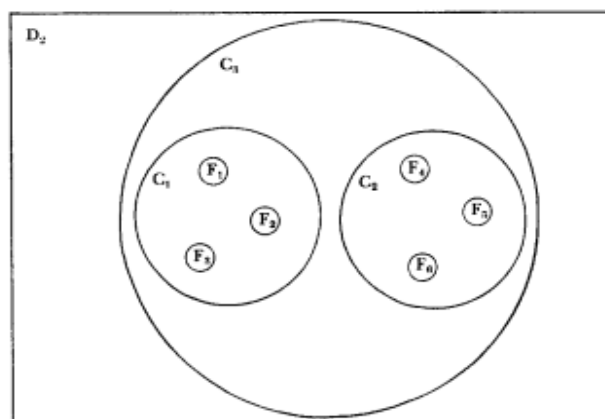
Concept is fully defined by a set of features, their probability values, and the relationship among the features. Concepts cannot be observed by the senses but, they are made up of examples and accumulation of facts (Parker, 2001). This is the most notable difference between facts and concepts. Concepts also classify facts into categories. Sunal and Haas (2005) articulate that all facts that students learn would be difficult to remember without concepts. In addition, concepts are transferable from one setting to another. On contrary, facts cannot be transferable. They are useful and applicable only in their settings (Jarolimek, 1966).

Generalization, the third component of knowledge, is a statement of the relationship between two or more concepts (DeCecco & Crawford, 1974; Morrisett, 1966). In other words, it is a linkage among concepts. It also constitutes an assertion that a relationship exists between or among classes (Tanck, 1969). Generalizations are more complex than concepts. Students must understand the concepts before they can see the relationship between or among them (Fancett et al., 1968). Generalization is applicable to whole categories rather than specific examples (Tanck, 1969). Vygotsky also expressed the importance of systematical hierarchical relationship between concepts that is reflected in generalization (Vygotsky, 1962). Concepts and generalization are related to each other. Both concepts and generalization help students to assign meaning and

significance to their experiences and to transfer intellectual activities. They also facilitate the use and recall of information (Fancett et al., 1968).

The relationship between facts, concepts, and generalization is best understood by a figure which was drawn by Martorella (1971). Figure 2 shows that facts are a component of data and clusters in a special interrelationship with concepts. It also shows how concepts are related to generalization. Figure 3 gives an example for the each component of the knowledge.

Briefly, concepts are generated from facts, and generalization derived from concepts. All three are the part of theories (Martorella, 1971). A theory is a structure of concepts and good theories depend on good concepts (Morrisett, 1966). This model of organization of knowledge allows students to classify and organize a body of knowledge. It may also recommend some criteria for selecting the most valuable knowledge to teach and some ways to define objectives (Tanck, 1969). Understanding the relationship between facts, concepts, and generalizations helps teachers to make inferences about appropriate instructional procedures (Martorella, 1972).



The Generalization: Cats and Dogs Are Animals. The relationship of sets of facts to concepts within the context of relevant data, resulting in a generalization, where D_2 = all data relating to animals, C_1 = a concept of dog and F_1, F_2, F_3 = facts about dogs that represent C_1 's criterial attributes, C_2 = a concept of cat and F_4, F_5, F_6 = facts that represent C_2 's criterial attributes, and C_3 = a concept of animal.

Figure 2. Concepts and Generalization (Martorella, 1971, p. 51).

FIGURE 3: The Model of Abstract Knowledge with Examples

A STRUCTURE OF KNOWLEDGE

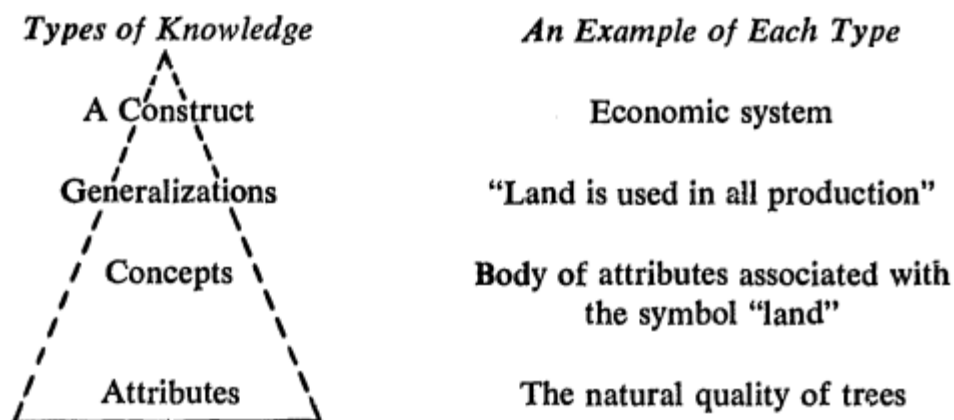


Figure 3. The Model of Abstract Knowledge with Examples (Tanck, 1969, p. 112).

The Acquisition of Concepts

Concept learning is defined as the identification of the critical attributes of concept which can be generalized to newly encountered situations or examples and differentiates examples from non examples (Tennyson & Park, 1980). Concept learning is also defined as a generalization within a class and discrimination between classes (Mechner, 1965). Concept learning is a perpetual process which requires students to analyze, synthesize, and evaluate their experiences (Kendall, 1966). Similarly, Jarolimek (1966) postulated that concept development can be defined as information sorting, discrimination process, and categorizing. The concept learning process requires three steps: defining the relevant category, discriminating examples from non examples, and naming (Martorella, 1971). In the social studies classroom, the goal of concept learning is to generate labels for experiences for recalling information easily. Also, concept learning aims to assist students to comprehend the relationship between concepts (TEA, 1975). Gagne (1970) postulated that the acquisition of concepts makes instruction possible. He continued that the use of positive examples can help learners to acquire concepts and generalization will occur.

Defining the relevant category is the formulating or stating the critical attributes. An attribute is a distinctive feature of the concept. It varies from concept to concept. Attributes are necessary to distinguish one concept from another concept. There may be several attributes to assign a given sample to a concept class. The number of attributes is changeable, and some of them are more obvious than others (DeCecco & Crawford, 1974; Merrill, Tennyson, & Posey, 1992). However, defining the attributes does not

provide adequate concept learning. The next step would be distinguishing examples from non-examples attainment of a concept.

Several studies focused on facilitating of concept learning through an instructional paradigm which sequences examples and non-examples according to defined relationships of attributes (Tennyson, 1973; Tennyson, Woolley, & Merrill, 1972). Positive example is defined as the example that contains the critical attributes of the concept. On the other hand, negative examples or non-examples are defined as those that lack at least one of the critical attributes (Martorella & Wood, 1971; Merrill, Tennyson, & Posey, 1992). Some researchers mentioned that positive examples increase concept attainment and negative examples are not needed for concept learning (Callentine & Warren, 1955; Luborsky, 1945). On the other hand, some researchers articulated that educators should use both positive and negative examples (Tennyson, 1973; Tennyson, Steve, & Boutwell, 1975). Indeed, Klausmeier (1976) stressed the importance of examples and non-examples. He asserted that students may only memorize a string of verbal association if their teacher provides only the definition of concepts without examples and non-examples. Thus, researchers concluded that giving examples and non-examples of concepts helps students to learn generalization behavior (Klausmeier, 1976; Markle & Tiemann, 1969; Merrill & Tennyson, 1977; Tennyson, Woolley, & Merrill, 1972; Tennyson, 1973; Tennyson, Steve, & Boutwell, 1975; Tennyson & Park, 1980).

Acquisition of concepts makes a subject more comprehensible. Bruner (1960) postulated that acquisition of concepts in early grades helps later learning. Other

researchers finding supported Bruner's ideas. Ausubel (1968) agreed with Bruner that learned concepts facilitate the acquisition of new concepts. He also stated that acquired concepts are used in both basic and more complex varieties of meaningful problem solving to discover new concepts. Jones (1997) mentioned that any existing concepts that students acquired positively affect their future learning. Sunal and Haas (2005) agreed with this idea and articulated that concept learning requires students to use their previous learned concepts.

In addition, the way of acquisition of concepts differs. Some concepts are acquired in informal ways while others are acquired in systematic ways. Vygotsky (1962), a researcher on cognitive psychology, classified concept learning situations into two categories: spontaneous and scientific. He defined the spontaneous way those students developed naturally from contacts with their daily life and their environment. On the other hand, scientific way is how those students acquired concepts in formal instructional sessions. Gagne (1965) indicated that students acquired some concepts by direct interaction with their environment, while some other concepts required the use of language and the latter kind of concepts are real rules for classifying objects or events.

Teaching of Concepts

There are two strategies for teaching concepts and generalization for the social studies classrooms; the deductive strategy and inductive strategy. The deductive strategy begins with specifics and proceeds to general. The teacher explains what is to be achieved at the beginning. It is characterized by the introduction of the concept at the beginning of the instruction. Then, teacher presents several examples and affords the

opportunity to verify the concept (TEA, 1975). On the other hand, the inductive strategy begins with specifics and proceeds to generalizations which are tested. One of the leading people in inductive learning, Taba (1966) postulated that concept learning should be built from concrete to abstract. Thus, students should start with basic thinking before they master the complex ones. In the inductive strategy, students' attention is focused on certain attributes during the learning (TEA, 1975). The inductive concept learning strategy follows three steps: identification and listing data, classifying, and conceptualizing (Taba, 1966). The negative characteristic of the inductive approach is that it is usually time consuming for the classroom (TEA, 1975).

Based on these two strategies, several researchers conducted models for concept teaching (Crabtree, 1967; DeCecco, 1968; Gagne, 1970; Taba, 1966; Tanck, 1969). The main purpose of conducting models for concept teaching was providing social studies teachers a useful instructional tool because concepts in social studies are difficult to understand. Many of them are abstract concepts (Fancett et al., 1968). These models offered teachers some approaches and allowed generalizability for a specific lesson. These models share some main commonalities; even though, they are different from each other. The common characteristics of concept teaching models were discussed by Martorella (1971), and he found six similarities between these models. Martorella (1971) asserted that all concept teaching models use examples and non-examples for concept acquisition. Systematic instruction is another commonality among concept teaching models. These models devoted careful attention to sequenced instructional processes. All of these models also considered the importance of prior knowledge to acquire new

concepts. They also agreed that practice is needed to acquire a new concept. In addition, the models indicated a radical shift in the form of curriculum organization. The last common thing among the models is evaluation. All models highlight the need of evaluation for concept acquisition. In the next paragraphs, three selected models that can be applied to social studies classroom will be discussed.

Robert M. Gagne (1965) developed a model for concept learning. He first classified concepts into two categories: concrete and relational concept and provided two models. His model for concrete concepts includes five steps. In the first step, teacher has students to repeat the concept names. In the next step, teacher provides several examples of the concept and has students to identify and specify the concept. In the third step, teachers provide several examples and non-examples of the concept. Then, the teacher presents extra examples of the concept and wants students to specify the concept name. The final step, the teacher present the students with a situation containing a new example of the concept, and asks them to identify the concept. Gagne's model for relational concept has five steps, as well. In the first step, teacher states the expected performance when learning is complete. In the next step, teacher provides instructions to remind of the component concepts that make up the rule. Then, the teacher provides verbal statements that will allow students to organize the rule. Next step, teacher asks questions to illustrate the rule. Finally, teacher requires students to make verbal statements of the rule.

Hilda Taba (1966) formulated another model for conceptual learning. She highlighted three types of activities with which the learner must engage. In the first step,

teachers provide information to students and have them list the items of information. Then, the teacher requires students to group or classify these items according to their similarities. Finally, the teacher wants students to develop labels for these groups and order the items in groups under appropriate the labels.

DeCecco and Crawford's (1974) model of concept teaching contains seven steps. In the first step, the teacher describes the performance expected of the student. In the concept learning, expected performance is the correct identification of a new concept. In the second step, the teacher makes essential attributes dominant. In order to do this, the teacher must make an analysis of a concept that he decides to teach. In the third step, the teacher provides useful verbal mediators to the students. Providing certain names and labels helps students to acquire a new concept. The following step requires providing positive and negative examples about concept. It was discussed before how positive and negative examples affect concept learning. In the fifth step, teacher simultaneously presents both positive and negative examples of the concept. Teacher provides occasions for student responses and the reinforcement of these responses in the next step. Reinforcement provides informational feedback to the students. The last step is assessing the learning of the concept.

Knowing these models helps social studies teachers to organize their teaching around concepts. These models are also useful tools to increase students' concept learning. The models provided some instructional approaches to teachers and devoted careful attention to sequenced instructional processes.

The Importance of Conceptual Learning in the Social Studies Classroom

Conceptual learning provides several advantages to students in social studies classrooms. The main advantage of concept learning is that concept provides students an intellectual filing system for meanings. Concepts also help students to recall and use knowledge. Through using concepts, students are able to establish order of the many specific perceptions and experiences (Jarolimek, 1966). Fancett et al. (1968) mentioned similar things that concept helps students organize information so that data take on new meaning as they are related to each other. They asserted that:

Facts, dates, places, names fade quickly from a student's memory if they stand alone. Often this is as it should be, for there is no doubt a limit to the amount of details anyone should retain. If, however, it is necessary for the student to possess information in order to comprehend other ideas, retrieval will be facilitated if the information is tied to a major concept in the student's mind. Once concept has begun to form in the student's mind the relevant and significant data he meets will be likely to take on meaning in terms of the concept (Fancett et al., 1968, p. 15).

Vygotsky (1962) called attention to the role of concepts on facilitating communication. He stated that students are able to generalize realities by using concepts. Many (Ausubel, 1968; DeCecco & Crawford, 1974; Fancett et al., 1968) agree with Vygotsky that students can group similar items into categories by the concept, and it makes to simplify their environment. Grouping involves placing an object in a class and therefore, reducing the complexity of the environment. DeCecco and Crawford (1974) warned us about the importance of this process "if the child does not learn concept and generalization low in the hierarchy, the learning of those higher in the hierarchy becomes difficult or impossible" (p.297). Consequently, concept learning improves

reception learning, problem solving, and communication. Fancett et al. (1968) stated that concepts facilitate the idea exchanges in social studies classroom as well as daily life. They showed the way of getting the benefit from concepts in social studies classroom “if we expect students to benefit from communication when they are reading social studies materials, listening to an explanation, or exchanging ideas in a discussion the concepts used must serve to clarify issues” (p. 15). Problem solving, communication, and inquiry are crucial for realizing the aim of social studies to nurture active, inquiring citizens. Therefore, concept learning plays a key role to realize this aim.

Social studies is an integrated study of the social sciences and humanities (NCSS, 1994). According to the National Council for the Social Studies definition, social studies provides a systematic study drawing upon “anthropology, archeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as appropriate content from the humanities, mathematics, and natural sciences” (p.3). Because of the nature of the social studies, students are exposed to a large number of names, places, events, and dates in the social studies classroom. However, these names, places, events, and dates are easily forgotten. Conceptual thinking permits students to deal with generalities rather than specifics (TEA, 1975). Also, retrieval of the information will be facilitated if the information is tied to key concepts (Fancett et al., 1968).

Concepts are a large portion of the social studies content that students need to construct (Sunil & Haas, 2005). Concept has also been considered as central for the inquiry, evidence, argument, and thesis, which can be classified in social science

reasoning (Parker, 2008). These ideas parallel the idea of Bruner that “the power of great organizing concepts in large part that they permit us to understand and sometimes predict or change the world in which we live in” (Bruner, 1977, p.120).

Concept and Reflective Thinking

The importance of reflective thinking was mentioned by John Dewey (1910) at the beginning of the 20th century. Dewey asserted that reflective thinking is essential to maintain the state of doubt and carry on systematic and protracted inquiry. He defined reflective thinking as “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (Dewey, 1933, p.9). Dewey (1933) mentioned the importance of concept for the reflective thinking perspective. He stated:

It would be impossible to over-estimate the educational importance of arriving at conceptions: that is, meanings that are general because applicable in a great variety of different instances in spite of their difference. .. They are known points of reference by which we get out bearings when we are plunged into the strange and unknown... Without this conceptualizing, nothing is gained that can be carried over to the better understanding of new experiences (Dewey, 1933, p.153).

Reflective thinking and inquiry activities have been essential parts of social studies since its beginning as a school subject. Social studies curriculums have been influenced by numerous people working in the Deweyian traditions, which emphasized experience and reflection, during the 20th century (Dougan, 1989). The topic of reflective thinking or inquiry has dominated much of the social studies methodological discussion (Ausubel, 1968; Crabtree, 1967; Fancett et al., 1968; Hunt & Metcalf, 1968). Hunt and Metcalf (1968) postulated that the most fundamental aim of social studies is to

help students reflectively examine issues in the problematic areas of American culture. Similarly, Fancett et al. (1968) mentioned the role of inquiry in the social studies that a major goal of inquiry in the social studies classroom is to help students to develop ways of thinking which utilize the intellectual skills. Inquiry refers to instructional settings in which students are encouraged to arrive at inferences from observed subject matter (Martorella, 1971).

The total of man's knowledge probably doubles each decade. Fenton (1967) pointed out the knowledge explosion problem. He questioned teaching children the mass of facts which burden so many social studies courses. According to him the solution is learning a method of inquiry. Without inquiry students cannot continue to learn independently once the classroom door shuts behind them for the last time. Reflective thinking in social studies does not deny substantive learning; however, it denies the worth of a storage model of learning that requires memorization of numerous facts (Crabtree, 1967). Therefore, reflective thinking and inquiry take on special importance in social studies teaching because without it, the subject can easily degenerate into little more than memorization of information that students perceive as irrelevant to their lives.

Concepts are a large portion of the social studies knowledge that students need to construct (Sunal & Haas, 2005). Concepts have been considered as central for the inquiry, evidence, argument, and thesis, which can be classified in social science reasoning (Parker, 2008). These ideas look like parallel the idea of Bruner that "the power of great organizing concepts in large part that they permit us to understand and sometimes predict or change the world in which we live in" (Bruner, 1977, p.120). The

relationship between concept and reflective thinking may be seen in the conceptualization process inherent in the reflective thinking. If teachers engage their students in reflective thinking, they must teach categorizing, organizing, and relating observations into an overall pattern, as well as inferring and verifying (Martorella, 1971). Martorella stated the relationship “Also consistent with Dewey’s notions concerning the initiation of reflective thought, an act of concept learning may be seen as being triggered by the confrontation and delineation of puzzling, distributing, curious, or problematic situations” (Martorella, 1971, p. 8).

Research about Concept Learning in Social Studies

Concept learning is considered as one of the central objectives of social studies education (Hunt & Metcalf, 1968; Fancett et al. 1968; Taba 1966; Tanck, 1969; Martorella, 1971). These social studies educators postulated that concept plays an important role for the process of inquiry. The most fruitful tool for the inquiry is attaining more concepts for the students. Learning to use concepts is one of the key objectives of the social studies because structure influences the hypothesis one can develop and hence control inquiry. Reflecting this objective, myriad curriculum materials have emphasized that they are designed to teach significant social science concepts (Martorella, 1971).

Concept learning was an objective for the social studies and it received considerable attention among social studies educators in 1960s and 70s (Hunt & Metcalf, 1968; Fancett et al. 1968; Taba 1966; Tanck, 1969; Martorella, 1971). The majority of these projects dealt with the hypothesis-making aspect of the structure with concepts and

tried to identify groups of concepts that are essential to the social studies. Numerous social scientists involved in the search for identification of basic concepts from the social sciences, and several lists have been compiled. While concepts have always been a part of the social studies curriculum, efforts to incorporate the so-called “structure” of the social sciences into the curriculum have increased the importance of concepts to an understanding of social studies. Many curriculum groups identified key concepts in the social studies and developed curriculum materials to teach them (Reyes & Smith, 1983).

The reform on the social studies education of the 1960s and 1970s was about organizing ideas that is crucial for the substantive components of the social studies curriculum. This concern has gone to many directions; identification of concepts, exploring various dimensions of concepts, the ways of attaining concepts, the sequence of attaining concepts, and the teaching strategies (Jarolimek, 1971). Many social studies projects attempted to identify the main ideas of disciplines and to define and sequence the substantive content to be taught the central concepts and generalizations of the social studies during the decades of 1960 (Crabtree, 1966). Similarly, Inn (1966) mentioned that curriculum researches for social studies have focused on the development of key concepts selected from the social sciences in the decade of 1960. The new social studies tried to cope with deciding how to teach knowledge and how to teach students to use the process of inquiry (Fenton, 1967). A major emphasis in the 1960s curriculum research projects in social studies has been the effort to establish ideational frameworks, or conceptual structures for the school program. Learning within an organized structure of

ideas is efficient. Specific facts become meaningful when their relationship to concepts and generalizations is understood (Fraser, 1969).

The Social Studies Curriculum Center at Syracuse University was one of a number of centers in the United States that experimented and prepared materials for the social studies curriculum of both elementary and secondary schools. They contributed to conceptualization of the social science curriculum and published a booklet that was a result of a five year project (Price, Smith, & Hickman, 1965). In this booklet, they described 34 concepts that were selected by its project workers and consultants as some of the most significant ideas on which to build elementary and secondary social studies curriculum. The New York Board of Education advocated a similar approach to concept development in the social studies curriculum. Concepts, introduced in kindergarten, were developed with increasing complexity at each succeeding grade level through grade twelve. New York Board of Education recognized concepts as assisting the pupil in developing a cohesive picture of his social world (Price et al., 1965). The State Boards of Education of California and Wisconsin also advocated curricula that stressed concepts spiraling toward increasing levels of complexity. *Concepts and Structure in the New Social Science Curricula* was published in 1966 by Irving Morrisett (Morrisett, 1966). Morrisett compiled conference presentations that were held in connection with the social science consortium to provide an exchange of ideas about approaches taken to social science content in new curriculums. In this conference book, Feigl (1966) discussed the structure of knowledge and concepts and the place of concepts in the organization of knowledge. Another educator, Senesh (1966) expressed his ideas about organizing a

curriculum around social science concepts which was similar to New York, Wisconsin and California studies. Sigel (1966) postulated the importance of concepts in the process of learning and structuring knowledge. In the same year, Taba (1966) published her project result. She is one of the advocates of spiral curriculum and inductive teaching and her idea is that students learn concepts earlier and more systematically if their curriculum is designed to develop cognitive functioning and taught by strategies designed to develop cognitive skills. She tested her ideas and results confirmed her hypothesis, but they were not consistent. Fancett et al. (1968) published *Social Science Concepts and the Classroom* for an introduction to the growing body of material devoted to concept approach. The authors mentioned that their priority was providing a useful guide for social studies teachers, and introduce them to the concept approach in teaching social studies materials. In this publication, Fancett et al. (1968) discussed the definition of concept and its relationship with facts and generalization, the importance of concepts in the social sciences, and then they expressed how students develop concept and how concept is related to inquiry and discovery. Finally they mentioned how social studies teachers can use concepts in the social studies classroom.

Similarly, the National Council for the Social Studies advocated conceptual learning and provided some techniques for social studies teachers in the 39th yearbook, published in 1969 (NCSS, 1969). They devoted one chapter to the concept in the yearbook. In this chapter, Tanck (1969) presented definition of concept, generalization, and construct. He also explained the structure of knowledge that facts, concept,

generalizations, and constructs are arranged in a hierarchy. The author also outlined the techniques of teaching concepts and generalization for the social studies.

In addition, the Wisconsin Research and Development Center for Cognitive Learning focused on contributing to a better understanding of cognitive learning both children and youth. The general objectives of the research projects were identifying basic concepts for not only social studies but also language arts, mathematic, and science. Also, they aimed to develop tests to measure achievement of these concepts. Finally, they aimed to formulate a model of abilities in concept attainment (Tabachnick, Weible, & Frayer, 1970). The identification of basic concepts and development tests in the field of social studies explained in the working paper was published by Tabachnick and his associates titled *Selection and Analysis of Social Studies Concepts for Inclusion in Tests of Concept Attainment* in 1970. The social studies specialists chose three main topics, geographic region, man and society, and map and globe study in social studies and identified related concepts from the fourth grade programs and textbooks to each of the three main topics. A total of thirty concepts were selected. Ten concepts for each topic were randomly selected and analyzed to determine their constituent teachable elements. Analyses of all selected concepts and illustrative examples of test items are presented in this paper. One year later, the National Council for the Social Studies published a bulletin, and brought together some of the most eminent scholars who addressed conceptual learning in their research (Beyer, 1971). This bulletin consisted of four parts, what are concepts, why teach concepts, how can concepts be taught, and what are the implications of concept teaching. Beyer (1971) expressed that the main purpose

of the bulletin were engaging social studies educators in meaningful concept teaching. This bulletin consisted of some articles that editors believed offered the most useful definition of concepts, rationale for teaching concepts, some practical teaching strategies, and discussion of the significant implications from existing reports and articles (Beyer, 1971).

Another helpful source for teachers is Martorella's book about concept learning in social studies classroom. *Concept Learning in the Social Studies* was published in 1971. This book is based upon the idea that the learning of concept should be different from those used for other learning outcomes (Martorella, 1971). The main goal of this book is to apply concept learning researches to one specific subject, social studies in the curriculum. This book provides information for social studies educators about the nature of concepts, some research findings and alternative models of instructions for concept teaching as well as some conclusions about the process of organizing instruction around concepts. Martorella's book's first chapters provide social studies educators sufficient understanding and directions to develop appropriate instructional materials. One year later Martorella published another book, *Concept Learning: Design by Instruction* (Martorella, 1972). This book is paved by his earlier book, and many elements have been borrowed from the previous book. The difference in this book from the earlier one was that the finding about concept learning is extended to all instructional fields. Also, separate chapters were added which were written by field specialists and discussed conceptual learning in language art, mathematics, and science.

Texas Education Agency participated in highlighting the importance of concept teaching in social studies education. TEA published a handbook that contained some research on conceptual learning to provide assistance to social studies teachers in giving students conceptual perspectives (TEA, 1975). The handbook provided a concise discussion about the rationale of teaching concept and assisted teachers to see the discussion among the definition of concepts. TEA postulated that concept is an abstraction that refers to a class or group of objects. This handbook highlighted the importance of teaching concepts, advantages of teaching conceptual thinking, and generalizing from one situation to another. Also, the handbook included several principles for teachers to facilitate the learning of concepts for students. Furthermore, the handbook provided detailed information about two concept teaching strategies, deductive and inductive teaching methods. Finally, the handbook included evaluation criteria for conceptual learning and gave teachers some helpful lists of articles, books, and part of books which deal with the concept and concept teaching. TEA continued to think teaching concept was important by including information from the *Texas Social Studies Framework* (TEA, 1999).

Assessing the students' achievement on concept learning is another research field. Some researchers focused on the way of assessing students's learning (Harris & Tabachnick, 1971; Merrill, Tennyson, & Posey, 1992; Price, Hickman, Ferraro, & Mahood, 1968; Tabachnick, Weible, & Frayer, 1970, TEA, 1975). Harris and Tabacknick (1971) mentioned test development efforts for measuring achievement of selected concepts. Their study also included descriptive item and test statistics for the

test developed. Merrill et al. (1991) devoted a chapter about preparing a concept classification test in their book, *teaching concepts: An instructional design guide*. They stated that testing students' concept acquisition is appropriate to see if they can indeed perform classification behavior. TEA's handbook also devoted a chapter for evaluating concept teaching. The difference with the TEA handbook is that it analyzed teacher behavior and assessed students' behavior.

This research is interested in examining how students were successful on the State of Texas' standardized test, the Texas Assessment of Knowledge and Skills (TAKS). Knowing the brief history of high stake testing and understanding TAKS in the context of Texas public school is necessary.

The History of High Stakes Testing

After the launch of Sputnik in 1957, the American people felt that their children got left behind from their counterparts in the acquisition of a good education, and improving scientific and mathematical knowledge was crucial to protect the country. Thus, the political leaders reexamined American education (Eisner, 1995; Schuman, 2004). Using standardized tests to determine students' promotion and retention, remedial placement, and award academic honors accelerated due to the launch of Sputnik (Gallaher, 2003).

Another turning point in the standardized testing is the report of *A Nation at Risk*. In 1981, President Ronald Reagan appointed the United States Secretary of Education Terrence Bell a task force to recommend ways to improve nations' schools (McGuinn, 2006). Bell created the National Commission on Excellence in Education to examine the

quality of American education and prepare a report about it. The commission released a report *A Nation at Risk* that indicated how far behind American students were from their counterparts (Valencia & Wixson, 2000). The report had an enormous impact on the nation, and public attention turned to education. Also, the report was described as the start of the high stake testing movement (Berliner & Biddle, 1995; Eisner, 1995; Schuman, 2004). The report made some recommendations to schools to admit standards and follow the progress of students toward those standards through a testing program (Hayes, 2008).

A decade later, the Improving American School Act (IASA) was revealed. Started with President George H. W. Bush and continued with President Clinton, the IASA supported implementation of local and state standards-based reform including developing standards, aligning assessment, and accountability guidelines (McGuin, 2006). The most notable characteristic of IASA is that it requires for states to establish high standards and create and administer standard-based assessment to all students.

No Child Left Behind (NCLB) act is another critical step for the high stake testing. President George W. Bush announced NCLB in 2001, only three days after taking his office. NCLB obligates individual states to determine standards for high school graduation, attendance, safety, teacher competence, and student progress.

Texas Assessment of Student Learning

Since the research questions are concerned with the students achievement on concept questions on Texas Assessment of Knowledge and Skills Test (TAKS), understanding TAKS and high stake testing in the context of Texas public school is

necessary. Texas has had a series of testing experiments dating back to 1980. TAKS was the primary assessment in the Texas assessment system until 2011 (TEA, 2012); however, it evolved from over twenty years of periodic changes in legislation and policy.

Texas Assessment of Basic Skills (TABS) was the first Texas state mandated test. Texas Legislature passed a bill in 1979 amending the Texas Education Code to require the Texas Education Agency to administer high stake testing to assess basic skills competencies in mathematics, reading, and writing for Grade 3, 5, and 9 students. The Texas Legislature changed the wording of the Texas Education Code from “basic skills competencies” to “minimum basic skills” in 1984. Students started to take the Texas Educational Assessment of Minimal Skills (TEAMS) in 1985 as a result of the new education laws and included an "exit-level" test in 11th grade that must be passed for high school graduation. Similarly with the TABS, TEAMS assessed the subjects of reading, mathematics, and writing. The difference of TEAMS from TABS was that TEAMS was administered to students in Grades 1, 3, 5, 7, 9, and 11, with the eleventh-grade test being an “exit level” assessment. In order to improve education in Texas, TEA developed the Texas Assessment of Academic Skills (TAAS) in 1990. The development of the TAAS initiated a desire that students should attain higher levels of academic achievement. Beginning in the fall of 1990, TAAS was administered to students in Students in the Grades 3, 5, 7, 9, and 11 started to take the TAAS at the beginning of the fall of 1990. Students were required to meet the passing standards to receive a high school diploma. Similarly with TABS and TEAMS, the TAAS tested mathematics, readings, and writing (TEA, 2006a).

Texas Education Agency developed a new assessment program, Texas Assessment of Knowledge and Skills Test (TAKS), to replace TAAS in 1999 and began administration in the 2002-2003 school years (TEA, 2006a). The TAKS was designed to be more comprehensive and better assess the state mandated curriculum. TAKS evaluates standards set for each subject at the appropriate grade level that can be found in the Texas Essential Knowledge and Skills (TEKS). TEKS are the standards of learning for each subject designed to be used in Texas (TEA, 2006a). The TAKS is different from its previous versions based on the assessed fields. The TAKS measures the state curriculum in reading at grades three through nine, writing at grades four and seven, English Language Arts at grades ten and eleven, mathematics at grades three through eleven, science at grades five, ten, and eleven, and social studies at grades eight, ten, and eleven. The exit level or 11th grade TAKS scores became diploma dependant in the spring of 2004 (TEA, 1999; TEA, 2006a). TEA (2012) announced plans for the next generation of accountability tests for the state of Texas mandated by the state legislature at the end of January, 2010. The new test is called the State of Texas Assessments of Academic Readiness (STAAR) and will be used for end-of-course tests in high school as well as grade three through eight assessments. The new tests will be used beginning in 2011-2012 and are said to be significantly more rigorous than previous tests as they will measure both a student's achievement and academic growth.

TAKS Social Studies Test Development

Texas Education Agency considered the need to develop a high-quality, valid and reliable, assessment instrument. Thus, Texas educators such as teachers, curriculum

specialists, administrators were included in the test development process. Texas Education Agency (2009a) stated that many Texas educators have served on one or more of the educator committees involved in the development of Texas Assessment program. These committee members represented the diversity of the state -- geographically, ethnically, by gender, and by type and size of school district.

A number of groups are involved in the social studies assessment program as well as other fields. The first group is Student Assessment Division that is responsible for implementing the provisions of state and federal law for the statewide assessment program (TEA, 2009a). The second group is Pearson. Pearson has been TEA's primary contractor for the provision of support services to the statewide assessment program since September 1981. The third group is ETS which is an institution that specializes in test development processes and assessments. ETS worked with Pearson personnel, TEA staff members, and Texas educators to produce TAKS reading, mathematics, science, and social studies items (TEA, 2009a). The fourth group for social studies test development is Texas educators which includes teachers, curriculum specialists, administrators, and ESC staff. Texas educators play a key role in all phases of the test development process (TEA, 2009a). When a new assessment of social studies was developed, committees of Texas educators reviewed the state-required curriculum, developed appropriate objectives for the specific grades and subject areas tested, and provided advice on a model for assessing the particular subject that aligns closely with the curriculum (TEA, 2009a).

TAKS Social Studies Tests' questions were written by Pearson. Pearson employed item writers who had experience developing items for standardized achievement tests. These item writers were selected for their specific subject-area knowledge and their teaching or curriculum development experience in the relevant grades (TEA, 2009a). These item writers were trained prior to item development. Texas Education Agency reviewed TAKS Social Studies Test items, as well as other items, before assigning to the students. Texas Education Agency's Student Assessment Division invited committees composed of Texas classroom teachers, curriculum specialists, administrators, and regional ESC staff to work with TEA staff in reviewing test items. Committee members discuss each test item and recommend whether "the item should be field-tested as written, revised, recoded to a different eligible TEKS student expectation, or rejected. All committee members conducted their reviews considering the effect on various student populations and work toward eliminating bias against any group" (TEA, 2009a, p.16).

The various forms of the TAKS were piloted and, using psychometric modeling, test items which did not discriminate or were biased were reviewed and either modified or eliminated from the test bank.

CHAPTER III

DESIGN OF THE STUDY

Theoretical Framework Used for the Research

This study used secondary data analysis, which involves using data from federal, state, or other research organizations such as the National Center for Educational Statistics or other developed, large-scale databases. Secondary data analysis is a widely accepted type of educational research, and researchers have used it extensively (Strayhorn, 2009). In the educational research, the distinction between primary and secondary data depends on the relationship between the researcher who collected data and the researcher who analyzes it. Primary data is those which were collected by a researcher or researchers for the specific purpose or analysis under consideration (Boslaugh, 2007). On the other hand, secondary data is those which were obtained by another researcher or researchers, and it is available for other researchers (Sobal, 1981). Furthermore, some researchers emphasize the usefulness of secondary data analysis for exploring new research questions (Smith, 2008). From this perspective, Vartanian (2011) defined secondary data as “secondary data can include any data that are examined to answer a research question other than the question(s) for which the data were initially collected” (p. 3). The most comprehensive definition was provided by Hakim (1982) as “secondary data analysis is any further analysis of an existing dataset which presents interpretations, conclusions or knowledge additional to, or different from, those produced in the first report on the inquiry as a whole and its main results” (p. 1).

Secondary databases provide several advantages for the researchers. The first advantage is the maximizing generalizability because of the result that is produced by large scale secondary data analyses are inferentially robust (Strayhorn, 2009). Professional data collection is another big advantage of using secondary database. Data collection for federal and state data set is often performed by a staff member who specializes in that task and who may have years of experience (Boslaugh, 2007). Using secondary data saves money, time, and personnel (Glaser, 1963). Using secondary data is cheaper than doing original studies because someone else has already collected the data. Even if the researcher pays to get data, the cost is lower than collecting the data. Also, there is time saving advantage because the data has already been collected. Therefore, the researchers spend their time analyzing data rather than collecting data (Boslaugh, 2007). The use of secondary data provides researchers the opportunity to re-analysis and re-interpret existing data. The use of secondary data also provides researchers the opportunity to undertake longitudinal analyses, to research and understand past events and to engage in exploratory work to test new ideas, theories and models of research design (Dale, Arber, & Procter, 1988).

Several secondary data sources are available for the researchers such as National Center for Educational Statistics (NCES) within the United States Department of Education, National Science Foundation (NSF), Educational Testing Service (ETS), Higher Education Research Institute (HERI), and Texas Education Agency (TEA). These agencies provide researchers with a wide range of national and state level databases that can support different sort of research questions (Strayhorn, 2009).

This study focused on student performance on the Grade 8, Grade 10, and Grade 11 Social Studies TAKS Test, most specifically on the responses to concept and non-concept questions; therefore, quantitative methods of inquiry were utilized. Quantitative method is the collection and analysis of numerical data to explain, predict, and control phenomena of interest (Gay, Mills, & Airisian, 2006). For a quantitative research, researchers collect data in such a way that the data are easy to quantify, allowing for statistical analysis (Patten, 2009). The researcher used a non-experimental descriptive, correlational, and causal-comparative research designs. Non-experimental research is defined as:

Non-experimental research is systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable. Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables (Kerlinger, 1986, p.348).

In the non-experimental studies, researchers do not give treatment to the participants. Instead, they observe participants in order to describe them as they naturally exist without experimental treatments (Patten, 2009). Descriptive research is useful for investigating a variety of educational problems and issues. Descriptive research aims to describe the data and characteristics about what is being studied (Gay et al., 2006).

Other educational researchers are concerned with establishing interrelationship among variables (Cohen, Manion, & Morrison, 2000). Correlational research involves collecting data to determine, whether, and to what degree, a relationship exists between two or more quantifiable variables (Anderson, 1990; Gay et al., 2006). Causal-comparative research design is a research method in which investigators attempt to

determine the cause or consequences of differences that already exist between or among groups of individual (Frankel & Wallen, 2003). These are appropriate designs due to the desire of the researcher to examine data which is preexisting and cannot be changed or influenced in any way for the purpose of understanding the impact of one (or multiple) variable(s) on another (Chatterji, 2007).

Data Used in Analysis

To answer the research questions in this study, student performance on each item of the social studies TAKS test was required. The researcher submitted a request for data to the Texas Education Agency. The Texas Education Agency provided a text file that included a coding for grade level, ethnicity, gender, ESL status, raw score, scaled score, and item analysis for every Grade 8, Grade 10, and Grade 11 student who took the 2006 and 2009 Grade 8, Grade 10, and exit level (Grade 11) Social Studies TAKS Test. The researcher was interested in all students' item analysis. The Grade 8 Social Studies TAKS Test consisted of 48 questions; the Grade 10 Social Studies TAKS Test consisted of 50 questions, and the Grade 11 Social Studies TAKS Test consisted of 55 questions.

Texas Education Agency warned the researcher that some data were masked to comply with Family Educational Rights and Privacy Act (FERPA), and student identifying information was not included in the data to also comply with FERPA. Thus, the Texas Education Agency did not provide school and district level data for this reason. However, they assisted with state level data. They provided text files for each grade and each year. Totally, the researcher received, electronically, 12 text files; six of them comma delimited text files that included grade level, ethnicity, gender, ESL status,

raw score, scaled score, and item analysis for every students who took 2006 and 2009 Social Studies TAKS Test and six of them are coding files. The researcher first imported comma delimited text files separately into Excel to organize the data. Upon importing, the researcher recoded letters to numbers (Gender and Score Code Information) to allow statistical processes (Please look at Figure 4).

Then, the researcher separated the item responses data for each student from single column into separate columns for each question. After this process, the researcher coded wrong answer as “0” and correct answer as “1” to help statistical processes (Please look at Figure 5). Next, the researcher created a column and used excel formula to find the total number of concept questions that students answered correctly. Figure 4 and 5 showed the text file that was provided by TEA.

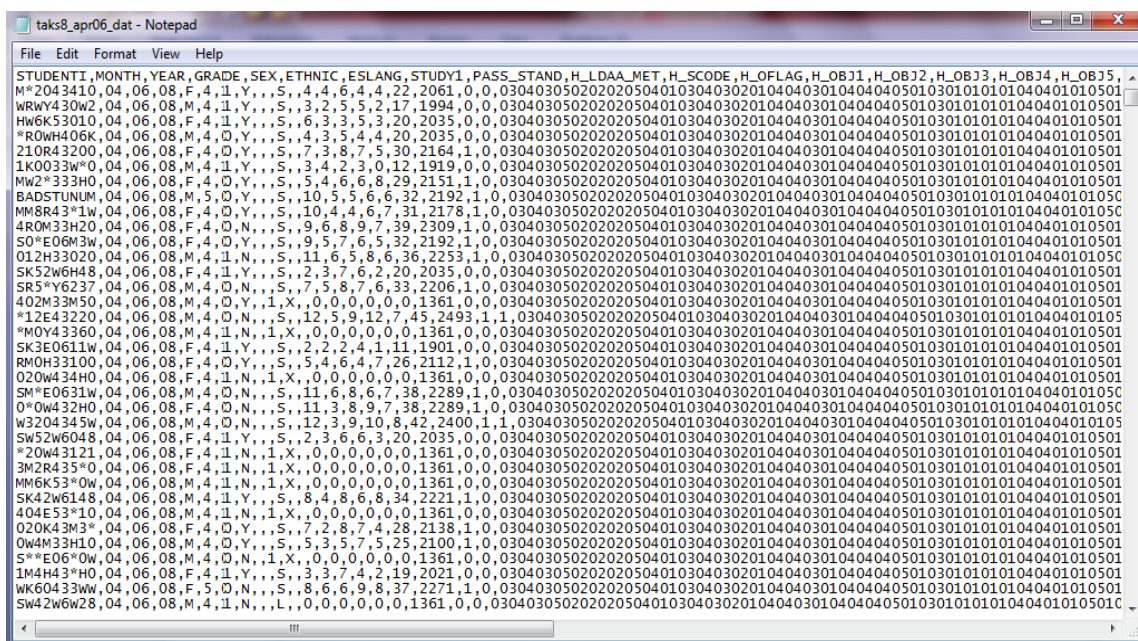


Figure 4. An Image of the Spring 2006 Grade 8 Social Studies TAKS Test Data. Received from the Texas Education Agency.

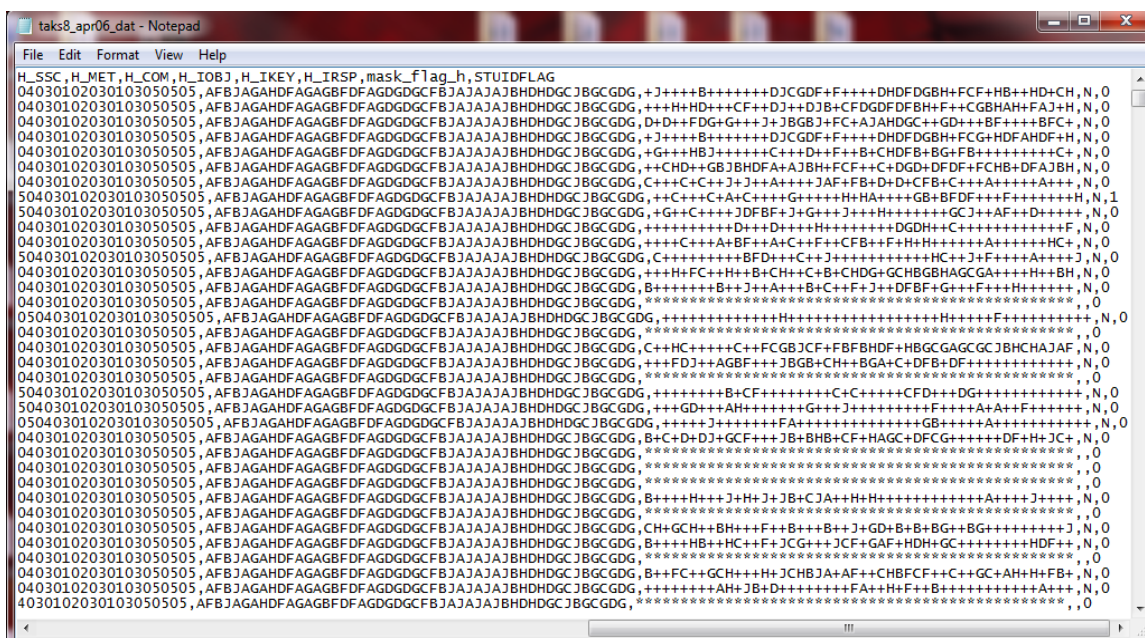


Figure 5. An Image of the Spring 2006 Grade 8 Social Studies TAKS Test Data Item Responses. Received from the Texas Education Agency.

Instrumentation

This study used spring 2006 and 2009 Texas Assessment of Knowledge and Skills (TAKS) Social Studies Test as an instrument. TAKS was the main state-mandated assessment until 2011. TAKS was first administrated in spring 2003. It was given to students in mathematics at Grades 3–10 and at exit level (Grade 11); in reading at Grades 3–9; in writing at Grades 4 and 7; in English Language Arts (ELA) at Grade 10 and at exit level; in science at Grades 5, 8, and 10 and at exit level; and in social studies at Grades 8 and 10 and at exit level (TEA, 2006b). TAKS assessed student learning of the Texas Essential Knowledge and Skills (TEKS) that were adopted by Stated Board of Education in 1997 and implemented as the statewide curriculum in 1998-1999 school year. TEA (2006b) stated that TAKS was developed to better reflect good instructional practice and to more accurately measure student learning. TAKS was designed to strengthen the connection between what is tested on the statewide assessment and what students should know and be able to do to be academically successful.

Reliability of the TAKS Tests

Reliability is an indicator that determines the quality of any measurement instrument. Reliability is the degree to which a study can be repeated with similar results (Fraenkel & Wallen, 2003; Patten, 2009). Reliability is an expression of how well an assessment measures actual learning (TEA, 2006c). There are several ways to estimate reliability of a test. Reliability of an instrument is described by parallel forms reliability, test-retest reliability, split-half reliability, or Cronbach's alpha (Boudah, 2011).

The Texas Education Agency measured the TAKS test reliability using internal consistency measures, specifically on the Kuder-Richardson formula. During the 2005-2006 and 2008-2009 school years, Pearson Educational Measurement (PEM) estimated TAKS reliability through internal consistency, classical standard error of measurement, conditional standard error of measurement, and classification accuracy (TEA, 2006c; TEA 2009c). TEA used Kuder-Richardson formula to calculate estimates of reliability and stated that most internal consistency reliabilities are high 0.80s to low 0.93s range. As a general rule, reliability coefficients from 0.70 to 0.79 are considered adequate, 0.80 to 0.89 are considered good, and above 0.90 are considered excellent (TEA, 2009c). The Texas Education Agency calculated that the reliability of 2006 Social Studies TAKS tests ranged from 0.87 to 0.92 (TEA, 2006c) and the 2009 Social Studies TAKS tests to be 0.87 to 0.90 (TEA, 2009c). Table 1 and Table 2 show the reliability of 2006 and 2009 Social Studies TAKS tests

Table 1
KR20 Reliability Estimates for the Social Studies TAKS Test in 2006

| | Grade 8 Social Studies | Grade 10 Social Studies | Grade 11 Social Studies |
|------------------|---------------------------|----------------------------|----------------------------|
| Total Group | 0.913 | 0.916 | 0.903 |
| Female | 0.904 | 0.907 | 0.897 |
| Male | 0.921 | 0.924 | 0.906 |
| African American | 0.899 | 0.904 | 0.886 |
| Asian | 0.903 | 0.913 | 0.900 |
| Hispanic | 0.904 | 0.907 | 0.896 |
| Native American | 0.906 | 0.910 | 0.876 |
| White | 0.904 | 0.903 | 0.885 |

Note. Data compiled from the TEA (Appendix 26, 2006e)

Table 2
KR20 Reliability Estimates for the Social Studies TAKS Test in 2009

| | Grade 8 Social Studies | Grade 10 Social Studies | Grade 11 Social Studies |
|------------------|---------------------------|----------------------------|----------------------------|
| Total Group | 0.904 | 0.894 | 0.900 |
| Female | 0.896 | 0.884 | 0.894 |
| Male | 0.911 | 0.903 | 0.903 |
| African American | 0.894 | 0.890 | 0.889 |
| Asian | 0.884 | 0.873 | 0.901 |
| Hispanic | 0.899 | 0.888 | 0.897 |
| Native American | 0.895 | 0.872 | 0.886 |
| White | 0.892 | 0.874 | 0.879 |

Note. Data compiled from the TEA (Appendix B, 2009d)

Classical standard error of measurement is another way of examining the reliability of the TAKS tests. The classical standard error of measurement is calculated using both the standard deviation and the reliability of test scores. The standard error of measurement assumes that underlying traits cannot be measured without perfect measuring instruments (TEA, 2006c). If a test had a perfect reliability, it would not show a difference between the observed score of a student and the true score (TEA, 2009b). Table 3 and Table 4 show the standard error of measurement reliability estimates of Social Studies TAKS Tests in 2006 and 2009.

Table 3
Standard Error of Measurement (SEM) Reliability Estimates for the Social Studies TAKS Test in 2006

| | Grade 8 Social Studies | Grade 10 Social Studies | Grade 11 Social Studies |
|------------------|---------------------------|----------------------------|----------------------------|
| Total Group | 2.774 | 2.637 | 2.781 |
| Female | 2.823 | 2.694 | 2.863 |
| Male | 2.714 | 2.564 | 2.688 |
| African American | 2.958 | 2.870 | 3.002 |
| Asian | 2.292 | 2.239 | 2.487 |
| Hispanic | 2.932 | 2.818 | 2.979 |
| Native American | 2.733 | 2.515 | 2.695 |
| White | 2.547 | 2.386 | 2.543 |

Note. Data compiled from the TEA (Appendix, 2006)

Table 4
Standard Error of Measurement (SEM) Reliability Estimates for the Social Studies TAKS Test in 2009

| | Grade 8 Social Studies | Grade 10 Social Studies | Grade 11 Social Studies |
|------------------|---------------------------|----------------------------|----------------------------|
| Total Group | 2.561 | 2.548 | 2.523 |
| Female | 2.608 | 2.586 | 2.626 |
| Male | 2.511 | 2.494 | 2.414 |
| African American | 2.741 | 2.759 | 2.787 |
| Asian | 1.975 | 2.121 | 2.094 |
| Hispanic | 2.723 | 2.699 | 2.719 |
| Native American | 2.515 | 2.448 | 2.401 |
| White | 2.312 | 2.296 | 2.243 |

Note. Data compiled from the TEA (Appendix B, 2009)

Validity of the TAKS Tests

Validity is the most important idea to consider when preparing an instrument for use. Validity is a process of collecting evidence to support inferences made from the

scoring results of an assessment (TEA, 2005e). Validity refers to the extent to which the test measures what it is intended to measure (Gay et al., 2006). It is also defined as “appropriateness, correctness, meaningfulness, and usefulness of the specific inferences researchers make based in the data they collect” (Fraenkel & Wallen, 2003, p. 159). Validity asks the question: Are we measuring what we want to measure? This may sound obvious but is often not that simple in educational research (Muijs, 2004).

Validity in the Texas assessment program is concerned with the general question of whether or not TAKS test scores will help educators to make appropriate judgments about student performance (TEA, 2009c). For the TAKs test “Validity evidence for an assessment can come from a variety of sources including test content, the response process, the internal structure, relationships with other variables, and the consequences of testing” (TEA, 2009c, p. 113). TAKS tests were used to make some inferences about students’ knowledge and understanding of TEKS. The validity is content based and assessed by the statewide advisory committee which used the Texas Essential Knowledge and Skills (TEKS) objectives to determine the content validity of the test. Several committees of Texas educators approached and reviewed the process of aligning TAKS to the curriculum (TEA, 2006d). Teachers, test development specialists, test item writers, reviewers, and TEA staff members worked together for each stage of development to ensure the validity of the TAKS (TEA, 2006a; TEA, 2009c). Furthermore, the items types were pilot tested. Once these types were decided for use in the TAKS, TEA gathered evidence about student responses annually through educators and expert reviewers (TEA, 2009c). TEA (2006d) stated that “the nature and specificity

of these various review procedures provide additional strong evidence for the content validity of the TAKS” (p. 149). In addition, TEA analyzed the relationship between TAKS test performance and some other measures test performance to provide validity. A concurrent validity study was conducted to see the correlation between TAKS performance and other national testing programs (TEA, 2006d). All of these studies showed the validity of TAKS tests.

Analytic Framework

Organizing the Data

Texas Education Agency provided to the researcher six comma-delimited text data files. The researcher first imported these text files to a separate Excel to organize data. All grades’ data were imported into separate Excel file by years. After importing text data files to Excel sheets, the researcher had to separate the social studies items students’ response data for each grade level and years from one column to separate columns (48 columns for Grade 8, 50 columns for Grade 10, and 55 columns for Grade 11) for each question. After organizing the data and fixing letters to numbers, the researcher imported Excel files into a SPSS file. Figure 6 provides an image of the item analysis data before editing, and Figure 7 shows the data after editing in the Excel.

| ▼ | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | |
|----|-------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| 1 | H_COM | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | ▼ |
| 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| 3 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| 5 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| 6 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | |
| 8 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 11 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | |
| 12 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | |
| 13 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | |
| 14 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | |
| 17 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | |
| 18 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | |
| 19 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | |
| 20 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | |
| 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 22 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 23 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 25 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | |
| 26 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 27 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | |

Figure 7. An Image of the Spring 2006 Grade 8 Social Studies TAKS Test Data after Editing. Received from the Texas Education Agency.

The researcher deleted records with missing information. The researcher sorted and then deleted records to arrive his target population. When the researcher removed the records based on a category, he did not include in the count the next category for removal, even if that condition was met. The researcher deleted students' scores based on those which lacked:

- A score code of S (meaning the test was scored)
- Gender
- Item analysis data
- Ethnicity

The researcher first focused on the score coding. The researcher did not remove those records with a code of S. Other records with coding A (Absent), X (Student is ARD exempt), L (Student is LEP exempt), P (Previously Met Standard (exit level)), O (Other (e.g., illness, cheating)), Q (Student did not take the TAKS social studies test), I (TAKS Inclusive (TAKS-I) test was administered), C (Student did not take the paper-version social studies test and an online-version social studies test for this student could not be matched to the student's paper-version record), D (No information available for this subject) were removed by the researcher. A total of 40,711 records from the Grade 8 in 2006; 15,349 records from Grade 8 in 2009; 28,758 records from Grade 10 in 2006; 22,296 records from Grade 10 in 2009; 21,424 records from Grade 11 in 2006; and 15,860 records from Grade 11 in 2009 were removed.

Second, the researcher removed data records that were not coded either male or female. A total of 212 records from Grade 8 in 2006, 157 records from Grade 8 in 2009, 154 records from Grade 10 in 2006, 166 records from Grade 10 in 2009, 142 records from Grade 11 in 2006, 108 records from Grade 11 in 2009 were removed.

Third, the researcher focused on social studies item student response. The researcher removed those students whose record indicated they did not answer any test question. A total of 22,475 records from Grade 8 in 2006; 15,797 records from Grade 8 in 2009; 8,143 records from Grade 10 in 2006; 9,991 records from Grade 10 in 2009; 16,155 records from Grade 11 in 2006; 6,926 records from Grade 11 in 2009 were removed.

The researcher next focused on ethnicity coding. The researcher removed students' records those who did not specify their ethnicity. A total of 201 records from Grade 8 in 2006; 94 records from Grade 8 in 2009; 307 records from Grade 10 in 2006; 129 records from Grade 10 in 2009; 215 records from Grade 11 in 2006; and 91 records from Grade 11 in 2009 were removed.

Participants

Because the quantitative research paradigm indicates the importance of generalizability and reliability (Henn, Weinstein & Foard, 2006), the researcher preferred to study the entire population instead of selecting samples for each grade level and each year. The researcher used a total of 1,609,028 students' data those who took either Social Studies TAKS Test in 2006 or Social Studies TAKS Test in 2009 for this study. The researcher used 737,116 students' data for Social Studies TAKS Test in 2006 and 871,912 students' data for Social Studies TAKS Test in 2009. In total, 805,470 students are male while 803,555 are female. 584,808 students took Grade 8 Social Studies TAKS Test; 558,131 students took Grade 10 Social Studies TAKS Test; and 466,089 students took exit level Social Studies TAKS Test in 2006 and 2009.

Table 5, Table 6 and Table 7 display the breakdown of the participant data in 2006 and 2009 by various categories.

Table 5
Sex, Ethnicity, and ESL Status of Participants Completing the Social Studies TAKS Test in Total

| | Grade 8 | Grade 10 | Grade 11 |
|--|-----------------|-----------------|-----------------|
| Total | 584,805 | 558,123 | 496,895 |
| Sex: | | | |
| Male | 295,139 (50.5%) | 277,920 (49.8%) | 247,614 (49.8%) |
| Female | 289,666 (49.5%) | 280,203(50.2%) | 249,281 (50.2%) |
| Ethnicity: | | | |
| American Indian or Alaskan Native | 2,077 (0.4%) | 2,006 (0.4%) | 1,733 (0.3%) |
| Asian or Pacific Islander | 19,801 (3.4%) | 20,551 (3.7%) | 19,598 (3.9%) |
| African American | 83,942 (14.4%) | 79,261 (14.2 %) | 68,422 (13.8%) |
| Hispanic | 255,727 (43.7%) | 226,673 (40.6%) | 191,917 (38.6%) |
| White | 223,258 (38.2%) | 229,672 (41.2%) | 215,225 (43.3%) |
| ESL Status: | | | |
| Student is not participating in an ESL program | 554,032 (94.7%) | 534,757 (95.8%) | 477,742 (96.1%) |
| Student is participating in an ESL program | 30,773 (5.3%) | 23,366 (4.2%) | 18,908 (3.9%) |

Table 6
Sex, Ethnicity, and ESL Status of Participants Completing the Social Studies TAKS Test in Spring 2006

| | Grade 8 | Grade 10 | Grade 11 |
|---|-----------------|-----------------|-----------------|
| Total | 2717472 | 265710 | 230,465 |
| Sex: | | | |
| Male | 135,057 (49.7%) | 130,569 (49.1%) | 112,831 (49.0%) |
| Female | 136,685 (50.3%) | 135,141 (50.9%) | 117,637 (51.0%) |
| Ethnicity: | | | |
| American Indian or Alaskan Native | 912 (0.3%) | 899 (0.3%) | 762 (0.3%) |
| Asian or Pacific Islander | 8,692 (3.2%) | 9,411 (3.5%) | 9,067 (3.9%) |
| African American | 39,097 (14.4%) | 36,750 (13.8%) | 31,232 (13.6%) |
| Hispanic | 113,935 (41.9%) | 102,887 (38.7%) | 83,485 (36.2%) |
| White | 109,106 (40.2%) | 115,763 (43.6%) | 105,919 (46.0%) |
| ESL Status: | | | |
| Student is not participating an ESL program | 258,686 (95.2%) | 355,889 (96.3) | 222,203 (96.4%) |
| Student is participating an ESL program | 12,906 (4.7%) | 9,631 (3.6) | 8,112 (3.6%) |

Table 7
Sex, Ethnicity, and ESL Status of Participants Completing the Social Studies TAKS Test in Spring 2009

| | Grade 8 | Grade 10 | Grade 11 |
|---|-----------------|-----------------|-----------------|
| Total | 313,063 | 292,413 | 266,430 |
| Sex: | | | |
| Male | 160,082 (51.1%) | 147,351 (50.4%) | 134,783 (50.6%) |
| Female | 152,981 (48.9%) | 145,062 (49.6%) | 131,647 (49.4%) |
| Ethnicity: | | | |
| American Indian or Alaskan Native | 1,165 (0.4%) | 1,107 (0.4%) | 971 (0.4%) |
| Asian or Pacific Islander | 11,109 (3.5%) | 11,100 (3.8%) | 10,531 (4.0%) |
| African American | 44,845 (14.3%) | 42,511 (14.5%) | 37,190 (14.0%) |
| Hispanic | 141,792 (45.3%) | 123,786 (42.3%) | 108,432 (40.7%) |
| White | 114,152 (36.5) | 113,909 (39.0%) | 109,306 (41.0%) |
| ESL Status: | | | |
| Student is not participating an ESL program | 295,346 (94.3%) | 278,868 (95.4%) | 255,539 (95.9%) |
| Student is participating an ESL program | 17,583 (5.7%) | 13,428 (4.6%) | 10,796 (4.1%) |

Organization of Test Questions

The researcher analyzed individual questions on each of six different tests (Grade 8 Social Studies TAKS Test in 2006, Grade 10 Social Studies TAKS Test in 2006, Grade 11 Social Studies TAKS Test in 2006, Grade 8 Social Studies TAKS Test in 2009, Grade 10 Social Studies TAKS Test in 2009, and Grade 11 Social Studies TAKS Test in 2009). The Social Studies TAKS Test in Grade 8, Grade 10, and Grade 11 did not have the same number of questions. Grade 8 Social Studies TAKS Test had 48, Grade 10 had 50, and Grade 11 had 55 questions.

The researcher identified questions as “concept question” or “nonconcept question”. A question is considered as concept question if it has concept or concepts and knowledge of these concepts are key to correctly answering the question. A question is considered as nonconcept question if it is a fact, knowledge, or interpretation question that may contain concepts but do not test the knowledge of the concept. Figure 8 –13 show samples of concept and nonconcept questions.

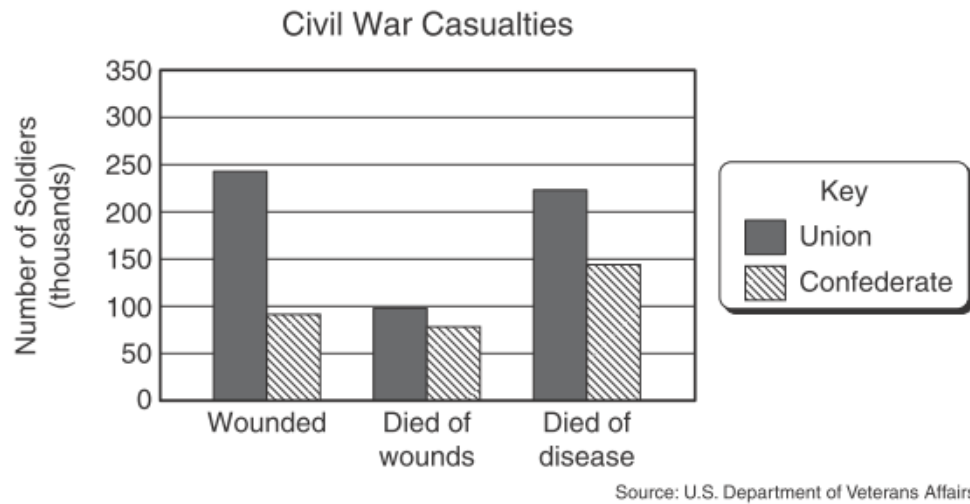
Francis Cabot Lowell's Textile Mills

- Machine production
- Large facilities
- Effective management
- Hired many workers

- 13** The factors listed above most directly contributed to the increase of —
- A** industrialization
 - B** subsistence farming
 - C** public education
 - D** homesteading

Figure 8. A Sample Concept Question from the 2006 Grade 8 Social Studies TAKS Test (TEA, 2006, p. 113).

This question was classified as concept question because the students must know the concepts of industrialization, farming, public education, and homesteading to choose correct answer for this question.



- 8 Which of these is a correct interpretation of the information shown above?
- F Total Confederate casualties were greater than total Union casualties.
 - G More Confederate soldiers died of wounds than of disease.
 - H More than twice as many Union soldiers died of disease than of wounds.
 - J Fewer soldiers fought for the Union than for the Confederacy.

Figure 9. A Sample Nonconcept Question from the 2006 Grade 8 Social Studies TAKS Test (TEA, 2006, p. 110).

This question was classified as nonconcept question because it is an interpretation question that may contain concepts but does not test the knowledge of the concept.

Use the information in the box and your knowledge of social studies to answer the following question.

- Advertising
- Airline travel
- Internet
- Popular entertainment
- Telecommunications

37 The box above lists important influences on the —

- A decline in international conflicts
- B interactions within a global community
- C reduction of global poverty
- D creation of an international government

Figure 10. A Sample Concept Question from the 2009 Grade 10 Social Studies TAKS Test (TEA, 2009, p. 127).

This question was classified as concept question because it contains some concepts, such as international conflict, global community, and poverty, and knowledge of these concepts are key to correctly answering the question.

Use the map and your knowledge of social studies to answer the following question.



- 1 According to the map above, which of these statements is true?
- A Turkmenistan is between Uzbekistan and Iran.
 - B Uzbekistan has the longest border with Afghanistan.
 - C The border between Iran and Afghanistan runs east to west.
 - D Kabul is closest to Afghanistan's border with Uzbekistan.

Figure 11. A Sample Nonconcept Question from the 2009 Grade 10 Social Studies TAKS Test (TEA, 2009, p. 110).

This question was classified as nonconcept question because it is an interpretation question that may contain concepts but does not test the knowledge of the concept.

- Sugar Act
- Stamp Act
- Townshend Acts
- Tea Act

3 American colonists protested against the acts listed in the box above because they believed the acts directly violated their —

- A** right to a free education
- B** religious freedom
- C** right to bear arms
- D** economic rights

Figure 12. A Sample Concept Question from the 2006 Grade 11 Social Studies TAKS Test (TEA, 2006, p. 127).

This question was classified as concept question because it contains some concepts, such as religious freedom, right to bear arms, economic right, and knowledge of these concepts are key to correctly answering the question.

In my opinion, in light of the intelligence, the idealism, and the educational achievement of the youth of today . . . the youngsters today are being discriminated against just as the women were until a few decades ago.

— *Senate Majority Leader Mike Mansfield, 1971*

- 15** It can be inferred from the excerpt above that Senator Mansfield advocated the right of 18-year-olds to —
- A** enlist in the army
 - B** marry the person of their choice
 - C** attend the college of their choice
 - D** vote in national elections

Figure 13. A Sample Nonconcept Question from the 2006 Grade 10 Social Studies TAKS Test (TEA, 2006, p. 110).

This question was classified as nonconcept question because it is an interpretation question that may contain concepts but does not test the knowledge of the concept.

The researcher asked four colleagues to analyze Social Studies TAKS Tests in 2006 and 2009 as concept question or nonconcept question to increase the reliability of the identification of both concept questions and nonconcept questions. Inter-rater reliability is a common process in educational research to evaluate the quality of a data. Inter-rater reliability quantifies the closeness of scores assigned by a pool of raters to the same study participants. The closer the scores, the higher the reliability (Gwet, 2008). Four raters consisting of three graduate students, one, a former social studies classroom teacher, enrolled in a course of study in social studies education who also teaches a university level social studies method course, the second one enrolled in the curriculum and culture emphasis teaches multicultural education course at college level, and the last one is a doctoral student whose research is in the area of English as a Second Language. The fourth rater is a professor in the College of Education and Human Development.

The researcher first scheduled a meeting by asking his colleagues their available times. During the meeting, the researcher explained what concept question and nonconcept question is. Then, the researcher explained how he classified questions into concept and nonconcept categories. Next, the researcher grouped the four colleagues into two groups. The first group analyzed 2006 Social Studies TAKS Tests while the second group analyzed 2009 Social Studies TAKS Tests.

In the first step, the researcher provided each group either 2006 Grade 8, Grade 10, or Grade 11 Social Studies TAKS Tests or 2009 Grade 8, Grade 10, or Grade 11 Social Studies TAKS Tests in a PDF files. The researcher asked to the colleagues to place questions in categories, concept question or nonconcept question. The researcher

completed his task first and compared results with the first group, 2006 Social Studies TAKS Tests. At this time, the researcher realized that there were some disagreements between his and his two colleagues and the instruction to place questions into concept or nonconcept categories was not enough. This lack of clarity initially effected the agreement on the Grade 8, Grade 10, and Grade 11 Social Studies TAKS Tests in 2006. The researcher met with his two colleagues first and explained the classification again. Then they reclassified questions. At the completion of the task by two colleagues, the researcher compared results and discussed the discrepancies in the classification of questions as concept question or nonconcept question until a mutual agreement was reached.

After the first discrepancy problem was resolved, the discussion for the categorization of social studies question focused on the Grade 8 Social Studies TAKS Test. The researcher and his colleagues agreed on the placement of 43 of the 48 questions into categories. Thus, there was agreement of 89% of the questions and the remaining 11% were reviewed and discussed until a mutual agreement was reached on the classification of those questions into either concept or nonconcept categorization. On the Grade 10 Social Studies TAKS Test in 2006, the researcher and his colleagues agreed on the categorization of 43 questions of the 50 questions. Thus, there was an agreement of 86% of the questions and the remaining 14% were reviewed and discussed until a mutual agreement was reached on the classification of questions. On the Grade 11 Social Studies TAKS Test in 2006, there were only five questions that the researcher and his two colleagues did not agree on the classification either concept or nonconcept. The

agreement rate between the researcher and his colleagues was 90%. The remaining 9% questions were reviewed again until there was a consensus on the classification of these questions.

On the year of 2009 Social Studies TAKS Tests, the researcher compared his classification with two colleagues. On the Grade 8 Social Studies TAKS Test, the researcher and two colleagues originally agreed on the placement of 44 questions of the 48 question into categories. Thus, they originally agreed on 92% of the questions and the remaining 8% were discussed until a mutual agreement was reached. On the Grade 10 Social Studies TAKS Test, the researcher and two colleagues agreed on 47 questions of the 50 questions into categories. The first agreement was 94% and the remaining 6% were adjusted by mutual agreement. On the Grade 11 Social Studies TAKS Test, the researcher and his two colleagues agreed on the placement of the 51 questions of the 55 questions into categories. Thus, there was originally an agreement on 93% of the material. The researcher and his colleagues reviewed those 4 questions together and reached a mutual agreement of the placement of those questions into categories. See Appendix A for classification of questions.

Analytic Process

Research Question 1 asked, “Are the Grade 8, Grade 10, and Grade 11 students more likely to choose the correct choice for concept questions rather than non-concept questions?” In order to answer first research question, the researcher first identified concept questions and nonconcept questions on Social Studies TAKS Test for each grade level and each year. The researcher used the paired t-test to analyze the effect of

question type, concept or nonconcept, on overall scores for the Social Studies TAKS Tests in 2006 and 2009. The researcher conducted analysis for all students based on ethnicity, grade level, and gender. In addition, the researcher conducted an independent t-test to evaluate whether there is a significant difference on correct concept choices on students responses by gender and years. The separate analysis were conducted of the Social Studies TAKS Test questions included students who took the following tests: Grade 8 Social Studies TAKS Test in 2006, Grade 10 Social Studies TAKS Test in 2006, Grade 11 Social Studies TAKS Test in 2006, Grade 8 Social Studies TAKS Test in 2009, Grade 10 Social Studies TAKS Test in 2009, Grade 10 Social Studies TAKS Test in 2009.

Research Question 2 asked, “Does the mean percentage of correct concept question differ among the students?” The researcher used the same identified concept questions on each of the Social Studies TAKS Test to answer this research question. One way analysis of variance was conducted to evaluate the difference between grade levels on choosing correct answer for concept questions. The independent variable, grade level, included three groups, Grade 8, Grade 10, and Grade 11. The dependent variable was the total number of correct answers that students gave for concept questions in 2006 and 2009 TAKS Social Studies Tests. Also, the researcher conducted another one way analysis of variance to evaluate the difference between ethnicity on choosing correct answer for concept questions. The independent variable, ethnicity, included five groups, American Indian, Asian, African American, Hispanic, and White. The dependent variable was the total number of correct answers that students gave for concept questions

in 2006 and 2009 TAKS Social Studies Tests. The researcher conducted analysis for all students based on ethnicity, grade level, and gender. Thus, the separate analysis of the Social Studies TAKS Test correct responses included students who took the following tests: Grade 8 Social Studies TAKS Test in 2006, Grade 10 Social Studies TAKS Test in 2006, Grade 11 Social Studies TAKS Test in 2006, Grade 8 Social Studies TAKS Test in 2009, Grade 10 Social Studies TAKS Test in 2009, Grade 10 Social Studies TAKS Test in 2009.

Research Question 3 asked, “Is there any relationship between choosing correct choices for concept questions on 2010 TAKS social studies test and students’ gender, ethnicity, grade level, ESL class attendance, and nonconcept questions?” In order to answer this research question, the researcher first conducted correlation coefficients to evaluate whether there is a significant correlation between ethnicity, grade level, nonconcept and concept. Next, the researcher used a multiple regression to evaluate how well the independent variables, grade, ethnicity, ESL class, and nonconcept, predicted choosing correct responses for concept questions in TAKS.

Research Question 4 asked, “Are the percentages of correct responses on concept and non-concept questions on the Grade 8, Grade 10, and Grade 11 Social Studies TAKS Test significantly different for students those who are native speakers and who are in ESL classroom?” First, an independent t-test was conducted on the 2006 and 2009 TAKS Social Studies tests to evaluate whether there is a significant difference on correct concept choices on students those who are native speakers and who are in ESL classroom. Analyses were conducted for all participants based on their grade level and

year. Thus, the separate analysis of the Social Studies TAKS Test correct responses included students who took the following tests: Grade 8 Social Studies TAKS Test in 2006, Grade 10 Social Studies TAKS Test in 2006, Grade 11 Social Studies TAKS Test in 2006, Grade 8 Social Studies TAKS Test in 2009, Grade 10 Social Studies TAKS Test in 2009, Grade 10 Social Studies TAKS Test in 2009.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Organization of the Presentation of Findings

The researcher arranged the presentation and analysis of data into four different sections. The first section focused on the first research question centered on comparing the students' percentage of correct answers for concept question and nonconcept question. The second section focused on the second research question centered on examining whether the mean percentage of concept question differ among students by considering their ethnicity and grade level. The next section focused on the third research question centered on assessing relationship between choosing correct choices for concept questions on 2006 and 2009 TAKS social studies test and students' ethnicity, grade level, ESL class attendance, and nonconcept questions. The fourth section focused on the fourth research question centered on comparing the mean percentage of correct concept answer for students those who were in the ESL class and students those who were not.

Research Question 1: Analyses of Concept-Nonconcept' Answers Difference

The researcher conducted a paired t-test to evaluate whether students were more successful responding to concept questions or nonconcept questions. Because the numbers of concept questions and nonconcept questions were different, the researcher used percentage of concept questions correct and percentage of nonconcept questions correct. Six different analyses of percentage of correct responses were conducted to

include: Grade 8 Social Studies Test in 2006, Grade 10 Social Studies Test in 2006, Grade 11 Social Studies Test in 2006, Grade 8 Social Studies Test in 2009, Grade 10 Social Studies Test in 2009, and Grade 11 Social Studies Test in 2009. Table 8 and Table 9 list the descriptive statistics for each of these six groups based on their response to concept questions and nonconcept questions. In each group, except for the Grade 11 in 2009, students had a higher mean percentage of correct answers for nonconcept question.

Table 8
Descriptive Statistics for the Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question in Social Studies TAKS Test

| | N | Mean | Standard Deviation |
|-------------------------------|--------|-------|--------------------|
| 2006 Social Studies TAKS Test | | | |
| Grade 8 | 271742 | 72.26 | 20.64 |
| Grade 10 | 265710 | 72.54 | 21.31 |
| Grade 11 | 230465 | 72.97 | 18.39 |
| 2009 Social Studies TAKS Test | | | |
| Grade 8 | 313063 | 76.87 | 20.66 |
| Grade 10 | 292413 | 76.88 | 18.03 |
| Grade 11 | 266430 | 84.94 | 16.21 |

Table 9
Descriptive Statistics for the Spring 2006 and 2009 Percentage of Students' Correct Choices for Nonconcept Question in Social Studies TAKS Test

| | N | Mean | Standard Deviation |
|-------------------------------|--------|-------|--------------------|
| 2006 Social Studies TAKS Test | | | |
| Grade 8 | 271742 | 72.93 | 19.92 |
| Grade 10 | 265710 | 78.49 | 16.96 |
| Grade 11 | 230465 | 78.99 | 16.01 |
| 2009 Social Studies TAKS Test | | | |
| Grade 8 | 313063 | 76.92 | 17.24 |
| Grade 10 | 292413 | 80.76 | 15.64 |
| Grade 11 | 266430 | 81.75 | 15.98 |

The researcher conducted a paired t-test to evaluate whether students were more likely to choose correct answer for concept question or nonconcept question for each Grade in 2006 and 2009. The results indicated that there were significant differences between concept questions and nonconcept questions for each grade level. The mean percentage of correct concept questions was significantly lower than the mean percentage of nonconcept questions, except Grade 11 in 2009. Grade 11 students scored higher on concept questions than nonconcept questions. Table 10 summarizes if students were more likely to choose concept questions than nonconcept questions.

Table 10
Paired t-test Results for Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question and Nonconcept Question in Social Studies TAKS Test

| per Concept Question and Nonconcept Question in Social Studies TAKS Test | | | | | |
|--|---------|--------------------|------------|--------------------|------------|
| | Concept | | Nonconcept | | t-value |
| | Mean | Standard Deviation | Mean | Standard Deviation | |
| 2006 Social Studies | | | | | |
| TAKS Test | | | | | |
| Grade 8 | 72.26 | 20.64 | 72.93 | 19.92 | -27.89*** |
| Grade 10 | 72.54 | 21.31 | 78.49 | 16.96 | -255.65*** |
| Grade 11 | 72.97 | 18.39 | 78.99 | 16.01 | -252.51*** |
| 2009 Social Studies | | | | | |
| TAKS Test | | | | | |
| Grade 8 | 76.87 | 20.66 | 76.92 | 17.24 | -1.97* |
| Grade 10 | 76.88 | 18.03 | 80.76 | 15.64 | -188.69*** |
| Grade 11 | 84.94 | 16.21 | 81.75 | 15.98 | 163.58*** |

*Note.**** $p < .001$, ** $p < .01$, * $p < .05$.

However, significant differences are often a result of a large number of data points used in the analysis. The APA Task Force on Statistical Inference, in writing about the effect of large samples sizes and the observation of significant differences, recommended that researchers should “always provide some effect-size estimate when reporting a p value... Reporting and interpreting effect sizes in the context of previously reported effect is essential to good research” (Wilkinson & APA Task Force, 1999, p. 599). Thus, the researcher calculated standardized effect size, d , for each of the t-tests performed. There are no universally accepted standards for describing values of d in words. However, Cohen’s suggestions are used by many researchers (Patten, 2005). Cohen (1992) recommended that a value of d about 0.20 is “small”, a value of 0.50 is “medium”, a value of 0.80 is “large”. The effect sizes of grade level are ranged from

0.003 to 0.53. In 2006 Social Studies TAKS Tests, the standardized effect size index, d , was .05 which indicated small effect size for Grade 8. Regarding to Grade 10, the standardized effect size was .50 which indicated medium effect size and for Grade 11, d was .53 which indicated medium effect size. In 2009 Social Studies TAKS Tests, the standardized effect size was .003 which indicated small effect size and it was the lowest effect size among grades. For the Grade 10, it was .35 and .32 for Grade 11 which indicated small to medium effect size. Table 11 shows the effect sizes of each grade.

Table 11
Effect Size Results for Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question and Nonconcept Question in Social Studies TAKS Test

| | Cohen's d |
|-------------------------------|-------------|
| <hr/> | |
| 2006 Social Studies TAKS Test | |
| Grade 8 | .05 |
| Grade 10 | .50 |
| Grade 11 | .53 |
| <hr/> | |
| 2009 Social Studies TAKS Test | |
| Grade 8 | .003 |
| Grade 10 | .35 |
| Grade 11 | .32 |
| <hr/> | |

The researcher conducted an independent t-test for each grade level, Grade 8, Grade 10, and Grade 11 to evaluate whether there are significant differences on correct concept choices on students responses between 2006 Social Studies TAKS Tests and 2009 Social Studies TAKS Tests. The researcher used percentage of concept questions

because the number of concept questions differed among years. Three different analyses of percentage of correct responses were conducted to include: Grade 8 Social Studies Test in 2006 and 2009, Grade 10 Social Studies Test in 2006 and 2009, and Grade 11 Social Studies Test in 2006 and 2009. Table 12 lists the descriptive statistics and t value for Grade 8, Grade 10, and Grade 11.

Table 12
Independent t-test Results for Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question Comparing Years

| | 2006 | | 2009 | | t-value |
|--------------------------|-------|--------------------|-------|--------------------|------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | |
| Social Studies TAKS Test | | | | | |
| Grade 8 | 72.26 | 20.64 | 76.87 | 20.66 | -85.22*** |
| Grade 10 | 72.54 | 21.31 | 76.88 | 18.03 | -82.48*** |
| Grade 11 | 72.97 | 18.39 | 84.94 | 16.21 | -243.90*** |

*Note.**** $p < .001$, ** $p < .01$, * $p < .05$.

The results indicated that there were statistically significance differences between 2006 and 2009 Social Studies TAKS Tests on students' percentage of correct concept answers. Test result for Grade 8 was significant $t(584803) = -85.22, p < .001$. Students more often chose the correct answer for concept question in 2009. The standardized effect size index, d , was .22 which indicated small effect size. Regarding for Grade 10, test result was significant $t(558121) = -82.48, p < .001$. Similarly with Grade 8, Grade 10 students more often chose the correct answer for concept question in 2009. The standardized effect size index, d , was .22 which indicated small effect size. Therefore,

the significances are less than .001 because of the big number of data; however, if one looks to the effect size, it can be concluded that the difference between 2006 and 2009 on Grade 8 and Grade 10 students' correct answer for concept questions was significant but did not have big effect size. On the other hand, Grade 11 students' result was different than Grade 8 and Grade 10. The result of Grade 11 showed significance $t(496893) = -243.90, p < .001$. The researcher also calculated effect size, d , was .69, which indicated middle to high effect size. The researcher concluded that Grade 11 students scored significantly higher on concept questions in 2009 Social Studies TAKS Test than 2006 Social Studies TAKS Test. Table 13 shows the effect sizes of each grade.

Table 13
Effect Size Results for Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question in Social Studies TAKS Test

| | Cohen's d |
|--------------------------|-----------|
| Social Studies TAKS Test | |
| Grade 8 | .22 |
| Grade 10 | .22 |
| Grade 11 | .69 |

The researcher conducted an independent t-test for each grade level, Grade 8, Grade 10, and Grade 11 to evaluate whether there were significant differences on correct concept answers on students responses between males and females. Again, the researcher used percentage of concept questions because the number of concept questions differed among years. Six different analyses of percentage of correct responses

were conducted to include: Grade 8 Social Studies Test in 2006, Grade 10 Social Studies Test in 2006, Grade 11 Social Studies Test in 2006, Grade 8 Social Studies Test in 2009, Grade 10 Social Studies Test in 2009, and Grade 11 Social Studies Test in 2009. Table 14 and Table 15 list the descriptive statistics for males and females.

Table 14

Descriptive Statistics for the Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question in Social Studies TAKS Test for Male

| | N | Mean | Standard Deviation |
|-------------------------------|--------|-------|--------------------|
| 2006 Social Studies TAKS Test | | | |
| Grade 8 | 135057 | 73.46 | 20.97 |
| Grade 10 | 130569 | 74.23 | 21.38 |
| Grade 11 | 112831 | 74.81 | 18.33 |
| 2009 Social Studies TAKS Test | | | |
| Grade 8 | 160082 | 77.16 | 21.12 |
| Grade 10 | 147351 | 77.96 | 18.21 |
| Grade 11 | 134783 | 85.61 | 16.57 |

Table 15

Descriptive Statistics for the Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question in Social Studies TAKS Test for Female

| | N | Mean | Standard Deviation |
|-------------------------------|--------|-------|--------------------|
| 2006 Social Studies TAKS Test | | | |
| Grade 8 | 136685 | 71.07 | 20.27 |
| Grade 10 | 135141 | 70.90 | 21.11 |
| Grade 11 | 117634 | 71.20 | 18.28 |
| 2009 Social Studies TAKS Test | | | |
| Grade 8 | 152981 | 76.57 | 20.17 |
| Grade 10 | 145062 | 75.78 | 17.78 |
| Grade 11 | 131647 | 84.26 | 15.80 |

The results indicated that there were significant differences between male students and female students on the percentage of correct concept questions for each grade level. The mean percentage of correct concept questions for male was significantly higher than the mean percentage of concept questions for female for each grade level in both 2006 and 2009. The researcher also calculated effect size for each test to evaluate whether the significant differences were result of big dataset or not. The effect sizes ranged from 0.03 to 0.20, which indicated small effect size. In 2006 Social Studies TAKS Tests, the standardized effect size was .12 for Grade 8, .16 for Grade 10, and .20 for Grade 11, which indicated small effect sizes. In 2009 Social Studies TAKS Test, the standardized effect size was .03 for Grade 8, .11 for Grade 10, and .08 for Grade 11, which indicated small effect size. Table 16 summarizes if students were more likely to choose concept question than nonconcept question. Table 17 lists effect size for males and females for each grade level.

Table 16
Independent t-test Results for Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question Comparing Gender

| Chen et al. / Concept Question Comparing Gender | | | | | |
|---|-------|--------------------|--------|--------------------|----------|
| | Male | | Female | | t-value |
| | Mean | Standard Deviation | Mean | Standard Deviation | |
| 2006 Social Studies | | | | | |
| TAKS Test | 73.46 | 20.97 | 71.07 | 20.27 | 30.15*** |
| Grade 8 | 74.23 | 21.38 | 70.90 | 21.11 | 40.35*** |
| Grade 10 | 74.81 | 18.33 | 71.20 | 18.28 | 47.31*** |
| Grade 11 | | | | | |
| 2009 Social Studies | | | | | |
| TAKS Test | 77.16 | 21.12 | 76.57 | 20.17 | 7.96* |
| Grade 8 | 77.96 | 18.21 | 75.78 | 17.78 | 32.71*** |
| Grade 10 | 85.61 | 16.57 | 84.26 | 15.80 | 21.47*** |
| Grade 11 | | | | | |

*Note.**** $p < .001$, ** $p < .01$, * $p < .05$.

Table 17
Effect Size Results for Gender on Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question in Social Studies TAKS Test

| | Cohen's d |
|-------------------------------|-----------|
| 2006 Social Studies TAKS Test | |
| Grade 8 | .12 |
| Grade 10 | .16 |
| Grade 11 | .20 |
| 2009 Social Studies TAKS Test | |
| Grade 8 | .03 |
| Grade 10 | .11 |
| Grade 11 | .08 |

Research Question 2: Analyses of Concept Answers by Students' Demographics

The researcher conducted a one-way analysis of variance to evaluate whether there was a difference between grade levels on choosing correct answers for concept questions on Social Studies TAKS Test. Analysis of variance is a method that allows researchers to compare the mean score of a continuous variable between a number of groups (Muijs, 2004). For a one-way analysis of variance, each individual or case must have scores on two variables: a factor and a dependent variable. The factors divide individuals into two or more groups or levels, while the dependent variable differentiates individuals on a quantitative dimension. The analysis of variance F test evaluates whether the group means in the dependent variable differ significantly from each other (Green & Salkind, 2011). The independent variable, grade level, included three levels: Grade 8, Grade 10, and Grade 11. The dependent variable was the mean percentage of correct concept answers. Two different one-way analyses of variance were conducted to include: Social Studies TAKS Test in 2006 and Social Studies TAKS Test in 2009. Table 18 shows descriptive statistics for the spring 2006 Social Studies TAKS Test Percentage of Correct Concept Question.

Table 18

Descriptive Statistics for Grade on Spring 2006 Social Studies TAKS Test Percentage of Correct Concept Question

| | N | Mean | Standard Deviation | 95% Confidence Interval for Mean |
|----------|--------|-------|-----------------------|-------------------------------------|
| Grade 8 | 271742 | 72.26 | 20.65 | 72.78 – 72.33 |
| Grade 10 | 265710 | 72.54 | 21.31 | 72.46 – 72.61 |
| Grade 11 | 230465 | 72.97 | 18.39 | 72.89 – 73.05 |

Regarding the Social Studies TAKS Test in 2006, the analysis of variance was significant, $F(2, 767914) = 77.07, p < .001$. The strength of the relationship between grade level and percentage of correct concept question was assessed by $\eta^2 = 0.01$. According to Cohen (1988), an eta squared statistic of .01 = small effect size, .06 = moderate effect size, and .14 = large effect size. Follow-up tests were conducted to evaluate pairwise differences among the three groups. The researcher used Scheffé test for post hoc comparison. According to the post hoc test, Grade 11 scored significantly higher than Grade 10 and Grade 8; Grade 10 scored significantly higher than Grade 8. Table 19 lists significance values for one-way analysis of variance used to analyze the 2006 Social Studies TAKS Test percentage of correct concept questions based on the grade levels.

The researcher conducted another one-way analysis of variance to evaluate whether there was a difference between grade levels on choosing correct answers for concept questions on 2009 Social Studies TAKS Test. The dependent variable was the mean percentage of correct concept answers. Table 19 shows descriptive statistics for the Spring 2006 Social Studies TAKS Test Percentage of Correct Concept Questions.

Table 19
Descriptive Statistics for the Spring 2009 Social Studies TAKS Test Percentage of Correct Concept Question

| | N | Mean | Standard Deviation | 95% Confidence Interval for Mean |
|----------|--------|-------|-----------------------|-------------------------------------|
| Grade 8 | 313063 | 76.87 | 20.66 | 76.81 – 76.92 |
| Grade 10 | 292413 | 76.88 | 18.03 | 76.81 – 76.95 |
| Grade 11 | 266430 | 84.94 | 16.21 | 84.87 – 85.01 |

Regarding the Social Studies TAKS Test in 2009, the analysis of variance was significant, $F(2, 871903) = 17552.15, p < .001$. The strength of the relationship between grade level and percentage of correct concept question was, as assessed by $\eta^2 = .04$ which indicated modest effect. Follow-up tests were conducted to evaluate pairwise differences among the three groups. The researcher used Scheffé test for post hoc comparison. According to the post hoc test, Grade 11 scored significantly higher than Grade 10 and Grade 8; Grade 10 scored significantly higher than Grade 8. Table 20 lists significance values for one-way analysis of variance used to analyze the 2006 and 2009 Social Studies TAKS Test percentage of correct concept questions based on the grade levels.

Table 20

Summaries of One-Way ANOVAs to Analyze 2006 and 2009 Social Studies TAKS Test Percentage of Correct Concept Questions Based on the Grade Levels

| Source | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>p</i> |
|-------------------------------|-----------|-----------|------------|-----------|----------|
| 2006 Social Studies TAKS Test | | | | | |
| Between groups | 2 | 63124.28 | 31562.14 | 77.07*** | .000 |
| Within groups | 767914 | 3.14 | 409.55 | | |
| Total | 767916 | 3.15 | | | |
| 2009 Social Studies TAKS Test | | | | | |
| Between groups | 2 | 1.20 | 6013871.10 | 17552.07* | .000 |
| Within groups | 871903 | 2.99 | 342.63 | ** | |
| Total | 871905 | 3.11 | | | |

*** $p < .001$

The researcher conducted a one-way analysis of variance to evaluate whether there was a difference between ethnicity on choosing correct answers for concept questions on Social Studies TAKS Tests. The independent variable, ethnicity, included

five levels: American Indian or Alaskan Native, Asian or Pacific Islander, African American, Hispanic, and White. The dependent variable was the mean percentage of correct concept answers. Six different analyses of percentage of correct responses were conducted to include: Grade 8 Social Studies Test in 2006, Grade 10 Social Studies Test in 2006, Grade 11 Social Studies Test in 2006, Grade 8 Social Studies Test in 2009, Grade 10 Social Studies Test in 2009, and Grade 11 Social Studies Test in 2009. Table 21 provides descriptive statistics for ethnic groups.

Table 21

Descriptive Statistics for the Spring 2006 Social Studies TAKS Test Percentage of Correct Concept Question by Ethnicity

| | N | Mean | Standard Deviation | 95% Confidence Interval for Mean |
|------------------|--------|-------|-----------------------|-------------------------------------|
| Grade 8 | | | | |
| American Indian | 912 | 75.25 | 18.57 | 73.97 – 76.54 |
| Asian | 8692 | 83.89 | 16.14 | 83.48 – 84.31 |
| African American | 39097 | 66.87 | 20.73 | 66.67 – 67.06 |
| Hispanic | 113935 | 67.25 | 21.08 | 67.14 – 67.37 |
| White | 109106 | 78.46 | 18.30 | 78.35 – 78.51 |
| Grade 10 | | | | |
| American Indian | 899 | 76.18 | 19.37 | 74.87 – 77.50 |
| Asian | 9411 | 82.64 | 17.95 | 82.24 – 83.05 |
| African American | 36750 | 65.56 | 21.50 | 65.36 – 65.77 |
| Hispanic | 102887 | 65.93 | 21.64 | 65.81 – 66.06 |
| White | 115763 | 79.76 | 18.30 | 79.65 – 79.88 |
| Grade 11 | | | | |
| American Indian | 762 | 75.35 | 16.65 | 74.10 – 76.60 |
| Asian | 9067 | 80.41 | 16.80 | 80.05 – 80.78 |
| African American | 31232 | 67.70 | 18.12 | 67.50 – 67.89 |
| Hispanic | 83485 | 67.77 | 18.58 | 67.65 – 67.89 |
| White | 105919 | 77.97 | 16.78 | 77.86 – 78.07 |

A one-way analysis of variance was conducted to evaluate the difference between ethnicity on choosing correct answer for concept questions in the 2006 Social Studies TAKS Tests. The independent variable, ethnicity, included five groups, American Indian, Asian, African American, Hispanic, and White. The dependent variable was the mean percentage of correct concept answers that students gave for concept questions in 2006 Social Studies TAKS Tests. Regarding Grade 8 the analysis of variance was significant, $F(4, 271737) = 5977.63, p < .001$. The analysis of variance for Grade 10 was significant. $F(4, 265705) = 8229.28, p < .001$. The analysis of variance for Grade 11 was significant. $F(4, 230460) = 5047.31, p < .001$. The strength of the relationship between ethnicity and percentage of correct concept question was, as assessed by $\eta^2 = .08$ which indicated moderate for Grade 8, $\eta^2 = .11$ which indicated large for Grade 10, and $\eta^2 = .08$ which indicated moderate for Grade 11. Follow up tests were conducted to evaluate pair-wise differences among the means. According to the Scheffé post-hoc test for Grade 8, Grade 10 and Grade 11, Asian students had a higher percentage of correct concept questions than White students; White students had a higher percentage of correct concept questions than American Indian students; American Indian students had a higher percentage of correct concept questions than African American and Hispanic students; there are no significant differences between African American and Hispanic. Table 22 lists significance values for one-way ANOVA used to analyze the 2006 Social Studies TAKS Test percentage of correct concept questions based on the ethnicity.

Table 22
Summaries of One-Way ANOVAs to Analyze 2006 Social Studies TAKS Test Percentage of Correct Concept Questions Based on the Ethnicity.

| Source | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>P</i> |
|----------------|-----------|------------|------------|------------|----------|
| Grade 8 | | | | | |
| Between groups | 4 | 9375474.61 | 2343868.65 | 5977.63*** | .000 |
| Within groups | 271737 | 1.07 | 392.11 | | |
| Total | 271741 | 1.16 | | | |
| Grade 10 | | | | | |
| Between groups | 4 | 1.33 | 3323693.72 | 8229.28*** | .000 |
| Within groups | 265705 | 1.07 | 403.89 | | |
| Total | 265709 | 1.21 | | | |
| Grade 11 | | | | | |
| Between groups | 4 | 6279721.11 | 1569930.28 | 5047.31*** | .000 |
| Within groups | 230460 | 7.17 | 311.04 | | |
| Total | 230464 | 7.80 | | | |

*** $p < .001$

The researcher also conducted another one-way analysis of variances to evaluate the difference between ethnicity on choosing correct answer for concept questions in the 2009 Social Studies TAKS Tests. The independent variable, ethnicity, included five groups, American Indian, Asian, African American, Hispanic, and White. The dependent variable was the total number of correct answers that students gave for concept questions in 2009 Social Studies TAKS Tests. Table 23 shows descriptive statistics for the spring 2006 Social Studies TAKS Test percentage of correct concept question by ethnicity.

Table 23
Descriptive Statistics for the Spring 2009 Social Studies TAKS Test Percentage of Correct Concept Question by Ethnicity

| | N | Mean | Standard Deviation | 95% Confidence Interval for Mean |
|------------------|--------|-------|-----------------------|-------------------------------------|
| Grade 8 | | | | |
| American Indian | 1165 | 78.34 | 20.14 | 77.19 – 79.49 |
| Asian | 11109 | 88.99 | 14.78 | 88.62 – 89.37 |
| African American | 44845 | 72.23 | 21.40 | 72.04 – 72.41 |
| Hispanic | 141792 | 73.06 | 21.11 | 72.95 – 73.16 |
| White | 114152 | 82.25 | 18.50 | 82.13 – 82.36 |
| Grade 10 | | | | |
| American Indian | 1107 | 79.65 | 16.43 | 78.64 – 80.67 |
| Asian | 11100 | 86.01 | 14.34 | 85.70 – 86.33 |
| African American | 42511 | 72.29 | 18.66 | 72.09 – 72.41 |
| Hispanic | 123786 | 72.21 | 18.54 | 72.31 – 72.51 |
| White | 113909 | 82.55 | 15.44 | 82.45 – 82.65 |
| Grade 11 | | | | |
| American Indian | 971 | 86.29 | 15.06 | 85.29 – 87.28 |
| Asian | 10531 | 90.99 | 12.74 | 90.69 – 91.29 |
| African American | 37190 | 81.64 | 17.94 | 81.48 – 81.80 |
| Hispanic | 108432 | 81.75 | 17.31 | 81.66 – 81.84 |
| White | 109306 | 88.64 | 13.61 | 88.54 – 88.73 |

Regarding Grade 8, the analysis of variance was significant, $F(4, 313058) = 4960.61, p < .001$. The analysis of variance for Grade 10 was significant. $F(4, 292408) = 6700.42, p < .001$. The analysis of variance for Grade 11 was significant. $F(4, 266425) = 3389.62, p < .001$. The strength of the relationship between ethnicity and percentage of correct concept question was, as assessed by $\eta^2 = .06$ which indicated moderate for Grade 8, $\eta^2 = .084$ which indicated moderate for Grade 10, and $\eta^2 = .05$ which indicated modest for Grade 11., small for each grade, Grade 8, Grade 10, and Grade 11. Follow up tests were conducted to evaluate pair-wise differences among the means. According

to the Scheffé post-hoc test for Grade 8, Grade 10 and Grade 11, Asian students had a higher percentage of correct concept questions than White students; White students had a higher percentage of correct concept questions than American Indian students; American Indian students had a higher percentage of correct concept questions than African American and Hispanic students; there are no significant differences between African American and Hispanic. When interpreting these findings, the reader should consider the limitations posed by lack of socio-economic status data and research on the relationship between ethnicity and standardized test (Hill-Jackson & Lewis, 2010; Lewis et al., 2008; Valenzuela, 2005). Table 24 lists significance values for one-way analysis of variance used to analyze the 2006 Social Studies TAKS Test percentage of correct concept questions based on the ethnicity.

Table 24
Summaries of One-Way ANOVAs to Analyze 2009 Social Studies TAKS Test Percentage of Correct Concept Questions Based on the Ethnicity

| Source | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>p</i> |
|----------------|-----------|-------------|------------|------------|----------|
| Grade 8 | | | | | |
| Between groups | 4 | 79661317.68 | 1991579.42 | 4960.61*** | .000 |
| Within groups | 313058 | 1.26 | 401.48 | | |
| Total | 313062 | 1.34 | | | |
| Grade 10 | | | | | |
| Between groups | 4 | 7943415.39 | 1995853.85 | 6700.42*** | .000 |
| Within groups | 292408 | 8.71 | 297.87 | | |
| Total | 292412 | 9.51 | | | |
| Grade 11 | | | | | |
| Between groups | 4 | 3390055.80 | 847513.95 | 3389.62*** | .000 |
| Within groups | 266425 | 6.66 | 250.03 | | |
| Total | 266429 | 7.00 | | | |

*** $p < .001$

Research Question 3: Correlation between Students' Demographics and Percentage of Correct Concept Question

Research Question 3 asked, “Is there any relationship between choosing correct choices for concept questions on 2010 TAKS social studies test and students’ ethnicity, grade level, and nonconcept questions?” In order to answer this research question, the researcher first conducted correlation coefficients to evaluate whether there was a significant correlation between ethnicity, grade level, and nonconcept and concept questions. Two different correlations were conducted to include: Social Studies Test in 2006 and Social Studies Test in 2009.

Regarding to the 2006 Social Studies TAKS Test, test results indicated that there was a significant positive small correlation between concept and grade, there was a significant small correlation between concept and ethnicity, and there was a significant positive high correlation between concept and nonconcept questions. Table 25 shows correlations between grade, ethnicity, concept question, and nonconcept question on 2006 Social Studies TAKS Test

Table 25

Correlations between Grade, Ethnicity, Concept Question, and Nonconcept Question on 2006 Social Studies TAKS Test

| | | Grade | Ethnic | Concept | Nonconcept |
|------------|---------------------|--------|--------|---------|------------|
| Grade | Pearson Correlation | | | | |
| | Sig. (2-tailed) | | | | |
| | N | | | | |
| Ethnic | Pearson Correlation | .026** | | | |
| | Sig. (2-tailed) | .000 | | | |
| | N | 767917 | 767917 | | |
| Concept | Pearson Correlation | .013** | .164** | | |
| | Sig. (2-tailed) | .000 | .000 | | |
| | N | 767917 | 767917 | 767917 | |
| Nonconcept | Pearson Correlation | .149** | .193** | .801** | |
| | Sig. (2-tailed) | .000 | .000 | .000 | |
| | N | 767917 | 767917 | 767917 | |

** Correlation is significant at the 0.01 level (2-tailed).

Regarding the 2009 Social Studies TAKS Test, the result indicated that there was a significant positive small correlation between concept and grade, there was a significant small correlation between concept and ethnicity, and there was a significant positive high correlation between concept and nonconcept questions. Table 26 shows correlations between grade, ethnicity, concept question, and nonconcept question on 2009 Social Studies TAKS Test

Table 26

Correlations between Grade, Ethnicity, Concept Question, and Nonconcept Question on 2009 Social Studies TAKS Test

| | | Grade | Ethnic | Concept | Nonconcept |
|------------|---------------------|--------|--------|---------|------------|
| Grade | Pearson Correlation | | | | |
| | Sig. (2-tailed) | | | | |
| | N | | | | |
| Ethnic | Pearson Correlation | .020** | | | |
| | Sig. (2-tailed) | .000 | | | |
| | N | 871906 | 871906 | | |
| Concept | Pearson Correlation | .147** | .119** | | |
| | Sig. (2-tailed) | .000 | .000 | | |
| | N | 871906 | 871906 | | |
| Nonconcept | Pearson Correlation | .127** | .162** | .793** | |
| | Sig. (2-tailed) | .000 | .000 | .000 | |
| | N | 871906 | 871906 | 871906 | |

** Correlation is significant at the 0.01 level (2-tailed).

The researcher used a multiple regression to evaluate how well the independent variables, grade, gender, ethnicity, ESL class, and nonconcept, predicted choosing correct responses for concept questions in Social Studies TAKS Tests. The main purpose of multiple regressions is to predict a dependent or criterion variable from several independent or predictor variable (Leech, Barrett, & Morgan, 2008). Two different multiple regressions were conducted: multiple regression for 2006 Social Studies TAKS Tests and 2009 Social Studies TAKS Tests. The predictors were four variables: percentage of correct nonconcept questions, grade (high school/not), ethnicity (white/not), and ESL status. The linear combination of independent variables was significantly related to the choosing correct choices for concept questions, $F(4, 767912)=$

363943, $p < .001$. In addition, 66% of the variance is accounted for choosing correct answer for concept questions by the four independent variables, grade, ethnicity, ESL class, and percentage of correct nonconcept questions. Grade level had a negative, moderate effect on choosing correct answer for concept questions; nonconcept had a positive, high effect on concept questions. Ethnicity had a positive small effect on choosing correct answer for concept questions. ESL status had a negative small effect on choosing correct answer for concept questions. There was no other significant effect to report. The beta weights, presented in the Table 27, suggested that choosing correct answer for nonconcept questions contributed most to prediction choosing correct answer for concept questions, and being in higher grade, and native speaker also contributed most to predicting choosing correct answer for concept question.

Table 27

Simultaneous Multiple Regression Analysis Summary for Nonconcept Question, Grade, Ethnicity, and ESL Status Predicting Percentage of Correct Concept Question in the 2006 Social Studies TAKS Test

| Source | B | SE | Beta |
|------------|-------|-------|----------|
| Nonconcept | 0.91 | 0.001 | 0.81*** |
| Grade | -4.83 | 0.029 | -0.11*** |
| Ethnicity | 1.13 | 0.029 | 0.01*** |
| ESL Status | -1.84 | 0.072 | -0.02*** |

Note. $R^2 = .65$; $F(4, 767422) = 360486.68$, $p < .001$.

*** $p < .001$

Another multiple regression was conducted to evaluate how well the independent variables, grade, gender, ethnicity, ESL class, and nonconcept, predicted choosing

correct responses for concept questions in 2009 Social Studies TAKS Tests. The linear combination of independent variables was significantly related to the choosing correct choices for concept questions, $F(4, 871901) = 370572, p < .001$. In addition, 63% of the variance is accounted for choosing correct answer for concept questions by the four independent variables, grade, ethnicity, ESL class, and percentage of correct nonconcept questions. Grade level has a negative, small effect on choosing correct answer for concept questions; nonconcept has a positive, high effect on concept questions. Ethnicity had a positive small effect on choosing correct answer for concept questions. ESL status had negative moderate effect on choosing correct answer for concept questions. There was no other significant effect to report. The beta weights, presented in the Table 28, suggested that choosing correct answer for nonconcept questions contributed most to prediction choosing correct answer for concept questions, and being in higher grade, and native speaker also contributed most to predicting choosing correct answer for concept questions.

Table 28

Simultaneous Multiple Regression Analysis Summary for Nonconcept Question, Grade, Ethnicity, and ESL Status Predicting Choosing Correct Answer in the 2009 Social Studies TAKS Test

| Source | B | SE | Beta |
|------------|-------|-------|----------|
| Nonconcept | 0.90 | 0.001 | 0.78*** |
| Grade | -0.70 | 0.026 | 0.02*** |
| Ethnicity | 0.31 | 0.026 | -0.08*** |
| ESL Status | -3.05 | 0.060 | -0.04*** |

Note. $R^2 = .63$; $F(4, 871555) = 373859.25, p < .001$.

*** $p < .001$

Research Question 4: Comparing ESL Students and Native Speakers on the Percentage of Correct Concept Question

Research Question 4 asked, “Are the percentages of correct responses on concept and non-concept questions on the Grade 8, Grade 10, and Grade 11 Social Studies TAKS Test significantly different for students those who are native speakers and who are in ESL classroom?” The researcher conducted an independent t-test for each grade level, Grade 8, Grade 10, and Grade 11 to evaluate whether there were significant differences on correct concept choices on students responses between males and females. The researcher used percentage of concept questions because the number of concept question differed among years. Six different analyses of percentage of correct responses were conducted to include: Grade 8 Social Studies Test in 2006, Grade 10 Social Studies Test in 2006, Grade 11 Social Studies Test in 2006, Grade 8 Social Studies Test in 2009, Grade 10 Social Studies Test in 2009, and Grade 11 Social Studies Test in 2009. Table 29 and Table 30 list the descriptive statistics for ESL students and native speakers.

Table 29

Descriptive Statistics for the Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question in Social Studies TAKS Test for ESL Students

| | N | Mean | Standard Deviation |
|--------------------------|-------|-------|--------------------|
| 2006 Social Studies TAKS | | | |
| Test | 12906 | 51.22 | 19.94 |
| Grade 8 | 9631 | 47.30 | 19.11 |
| Grade 10 | 8112 | 53.54 | 18.20 |
| Grade 11 | | | |
| 2009 Social Studies TAKS | | | |
| Test | 17583 | 58.51 | 22.20 |
| Grade 8 | 13428 | 56.25 | 18.23 |
| Grade 10 | 10796 | 64.76 | 20.41 |
| Grade 11 | | | |

Table 30

Descriptive Statistics for the Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question in Social Studies TAKS Test for Native Speaker Students

| | N | Mean | Standard Deviation |
|--------------------------|--------|-------|--------------------|
| 2006 Social Studies TAKS | | | |
| Test | 258836 | 73.31 | 20.12 |
| Grade 8 | 256079 | 73.48 | 20.79 |
| Grade 10 | 222353 | 73.68 | 18.01 |
| Grade 11 | | | |
| 2009 Social Studies TAKS | | | |
| Test | 295480 | 77.97 | 20.04 |
| Grade 8 | 278985 | 77.87 | 17.42 |
| Grade 10 | 255634 | 85.79 | 15.44 |
| Grade 11 | | | |

The results indicated that there were significant differences between ESL students and native speaker students on the percentage of correct concept questions for each grade level. The mean percentage of correct concept questions for native speaker

students was significantly higher than the mean percentage of concept questions for ESL students for each grade level in both 2006 and 2009. Table 31 summarizes if students were more likely to choose concept question than nonconcept question. The researcher also calculated effect size for each test to evaluate whether the significant differences were result of big dataset or not. The effect sizes ranged 0.92 to 1.36, which indicates large effect size. In 2006 Social Studies TAKS Tests, the standardized effect size was 1.10 for Grade 8, 1.31 for Grade 10, and 1.11 for Grade 11, which indicated very large effect sizes. In 2009 Social Studies TAKS Test, the standardized effect size was .92 for Grade 8, 1.21 for Grade 10, and 1.16 for Grade 11, which indicated very large effect size. Table 31 lists t-test results, and Table 32 lists effect size for males and females for each grade level.

Table 31

Independent t-test Results for Spring 2006 and 2009 Percentage of Students' Correct Choices for Concept Question Comparing ESL Students and Native Speaker Students

| | ESL Students | | Native Speaker | | t-value |
|---------------------|--------------|--------------------|----------------|--------------------|-----------|
| | Mean | Standard Deviation | Mean | Standard Deviation | |
| 2006 Social Studies | | | | | |
| TAKS Test | 51.22 | 19.94 | 73.31 | 20.12 | 121.76*** |
| Grade 8 | 47.30 | 19.11 | 73.48 | 20.79 | 121.68*** |
| Grade 10 | 53.54 | 18.20 | 73.68 | 18.01 | 98.86*** |
| Grade 11 | | | | | |
| 2009 Social Studies | | | | | |
| TAKS Test | 58.51 | 22.20 | 77.97 | 20.04 | 124.23*** |
| Grade 8 | 56.25 | 18.23 | 77.87 | 17.42 | 140.20*** |
| Grade 10 | 64.76 | 20.41 | 85.79 | 15.44 | 136.59*** |
| Grade 11 | | | | | |

*Note.**** $p < .001$, ** $p < .01$, * $p < .05$.

Table 32
*Effect Size Results for ESL and Native Speaker Students on Spring 2006 and 2009
 Percentage of Students' Correct Choices for Concept Question in Social Studies TAKS
 Test*

| | Cohen's d |
|-------------------------------|-----------|
| 2006 Social Studies TAKS Test | |
| Grade 8 | 1.10 |
| Grade 10 | 1.31 |
| Grade 11 | 1.11 |
| 2009 Social Studies TAKS Test | |
| Grade 8 | .92 |
| Grade 10 | 1.21 |
| Grade 11 | 1.16 |

Summary of Findings

The results of tests showed that the level of choosing correct answer for concept and nonconcept questions differed among students. Students were more likely to choose the correct answer for a nonconcept question than a concept question. Differences in choosing correct answers for concept questions appeared at a statistical significant level for Grade 8 and Grade 10. However, in 2009 Social Studies TAKS Test, Grade 11 students more often chose correct answers for concept questions than nonconcept questions. The difference appeared at a statistical significance level.

When the researcher compared students' choices in 2006 Social Studies TAKS Tests and 2009 Social Studies TAKS Test, he found that there was a statistical significance difference between these two years. Students more often chose correct answers for concept questions in 2009. Specifically, Grade 11 students scored

significantly better in choosing correct answer for concept questions in the 2009 Social Studies TAKS Test compared with the 2006 Social Studies TAKS Test.

The researcher also found that male students did better than female students on choosing correct answer for concept questions, especially in the 2006 Social Studies TAKS Tests. In the 2006 Social Studies TAKS Test, the difference was significant but had small effect size.

Regarding grade level, the researcher found that there were some differences between Grade 8, Grade 10, and Grade 11 students for choosing correct answers for concept questions. The tests results indicated that Grade 11 students scored higher than Grade 10 and Grade 8 students. Regarding ethnicity, the researcher also found some significant differences among ethnicity. According to test results for Grade 8, Grade 10 and Grade 11, Asian students scored significantly higher correct choices than White students; White students scored significantly higher than American Indian students; American Indian students scored significantly higher than African American and Hispanic students; there was no significant differences between African American and Hispanic students.

In addition, those students who were successful on choosing correct answers for nonconcept questions were also successful on choosing correct answers for nonconcept questions. The correlation between these two variables was significant and high. Also, 65% of the variance is accounted for choosing correct answers for concept questions by the four independent variables, grade, ethnicity, ESL class, and percentage of correct nonconcept questions.

Finally, the mean percentage of correct concept questions for native speaker students was significantly higher than the mean percentage of concept questions for ESL students for each grade level in both 2006 and 2009.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

All learning, thinking, and actions involve concepts. Concepts enrich our lives and make it possible for us to communicate easily with others. Concepts allow us to organize our knowledge. Concepts also make it easier to learn and remember information. Thus, the importance of concept learning maintains its key position in the social studies classroom. Since the Social Studies TAKS Test contains several concept questions, Grade 8, Grade 10, and Grade 11 students' answers for concept questions were compared to Grade 8, Grade 10, and Grade 11 students' answers for nonconcept questions to determine if students' performance on the questions differed.

This chapter is divided into three sections. The first section presents a summary of the purpose of the study and the procedures. The second section presents conclusion and implications based on the research results are presented in separate sections based on each individual research question. Section three is comprised of the recommendations for theory, practice, and for future research.

Summary

The purpose of this study was to determine whether Grade 8, Grade 10, and Grade 11 students perform better on social studies questions which were classified as concept questions compared to questions which were classified as nonconcept questions. More specifically, this study sought to examine if Grade 8, Grade 10, and Grade 11 students more often chose correct answers on Social Studies TAKS Test questions which

were classified as concept questions compared to Social Studies TAKS Test questions which were classified as nonconcept questions.

In order to determine whether there was a difference on students' answers for concept questions and nonconcept questions, TAKS data were gathered from the TEA. The Texas Education Agency provided a text file that included a coding for grade level, ethnicity, gender, ESL status, raw score, scaled score, and item analysis for every Grade 8, Grade 10, and Grade 11 student who took the 2006 and 2009 Social Studies TAKS Test. The researcher was interested for all students' item analysis. Texas Education Agency provided to the researcher six comma-delimited text data files. The researcher first imported these text files to separate Excel files to organize data. All grades' data were imported into separate Excel file by years. After importing text data files to Excel sheets, the researcher had to separate the social studies items students' response data for each grade level and years from one column to separate column (48 column for 8th grade, 50 column for 10th grade, and 55 column for 11th grade) for each question. After organizing the data and fixing letters to numbers, the researcher imported excel files into a SPSS file.

The researcher used a total of 1,609,028 students' data those who took either Social Studies TAKS Test in 2006 or Social Studies TAKS Test in 2009 for this study. The researcher used 737,116 students' data for Social Studies TAKS Test in 2006 and 871,912 students' data for Social Studies TAKS Test in 2009. In total, 805,470 students were male while 803,555 were female. For Grade 8, 584,808 students took Social

Studies TAKS Test, 558,131 students took Grade 10 Social Studies TAKS Test, and 466,089 students took Grade 11 Social Studies TAKS Test in 2006 and 2009.

Conclusion from Research Question 1

Regarding the Research Question 1, the researcher aimed to investigate the differences on choosing correct answers between concept questions and nonconcept questions on the 2006 and 2009 Grade 8, Grade 10, and Grade 11 Social Studies TAKS Tests.

The results of this study indicate that there were significant differences between concept questions and nonconcept questions correctness response percentages for each grade level. The mean percentage of correct concepts question was significantly lower than the mean percentage of nonconcept questions, except Grade 11 in 2009 where students performed better on concept questions than nonconcept questions. According to the result, Grade 8 students in 2006 more often chose correct answer for nonconcept questions ($M = 72.93$, $SD = 19.92$) than concept questions ($M = 72.26$, $SD = 20.64$). Grade 10 students performed better in 2006 on nonconcept questions ($M = 78.49$, $SD = 16.96$) than concept questions ($M = 72.54$, $SD = 21.31$); in 2009 Social Studies TAKS Test Grade 10 performed better on nonconcept questions ($M = 80.76$, $SD = 15.64$) than concept questions ($M = 76.88$, $SD = 18.03$). Grade 11 students in 2006 were more successful on choosing correct answer for nonconcept questions ($M = 78.99$, $SD = 16.01$) than concept questions ($M = 72.97$, $SD = 18.39$); however, in 2009 Social Studies TAKS Test, Grade 11 performed better on concept questions ($M = 84.94$, $SD = 16.21$) than nonconcept questions ($M = 81.75$, $SD = 15.98$). For the all grade level, the

significance level was $p < .001$ level. The conclusion from this research question implied that students in Grade 8, Grade 10, and Grade 11 more often chose correct answer for nonconcept questions. Only Grade 11 in 2009 performed better on concept questions.

A statistical significant difference at the $p < .001$ level in the percentage of correct answer for concept questions was found between the 2006 Social Studies TAKS Tests, Grade 8 ($M = 72.26$, $SD = 20.64$), Grade 10 ($M = 72.54$, $SD = 21.31$), Grade 11 ($M = 72.97$, $SD = 18.39$) and 2009 Social Studies TAKS Tests, Grade 8 ($M = 76.87$, $SD = 20.66$), Grade 10 ($M = 76.88$, $SD = 18.03$), Grade 11 ($M = 84.94$, $SD = 16.21$). The conclusion from this sub research question implied that students in Grade 8, Grade 10, and Grade 11 more often chose correct answers for concept questions in 2009 than 2006. No evidence has been found to explain why students performed better in 2009 than 2006.

When the researcher looked at the difference between male and female students, the results indicated that there were significant differences between male and female students on the percentage of correct concept questions for each grade level. The mean percentage of correct concept questions for males, Grade 8 ($M = 73.46$, $SD = 20.97$), Grade 10 ($M = 74.23$, $SD = 21.38$), Grade 11 ($M = 74.81$, $SD = 18.33$) was significantly higher than the mean percentage of concept questions for females for each grade level, Grade 8 ($M = 71.07$, $SD = 20.27$), Grade 10 ($M = 70.90$, $SD = 21.11$), Grade 11 ($M = 71.20$, $SD = 18.28$) in 2006 Social Studies TAKS Tests. However, in the 2009 Social Studies TAKS Tests, the gap between males and females was getting smaller. For males, Grade 8 ($M = 77.16$, $SD = 21.12$), Grade 10 ($M = 77.96$, $SD = 18.21$), Grade 11 ($M =$

85.61, SD = 16.57), for females, Grade 8 (M = 76.57, SD = 20.17), Grade 10 (M = 75.78, SD = 17.78), Grade 11 (M = 84.26, SD = 15.80). The conclusion from this sub question implied that the mean percentage of correct concept questions for males was significantly higher than the mean percentage of concept question for females for each grade level in both 2006 and 2009. The effect sizes ranged from 0.03 to 0.20, which indicated small effect size. In 2006 Social Studies TAKS Tests, the standardized effect size was .12 for Grade 8, .16 for Grade 10, and .20 for Grade 11, which indicated small effect sizes. In 2009 Social Studies TAKS Test, the standardized effect size was .03 for Grade 8, .11 for Grade 10, and .08 for Grade 11, which indicated small effect size.

Conclusion from Research Question 2

Regarding the Research Question 2, the researcher aimed to investigate whether there was a difference between grade levels on choosing correct answers for concept questions on Social Studies TAKS Test. The researcher also aimed to evaluate the difference between ethnicity on choosing correct answer for concept questions in the 2009 Social Studies TAKS Tests.

The first goal of this research question, investigating grade level differences, the researcher found statistical significant differences at the $p < .001$ level for both the 2006 Social Studies TAKS Test and 2009 Social Studies TAKS Test. The analysis of variance for the 2006 Social Studies TAKS Test was significant $F(2, 767914) = 77.07, p < .001$. Also, the analysis of variance for the 2009 Social Studies TAKS Test was significant, $F(2, 871903) = 17552.15, p < .001$. Because the result showed significance, the researcher conducted a follow-up test to evaluate pairwise difference among the means. The

researcher conducted Scheffé post hoc test to compare the differences of all three grades' means. Scheffé post hoc test showed that Grade 11 students more often chose correct answers for concept questions than Grade 10 and Grade 8; Grade 10 students more often chose correct answers for concept questions than Grade 8.

The second goal of this research question, investigating ethnicity differences, a statistical significant difference at the $p < .001$ level was found in the comparison for both the 2006 Social Studies TAKS Test and 2009 Social Studies TAKS Test for the each grade level. In 2006, regarding Grade 8 the analysis of variance was significant, $F(4, 271737) = 5977.63, p < .001$. The analysis of variance for Grade 10 was significant. $F(4, 265705) = 8229.28, p < .001$. The analysis of variance for Grade 11 was significant. $F(4, 230460) = 5047.31, p < .001$. In 2009, regarding Grade 8 the analysis of variance was significant, $F(4, 313058) = 4960.61, p < .001$. The analysis of variance for Grade 10 was significant. $F(4, 292408) = 6700.42, p < .001$. The analysis of variance for Grade 11 was significant. $F(4, 266425) = 3389.62, p < .001$. The Scheffé post hoc test was conducted to compare the differences of all three grades' means. Scheffé post hoc test showed that Asian students had a significantly higher percentage of correct choices than did White students; White students had a significantly higher percentage of correct choices than did American Indian students; American Indian students had a significantly higher percentage of correct choices than did African American students and Hispanic students; there are no significant differences between African American and Hispanic for both year and each grade.

Difference between Grades

One conclusion from this research question is that differences in the performance of students on concept questions do exist. Where the difference appears at a statistically significant level, ($p < .001$), students in the 11th grade have higher mean averages than students in the 8th grade. One possible explanation for the difference in performance between Grade 8, Grade 10, and Grade 11 is, as students gain experiences, they learn concepts better and perform better on the concept questions.

Difference between Ethnicity

When student means scores are examined in terms of ethnicity, Asian and White students have higher mean performance than do African American and Hispanic students. This finding is consistent with previous research on the achievement gap between African American students and White students. Research on the achievement gap between ethnic groups has been the focus of scholars over the last two decades (e.g. Howard, 1999; Shujaa, 1994), more recently by such researchers as Lubienski (2002), Anderson (2007), Lewis (2008), and Obiakor and Beachum (2006). The achievement gap is characterized by lower academic performance by African American and Hispanic students when compared to their White counterparts. The achievement gap is characterized by lower academic performance by African American and Hispanic students when compared to their White counterparts. However, others (Ladson-Billings 2009) characterize the gap as a result of differential access to education, with economic, sociopolitical, moral components found historically over time and not just the effect of a single factor or testing situation.

Some studies have examined performance of students in particular subject areas. A study by the National Center for Educational Statistics (2009) addressed the achievement gap between African American and White students in the areas of mathematics and reading; and Hispanic and White students in mathematics and reading on the National Assessment of Educational Progress (NCES, 2011). In contrast to the research cited, which addressed the achievement gap in general terms, or on mathematics and reading tests, this dissertation research focused on achievement as measured by performance on concept questions in Social Studies TAKS Tests. This dissertation research found that there was an achievement gap between ethnic groups. According to the test results, White students scored significantly higher than African American and Hispanic students on social studies concept questions in 2006 and 2009 TAKS Tests.

Socio-economic Status and Test Performance

Researchers have found a correlation between socio-economic status and student performance. In her research, Valenzuela (2005) reported the strong influence of socio-economic status on school achievement; students from lower socio-economic status perform less well on standardized tests. As noted in the limitations to this study, the researcher did not have socio-economic status or district data on individual students. The lack of socio-economic data available to the researcher makes a detailed explanation of the performance of students, in terms of SES, impossible.

Conclusion from Research Question 3

Regarding for the Research Question 3, the researcher aimed to analyze whether there was any relationship between choosing correct choices for concept questions on 2006 and 2009 Social Studies TAKS Tests and students' ethnicity, grade level, and nonconcept questions. The researcher also aimed to evaluate how well the independent variables, grade, ethnicity, and nonconcept, predicted choosing correct responses for concept questions in TAKS.

The first goal of this research question, investigating the relationship between variables, the researcher found statistical significant correlation at the $p < .01$ level. There was a significant positive small correlation between concept and grade; a significant small correlation between concept and ethnicity; and a significant positive high correlation between concept and nonconcept question in the 2006 Social Studies TAKS Test. The researcher also found significant correlation at the $p < .01$ level for the 2009 Social Studies TAKS Test. There was a significant positive small correlation between concept and grade, a significant small correlation between concept and ethnicity, a significant positive high correlation between concept and nonconcept question.

The second goal of this research question, predicting choosing correct answer for concept questions, the researcher found that independent variables was significantly related to the choosing correct choices for concept questions at $p < .001$ level. The results also indicated that 65% of the variance in the dependent variable in 2006 and 63% of the variance in the dependent variable in 2009, percentage of correct answer for concept

question, can be predicted from the independent variables, grade, ethnicity, ESL class, and percentage of correct nonconcept question. The conclusion from this research question implied that students those who performed better on nonconcept questions in the both 2006 and 2009 Social Studies TAKS Test more often chose correct answers for concept questions.

Conclusion from Research Question 4

Regarding the Research Question 4, the researcher aimed to investigate the differences on choosing correct answers for concept question between ESL class students and native speaker students. The results of this study indicate that there were significant differences between ESL students and native speaker students on choosing correct answers for concept questions. The mean percentage of correct answers for concept question for ESL students was significantly lower than the mean percentage of correct answers for concept questions for native speaker students. According to the result, ESL students in Grade 8 did worse ($M = 51.22$, $SD = 19.94$) in 2006 and ($M = 58.51$, $SD = 22.20$) in 2009 than native speakers ($M = 73.31$, $SD = 20.12$) in 2006 and ($M = 77.97$, $SD = 20.04$). Similarly, Grade 10 ESL students did worse ($M = 47.30$, $SD = 19.11$) in 2006 and ($M = 56.25$, $SD = 18.23$) than native speakers ($M = 73.48$, $SD = 20.79$) in 2006 and ($M = 77.87$, $SD = 17.42$) in 2009. In addition, Grade 11 ESL students did worst ($M = 53.54$, $SD = 18.20$) in 2006 and ($M = 64.76$, $SD = 20.41$) than native speakers ($M = 73.68$, $SD = 18.01$) in 2006 and ($M = 85.79$, $SD = 15.44$) in 2009. The conclusion from this research question implied that ESL students scored lower on the TAKS test when compared to native language speakers for concept questions.

Implications and Recommendations for Theory and Practice

This study found significant differences between concept questions and nonconcept questions based on students' correct answers for both type of questions in Social Studies TAKS Tests. The result of this study indicated that students were less successful on concept questions than nonconcept questions in both 2006 and 2009 Social Studies TAKS Tests. The researcher also calculated effect sizes because of the criticism about using significance. Grade 10 and Grade 11 had medium effect size, while Grade 8 had small effect size. Students' percentage of correct choices differed among grade and the effect sizes were medium for Grade 8 and Grade 10 while the effect size was high for Grade 11. In addition, the effect size results showed small effect for gender. However, the results showed very high effect size for ESL students. Thus, the researcher foresees some policy making implications coming from his research. These implications grouped into four categories:

- Organizing curriculum
- Textbooks
- Instruction
- Teacher education

Organizing Curriculum

This research foresees a pedagogical insight which is promoting conceptual thinking for social studies courses. Nowadays, technology has tremendous growing trends. Thus, students are exposed to a huge amount of information. Students and teachers have never been faced such an overwhelming and impossible amount of

information to learn and teach. In the technology era, promoting conceptual thinking is crucial for the learners because it offers several advantages. The first advantage of conceptual learning is that it permits students to deal with generalities rather than specifics and allows students to predict what will happen in a new situation. The second advantage of conceptual learning is that students are able to gain a deeper knowledge of a situation because they are freed from redundant detail. Therefore, students must have some logical system to organize and order the overwhelming volume of random information and experiences that face them. Furthermore, this study suggests organizing a curriculum around concepts which can provide students with an understanding of the relationship and the stability to meet the challenges of the world.

This study mentions some curriculum implications which were provided by West (no date). These implications are:

- Curriculum makers should accommodate some direct and secondary experiences for difficult concepts for students' level.
- The curriculum makers should limit the number of difficult concepts introduced within a brief period of time.
- The curriculum makers should decide the number of concepts that must be understood prior to teaching a higher-level concept which relates them.

Textbooks

The second implication is classified under the title of textbook implications. Texas Education Agency (1975) stated that one of the big challenges for social studies educators was deciding what should be represented in the social studies curriculum and

textbooks to the students for maximum educational value. This concern is still valid. In order to provide students maximum educational value, this study recommends that social studies content should be organized around a framework of concepts and generalization drawn from the various social studies disciplines.

This study also suggest that local and national efforts are needed to create a new framework which incorporates curriculum makers, school districts, and staff members of regional education service centers, and teacher education institutions. This framework should provide guidelines to social studies teachers to plan their social studies programs and to serve as a basis for state adoptions of social studies textbooks.

Instruction

The third implication is related to social studies instruction. Based on the deductive and inductive strategies, several concept attainment models were proposed by researchers (Crabtree, 1967; DeCecco, 1968; Gagne, 1970; Taba, 1966). These concept attainment models aimed to provide social studies teachers a useful instructional tool because concepts in social studies are difficult to understand. These models offered teachers some approaches and allowed generalizability for a specific lesson. The researcher provided three different concept attainment models in Chapter II. These three models were offered to suggest some approaches for social studies teachers. On the other hand, these three models shared several of the same characteristics. First, these three models use examples and non-examples for concept acquisition. Teachers may ask about the function of non-examples. Joyce, Weil and Calhoun (2009) asserted that non-examples are important because they help students identify the boundaries of the

concept. All those three models follow systematic instruction. Also, the models consider the importance of prior knowledge to acquire new concepts. Practice plays key role to acquire new concepts in the three models. Teachers can use these concept attainment models with children of all ages and grade levels (Joyce, Weil, & Calhoun, 2009). The researcher suggests social studies teachers to take the essence of these three models and incorporate its features into their natural teaching styles.

Another implication is related to providing essential information to both pre-service and in-service social studies teachers. Social studies method courses should provide traditional concept learning models, their advantages and limitations to train pre-service social studies teachers on concept attainment. School districts should organize workshops about the same issue to train in-service social studies teachers. Similarly with Stanley's (1985) idea, these method courses and workshops should include dissemination of the current research on concept learning and suggestions for applying new technology in their instructions. Therefore, social studies teachers will be able to incorporate alternative strategies to concept teaching. Through these method courses and workshops, both social studies pre-service and in-service teachers will be able to provide systematic conceptual instruction in the classroom to assure students' development of key social studies concepts and comprehension.

Teacher Education

The fourth implication is related to social studies teachers. Inn (1966) mentioned the biggest problem of the social studies teachers, particularly those who are just beginning of their careers, is selecting and providing relevant learning experiences for

students. Inn also asserted the importance of social studies teachers' own grasp of the particular concept or generalization. Therefore, this research foresees several implications for teachers. First, there is a need to provide teachers well developed conceptual learning materials which will guide teachers on concept development. Also, this research recommends a policy implication that school districts should provide experts to social studies teachers to show them ways to effectively teach social studies concepts. Second, social studies method courses should take pre-service social studies teachers' attention to the importance of knowing learning hierarchies that require the learning of simpler rules as prerequisites to efficient attainment. Social studies preservice teachers should also be aware of that learning has a cumulative character, in which the acquisition of specific rules establishes the possibility of transfer of learning to a number of more complex concepts (Gagne, 1970).

This study also suggests that teachers should be aware of the idea that understanding social studies contexts is dependent upon attainment of numerous abstract social studies concepts and concepts are central to the understanding of this discipline (Reyes, 1983). Therefore, social studies teachers should examine the number of concepts and be aware when choosing text for classroom and also the difficulty of concepts.

Recommendations for Future Research

This research has some suggestions for further research. The first suggestion is that future research should include socio-economic status to examine its effects on concept learning. In addition, future research should focus social studies instructional program for concept learning. Also, as Martorella (1972) stated several decades ago,

future researcher should focus on making an instructional program which provides for variables such as reading level, topical preference, and learning-style preference.

This study suggests that further research should focus on the differences between learning conjunctive concepts and disjunctive and relational concepts. As Martorella (1972) mentioned before, learning disjunctive and relational concepts are harder than conjunctive concepts. Therefore, some empirical research is needed to clarify these differences. Also, the effects of using social media and technology for learning social studies concepts should be another researchable problem for social studies educators. The effects of visualization on students' achievement on social studies concept learning should be examined. In addition, some experimental studies are needed to observe the effectiveness of different concept learning type for social studies concepts.

In summary, this study aimed to determine whether Grade 8, Grade 10, and Grade 11 students perform better on social studies questions which were classified as concept questions compared to questions which were classified nonconcept questions. A statistical significant difference was found between the percentage of correct concept questions and nonconcept questions. Students had higher achievement on nonconcept questions than concept questions.

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APPENDIX A

Table 33
Questions Classified as Concept Questions

| 2006 Social Studies TAKS Test | Question Number |
|-------------------------------|---|
| Grade 8 | 9, 11, 12, 13, 15, 18, 20, 23, 24, 27, 30, 35, 36, 40, 43 |
| Grade 10 | 5, 10, 11, 13, 14, 22, 23, 24, 29, 30, 32, 33, 34, 36, 43, 48, 49 |
| Grade 11 | 3, 4, 5, 6, 14, 20, 21, 22, 26, 30, 34, 36, 38, 39, 40, 51, 52 |
| 2009 Social Studies TAKS Test | |
| Grade 8 | 5, 8, 12, 17, 25, 28, 32, 36, 37, 42, 45, 46 |
| Grade 10 | 2, 3, 9, 11, 13, 16, 20, 22, 23, 25, 27, 28, 37, 39, 47, 50 |
| Grade 11 | 4, 5, 8, 10, 14, 15, 17, 19, 20, 24, 30, 32, 33, 46, 47, 50, 51, 52 |

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