EFFECTS OF NONSUPPORTING DATA ON SIXTH GRADE STUDENTS' ABILITY TO FORM AND TO USE A SOCIAL STUDIES GENERALIZATION

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TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

CHAPTER I

INTRODUCTION

A generalization may be defined as a synthesis of facts (data) that identifies a relationship between two or more concepts. Generalizations may be viewed as the most important form of social studies knowledge. They may be more useful and intellectually powerful than a singular factual statement because they can show the relationship between facts and categories, producing a more accurate and complex view of the world. In this manner the student obtains a more efficient kind of knowledge. Because generalizations are a summary of more specific kinds of knowledge, the insights which are obtained may be transferred from one content to another. "In fact, only through generalizations can one develop knowledge in one time and place and apply it in another" (Wehlage & Anderson, 1972). In addition, Taba (1967) maintains that generalizations are the most durable form of knowledge because they do not change as rapidly as does specific information. They can be used as centers around which to organize teaching units and serve as criteria for determining which concrete details are relevant and which are not (Taba, 1967).

Statement of the Problem

The tentativeness of a social studies generalization owes itself to the presence of nonsupporting data. This means that for most generalizations, exceptions may be found. This is not a flaw, but rather a plus, because although generalizations are based on fact, their purpose is to show connecting relationships which can be applied to new situations. As a synthesis of more specific information, generalizations contain facts and concepts. However, while a fact in one sense never changes, a generalization may.

For example, the generalization commonly taught in the first grade, "Families work and play together", can be used to show that many families work and play together. However, there are certainly some exceptions. During instruction, it is appropriate to call students' attention to the exceptions or nonsupporting data so they recognize that "Families work and play together" has exceptions.

It seems plausible that students who receive nonsupporting data will learn more accurate generalizations than students who receive no nonsupporting data. However, only one previous study was found that examined this (Hagen, McKinney, & Benes, 1991). Results of the study showed that students who were presented with nonsupporting as well as supporting data performed significantly better on recall of a generalization, as well as predicting and explaining situations using the acquired generalization, than those who

were presented with supporting data only. This scant research invites further exploration.

The specific questions addressed in this study were: (a) will students who are presented with nonsupporting data, either after generalization formation, or prior to and post generalization formation, perform better on tests measuring (1) ability to state the generalization, (2) recall and recognition of the generalization, and (3) utilization of the generalization to predict and explain hypothetical situations than students who do not receive nonsuppporting data; (b) will students taught with nonsupporting data prior to and post generalization formation perform better on tests measuring (1) ability to state the generalization, (2) recall and recognition of the generalization, and (3) utilization of the generalization to predict and explain hypothetical situations, than students who receive nonsupporting data post generalization formation; (c) will students presented with nonsupporting data perform better on test questions asking them to predict or explain situations than those who are presented with no nonsupporting data.

Justification for the Study

Few researchers have examined generalization formation (see McKinney, 1991). While much has been done to explore how students learn concepts, and much has been written about the role of facts in the social studies, generalizations

have seemingly taken a back seat. This seems rather odd because generalizations may be the most important form of social studies knowledge. We know from concept research that the use of nonexamples along with examples will help the student to learn the concept better than if only examples were presented (Hunnicutt, 1981). Since concepts and generalizations are taught and learned in the same ways, it is likely that the use of nonsupporting data in the acquisition of a generalization will allow the student to learn the generalization better.

Definition of Terms

For the purposes of this study, the following definitions were used:

1. Generalization: a generalization may be defined as a synthesis of facts which states a relationship between two or more concepts.

2. Nonsupporting data: information (a fact or another generalization) which contradicts the generalization being taught.

3. Ability: students were classified according to their second semester letter grade in social studies. Students who earned a grade of "A" were classified as high ability, "B" students were placed in the above average ability group, "C" students were categorized in the average ability group, while "D" and "F" students were classified as

low ability.

4. Discrimination behavior: the ability to recognize data that do not support a generalization or the ability to distinguish between examples and nonexamples of concepts.

5. Concept: may be defined as a type of content that (a) is an abstraction and does not exist in reality, (b) is definitional in nature, (c) refers to a category of phenomena possessing similar characteristics, and (d) results from the process of categorizing a number of observations (Naylor & Diem, 1987, p. 187).

6. Inductive: a type of instruction moving from specific to general; in generalization formation presenting the facts or data and allowing the students to infer a generalization.

7. Egruleg: a special inductive approach. In an egruleg presentation, facts are presented, then the learner is asked to synthesize the generalization, and additional facts are presented to test the generalization. This approach combines inductive and deductive methods.

8. Overgeneralization: labeling a nonexample as an example or applying a generalization to inappropriate situations.

9. Undergeneralization: labeling an example as a nonexample or failing to apply a generalization in appropriate situations.

Hypotheses

Based on the findings from one previous study that examined the role of nonsupporting data on the acquisition of a social studies generalization, the researcher tested the following hypotheses:

H1: Students who are taught with nonsupporting data after generalization formation or before and after generalization formation will score significantly higher on a question that requires the students to write the generalization at the midpoint in the egruleg sequence, including qualifying it, than those who do not receive nonsupporting data.

H2: Students who are taught with nonsupporting data after generalization formation or before and after generalization formation will score significantly higher on a question that requires the students to write the generalization after completing the egruleg sequence, including qualifying it, than those who do not receive nonsupporting data.

H3: Students taught with nonsupporting data or supporting data only will not significantly differ in ability to recognize situations where the generalization applies.

H4: Students who are taught with nonsuppporting data either after generalization formation or before and after generalization formation will score significantly higher on

items that require students to make predictions using the generalization than students who are taught with no nonsupporting data.

H5: Students who are taught with nonsupporting data after generalization formation or before and after generalization formation will score significantly higher on items that require students to use the generalization to explain situations than students who are taught with no nonsupporting data.

H6: Students who are taught with nonsupporting data after generalization formation or before and after generalization formation will score significantly higher on recognition of the generalization than students who are taught with no nonsupporting data.

H7: Students who are taught with nonsupporting data after forming the generalization will score significantly higher on a question that requires the students to write a generalization during the middle of the lesson than students taught with nonsupporting data before and after forming the generalization.

H8: Students who are taught with nonsupporting data after forming the generalization will score significantly higher on a question that requires the students to write the generalization at the end of the lesson than students who were taught with nonsupporting data before and after generalization formation.

H9: Students who are taught with nonsupporting data after forming the generalization will score significantly higher on items that require the students to use the generalization to make predictions than students who were taught with nonsupporting data before and after forming the generalization.

H10: Students who are taught with nonsupporting data after forming the generalization will score significantly higher than students who were taught with nonsupporting data before and after forming the generalization on items that require the students to use the generalization to explain situations.

H11: Students who are taught with nonsupporting data after forming the generalization will score significantly higher than students taught with nonsupporting data before and after forming the generalization on an item that requires the students to recognize the generalization (i.e., qualify the generalization).

Delimitations

The findings of this study are limited to the sixth grade students who participated in the research.

Assumptions

An assumption was made that students did not differ in their prior knowledge of the generalization and if

differences did exist the effects were random.

Overview

The statement of the problem and hypotheses are presented in Chapter 1. Relevant literature is discussed in Chapter 2. Procedures for collecting data are presented in Chapter 3. Findings are presented in Chapter 4. Conclusions, implications, and recommendations for further study are presented in Chapter 5.

CHAPTER II

REVIEW OF THE LITERATURE

Prior to a discussion about the merits of utilizing nonsupporting data in facilitating the learning and transfer of social studies generalizations, an argument for (a) desirable outcomes of education, (b) how social studies education facilitates these outcomes, and (c) why generalizations are integral to the social studies and therefore of paramount importance will be presented.

Desirable Outcomes of Education as Achieved Through the Social Studies

The social studies are uniquely suited to facilitate what are considered to be desirable outcomes of education. These desirable outcomes include not only increased knowledge, but also the development of critical thinking skills so that students may be able to generalize or transfer this new knowledge to other situations (David, 1968). The social studies have traditionally focused on the relationship between the learner and his environment (David, 1968), and the development of the ability to apply this information to newly encountered situations. Hanna (1957)

concurs that the social studies deals with the way people live with their fellow man in the present as well as the future. Armstrong (1970) views the social studies as the one medium wherein students can develop critical thinking skills which we as a society feel are necessary in order to be a contributing citizen. The fundamental component which best facilitates critical thinking, synthesis, and transfer of newly encountered information is the generalization.

The Role of Generalizations in the Social Studies

Social studies curriculum is commonly divided into the three components of knowledge, skills, and values. Knowledge is further divided into facts, concepts, and generalizations. Of these three constructs, Brownell and Hendrickson (1950) maintain that generalizations are the most difficult to attain. Murray (1978) describes the relationship between facts, concepts, and generalizations as hierarchical. Facts are the foundation or cornerstone upon which concepts can emerge. Both facts and concepts can be then incorporated into generalizations. Thus generalizations are at the pinnacle of conceptual learning.

Other leading educators agree that generalizations should play a critical role in the social studies. McKinney (1991) contends that generalizations are at the center of social studies teaching. Brownell and Hendrickson (1950)

recommend that children be given many and frequent occasions to generalize about what they read, see, and hear in the classroom. Social studies are particularly suited to encourage the teaching and learning of concepts and generalizations (Boedecker, 1971) because they provide a framework within which abstractions and critical thinking strategies can be developed (Crabtree, 1966).

Definitions of Generalizations

Generalizations have been defined in various ways. The most commonly held definitions deal with the generalization as being a synthesis of facts and concepts. Taylor (1941) recognizes a generalization as a statement of principle based upon apparent relationships existing between a number of specific instances or experiences. Brownell and Hendrickson (1950) agree that any generalization confirms some abstract relationship between two or more concepts.

Other definitions pertain to the way generalizations are able to foster critical thinking, and can be applied to newly encountered situations. Murray (1978) allows that generalizations present a thesis or hypothesis frequently phrased in an "if...then" sequence. He states that generalizations are testable and allow the students to look across time and space to see if the stated relationship exists. Besides an extending knowledge role, generalizations also facilitate critical thinking

development (Benes, 1991) because they are a synthesis of factual and conceptual information.

A third way of defining generalizations relates to their tentativeness. "Generalizations should meet the requirements of tentativeness, accuracy and inclusiveness" (McNaughton, 1969). Generalizations which are acceptable may in time become unacceptable when additional knowledge is uncovered (Murray, 1978).

Can Children Be Taught to Generalize?

Taylor (1941) believes that the learner may be helped in generalizing through instruction and training. David (1968) asserts that teaching social studies generalizations is a desirable practice especially when the opportunity is given for children to develop their own generalizations.

Womack (1968) provides two techniques for helping students to develop generalizations. One is to develop a single concept into a generalized statement that proposes relationships among the concepts (aptly named the 'single concept technique'); the other is a six step process which involves the students in developing a generalization from information presented in paragraph form (the paragraph technique).

How Children Learn Generalizations

McKinney (1991) asserts that in order to demonstrate

understanding of a generalization there are four things a learner must be able to do:

1. State the generalization.
2. Recognize whether facts support or contradict the generalization.
3. When learners understand a generalization, they should be able to recognize whether it applies to newly encountered situations and be able to use the generalization to explain what is happening.
4. Learners should also be able to use the generalization to predict what will happen in the future or in hypothetical situations.

David (1968) lists seven teaching/learning conditions which foster growth in the ability of students to generalize. He proposes that the ability to generalize is dependent on a composite of several thinking skills.

1. Transfer learning.
2. Relate data.
3. Retain knowledge.
4. Think critically.
5. Draw conclusions.
6. Think reflectively.
7. Verbalize summarizations.

The Four Ways Generalizations Are Taught

Generalizations may be taught in only four ways. These

are: (a) inductive (egrule)--facts or data are presented and the students are asked to synthesize the facts into a generalization; b) deductive (ruleg)--the students are first given the generalization and then presented with the underlying facts; c) memorization--the student is not given supporting facts, but is asked to memorize the generalization; and d) a special inductive approach or egruleg--this is similar to egrule except that after synthesizing the generalization additional facts are presented against which the generalization is tested.

Is There One Best Way to Teach a Generalization?

A review of the literature in the area of teaching methods yields conflicting results. For example, in a study conducted by Long (1979), 29 undergraduate students were randomly divided into two groups to determine whether inductive or deductive teaching methods were more effective. She used Taba's inductive model and Ausubel's deductive model. The groups spent a short time being taught, were reviewed, quizzed, and then retested one week later for retention of the generalizations. The students who were taught inductively scored significantly higher in terms of knowledge of the generalizations and motivation (Long, 1979).

In contrast, Wallace (1966) conducted research to

discover whether an inductive, a deductive, or an intuitive approach was more effective in terms of teaching culturally advantaged second and third grade students. Results of the study showed that all three approaches were adequate but that the deductive approach was clearly superior.

Lahnston (1972) also advocates deductive teaching methods. In a study comparing inductive to deductive teaching, 24 third grade students were randomly assigned to two groups. Group 1 was presented with the demonstration-deductive strategy while Group 2 was presented with the directed discovery-inductive strategy. Students were taught a generalization, then tested for immediate retention on transfer and delayed retention and transfer two weeks after mastery. Results of his study showed a significant difference between treatments in favor of the demonstration (deductive) strategy on the dependent variable of immediate retention.

Other educators have found that a combination of inductive and deductive teaching methods is the most efficient (Hanna, 1957). To date, support can be found in favor of both inductive and deductive teaching strategies. While the research is unclear as to which strategy is superior, the conclusion may be drawn in accordance with Brownell and Hendrickson (1950), that more important than whether a generalization is taught inductively or deductively is that it be full of meaning and responsive to

functional use.

Further investigation of inductive versus deductive teaching strategies may help to explain the inconclusiveness of this body of research. There is the possibility that higher intelligence students may simply perform better, no matter the teaching method. Findings from a replication study conducted by Jacka and Hermann (1977) support this claim. They hypothesized that on a new task, elementary school children would perform better on the egrule (inductive) method and high school children would perform relatively better on the ruleg (deductive) method. The sample consisted of 96 fifth and ninth grade students of high and average IQ. Results showed students in both the inductive and deductive treatment groups who had high IQs performed significantly better than the students who had average IQ scores.

Concept Research Regarding Nonexamples

Much of the research pertaining to concept learning is likely pertinent to generalization learning. Specifically, the role of concept nonexamples appears to be relevant. Smoke (1933) postulated that children ordinarily learned from categorizing, comparing, and contrasting. He experimented with an artificial task in which the instances were randomly ordered with the order changing after each succession through the list. No logical relationship was

established between examples and nonexamples, leading him to conclude that negative instances were of no value in concept learning.

However, in the almost 60 years since that inaugural study, findings from many studies indicate that a very strong case can be made in favor of including nonexamples. It is now widely accepted that nonexamples do indeed facilitate concept learning. The problem in the past may have been that researchers failed to quantify, control and examine the placement of positive and negative examples, which led to conflicting results (Williams & Carnine, 1981).

Current research supports the claim that nonexamples should be presented along with examples to prevent subjects from making overgeneralizations, or conceiving an irrelevant attribute as a critical attribute (Tennyson, 1973). The nonexamples should be closely matched to the examples, while the subject is directed to concentrate on the critical attributes.

Williams and Carnine (1981) tested this method of using closely matched examples and nonexamples in a series of studies which used samples of preschool children. In two experiments, one group was taught an unfamiliar line angle concept with an example sequence containing minimally different, matched positive and negative examples, while the other group was taught the same concept with a sequence of positive examples only. In both experiments, the subjects

taught with the sequence containing positive and negative examples identified significantly more transfer items than the positive only group.

From this research the conclusion may be drawn that when an individual can evaluate examples and nonexamples of a concept in terms of presence or absence of defining attributes, then a concept has been attained at the formal level (Klausmier & Feldman, 1975). In other words, an individual who can apply a concept to new instances, ably distinguishing between "far out instances" and "close in noninstances" would be said to have a broader and deeper comprehension of a concept than a person who could not (Anderson, 1973).

Nonsupporting and Supporting Data in Generalization Research

There has been only one study conducted which explored the role of nonsupporting data in the acquisition of a social studies generalization. Hagen, McKinney, and Benes (1991) discovered that students who received supporting and nonsupporting data performed significantly better on tests requiring recall of the generalization than students who received supporting data only.

In this study, 91 seventh grade students were randomly assigned to one of three treatment groups. The groups were taught the generalization that there is a positive

relationship between average yearly income and percentage of citizens in a country who can read and write.

All three groups were presented with charts including the information relating income and literacy, and were asked after receiving the information to write the generalization. Group 1 received no nonsupporting data. Group 2 was presented with a chart containing supporting data only, followed by a second chart after generalization formation, containing nonsupporting as well as supporting data. Group 3 received supporting and nonsupporting data in both charts.

Results of ANOVA indicated that the groups taught with nonsupporting data did qualify the generalization more often than those students who were taught without nonsupporting data. The two groups taught with nonsupporting data did not differ.

Results of analysis of variance regarding ability to recall facts indicated that the three groups did not differ statistically on the 10 items that required the students to recall facts.

Results of analysis of variance regarding the use of the generalization to make predictions indicated that the three groups did not differ statistically on the five items that required the students to use the generalization to make predictions. Results of analysis of variance regarding the use of the generalizations to explain situations indicated that the three groups did not differ significantly.

However, results of analysis of variance regarding the ability of students to recognize the generalization indicated that the three groups statistically differed. SNK tests indicated that means for the two groups that were taught with nonsupporting data were significantly larger than the mean for the group taught without nonsupporting data. Groups that were taught with nonsupporting data did not differ statistically (Hagen, McKinney & Benes, 1991).

One related study was discovered which examined the appropriate number of data to be used in teaching a generalization. Martin, Harrod and Siehl (1980) addressed this question: "How many events must be experienced, and how similar must these events be, before an individual begins to generalize?"

The subjects who participated in this study were 89 MBA students from Stanford University. Students were randomly assigned into three groups and asked to read story materials and answer questions about what they had read. Each story concerned one event which happened to an employee at a specified corporation. The independent variables were manipulated by varying the content of the event descriptions. The first independent variable was the number of event descriptions (one, two, three, or four). The second independent variable for subjects reading about more than one event was the degree of similarity of events (similar or dissimilar).

Results showed that exposure to two or three similar events was enough to trigger the process of generalization, while subjects exposed to four similar events showed even more evidence of generalization. The process of generalization began, for these subjects, after exposure to two similar events - one event was not enough.

Explication of the Problem

(Rationale)

Generalizations play an integral role in the social studies. However, the body of social studies research has traditionally centered around facts and concepts. Although only one study was found which examined the role of nonsupporting data in the acquisition of a social studies generalization (Hagen, McKinney & Benes, 1991), the research related to nonexamples in concept formation probably applies.

Therefore, due to the lack of research related to the role of nonsupporting data in generalization formation, it is vital to generalization research that the role of nonsupporting data be examined. The following chapters will explain the instructional strategies which were used, results and analysis of the data, and present a summary and recommendations for further study.

CHAPTER III

METHODOLOGY

In this chapter, I will describe the sample and the school setting. Also, I will discuss the lessons and treatment groups as well as how the data were collected and analyzed.

Subjects

Fifty-two sixth grade students were randomly assigned to one of three treatment groups. There were 19 males and 33 females. Three males were not included in the study. One of the three excluded males was a recent transfer from Poland and had a limited grasp of English; two other males chose not to participate. This sample included all sixth grade students who attended this school and were present on the day of data collection. Based on the last semester's grade, 27% of the students made a grade of A, 25% made a grade of B, 23% made a grade of C, 19% made a grade of D, and 6% made a grade of F. Most of the students were from lower middle to middle socioeconomic class backgrounds.

School

The school was located in a city with a population of

over 17,000. The city was located approximately 15 miles from the edge of a city of 350,000. This school was one of seven elementary schools located within the school district. The sample school had grades kindergarten through eight. The school employed 35 teachers.

Lessons and Treatment

Three lessons were developed to teach the generalization, "When two cultures come in contact with each other, they usually become more alike." The lessons were presented via self-instructional booklets. Each lesson began with an introduction which included a discussion of the concept of culture, after which the students were directed to write in their own words a definition of culture. The instructions to each lesson directed the students to read material, answer questions, and to proceed to the appropriate page. Twice during the lessons the students were asked to write what they thought the generalization was (see Appendices A, B, and C).

The lessons utilized an egruleg sequence. This method was selected because it includes the merits of an inductive approach (i.e., generalization formation) and a deductive approach (i.e., generalization testing).

Treatment 1. Treatment 1 began with a short discussion of the concept of culture. Following this discussion students were directed to write a definition of culture.

The purpose of this exercise was to make sure that the students understood what culture was because it was an integral part of the generalization (When two cultures come in contact with each other, they usually become more alike).

This treatment was divided into two sections. In the first section the students were directed to read four paragraphs and answer questions about each of the paragraphs. Each paragraph illustrated how cultures influenced one another after coming in contact for an extended period of time. After these four paragraphs, the students were directed to write the relationship described in these four paragraphs. The purpose of this was to ascertain whether the students had arrived at the generalization.

The second section of Treatment 1 also consisted of a series of four paragraphs including only examples (supporting data) of how one culture influences another culture after living in close contact for an extended period of time. After studying these four paragraphs, the students were asked to write again the relationship as they understood it described in those four paragraphs. The students were asked to write the generalization a second time to see whether they had revised or qualified their first written statements. They were then directed to circle yes or no if the second sentence they had written was the same as the first. If it were different, then there were

lines provided to write what the difference was. This concluded the lesson (see Appendix A).

Treatment 2. Treatment 2 was identical in structure to Treatment 1, except for the second section. In the first section examples only (supporting data) of the generalization were presented. Following the presentation of the four sample paragraphs, students were directed to write in their own words the relationship illustrated in the four paragraphs. Section 2, however, differed from Treatment 1 in that the students were given two illustrations that supported the generalization (supporting data), and two illustrations which did not support it (nonsupporting data). At the end of this section, just as described in the discussion of Treatment 1, the students were directed to write the relationship as they understood it. They were then directed to circle yes or no if the second sentence differed from the first. If the sentence were different, then there were lines provided to write what the difference was. This concluded the lesson. In summary, Treatment 2 differed from Treatment 1 in that Treatment 2 contained nonsupporting data in the second section (see Appendix B).

Treatment 3. Treatment 3 was identical in structure to Treatments 1 and 2. However, Treatment 3 differed from the other two lessons in that Section 1 included two paragraphs that illustrated the generalization (supporting data) and

two paragraphs that contradicted the generalization (nonsupporting data). At the end of Section 1, the students were directed to write the relationship as they understood it described in the four paragraphs. Section 2 was similar to section one in that it also included four paragraphs of both supporting and nonsupporting data. At the end of Section 2 the students were again directed to write a sentence describing the relationship expressed in the four paragraphs. They were then directed to circle yes or no if the second sentence differed from the first. If the sentence was different, then there were lines provided to write what the difference was. This concluded the lesson (see Appendix C).

Data Collection

Data were collected on the last day of the school year. All of the students were gathered into the school cafeteria and seated at the tables. The students were monitored by the researcher, a university professor, and three classroom teachers. The lesson booklets were randomly distributed to the students.

Instrumentation

Immediately after completing the lesson the students were administered the test (see Appendix D). The test consisted of 14 items. The first three items were short

paragraphs containing only examples of the generalization. Students were directed to circle yes, no, or unsure to indicate whether the sentences agreed with what they had learned that day. Questions 4-7 involved using the generalization to predict events. The students were instructed to read a short paragraph. Based on what they had learned in the lesson, the students were asked to choose the best explanation by circling the letter of the best choice. Items 8-13 instructed the students to use what they knew about the generalization to predict what would most likely happen. The students read short paragraphs and then circled a multiple choice answer. Question 14 was a multiple choice question. The question was, "Which of the following sentences best describes what you learned today?" The purpose of the question was to discover to what degree the students had learned the generalization.

The reliability of the 14 item test, as estimated by Cronbach's alpha, was .67. The reliability of the 4 item subtest which required the students to use the generalization to explain situations was estimated by Cronbach's alpha to be .43. The reliability of the six item subtest which required students to make predictions was estimated by Cronbach's alpha to be .57.

Design and Analysis

A randomized posttest-only design was used. Subjects

were randomly assigned to one of three treatment groups. Analysis of covariance was used to test the hypotheses. Semester averages in social studies were used as the covariate.

CHAPTER IV

ANALYSIS OF DATA

This study attempted to answer the following questions:

1. Do students taught with nonsupporting data either before generalization formation or before and after generalization formation form more accurate generalizations (i.e., qualified) than those taught without nonsupporting data?

2. Do students taught with nonsupporting data before and after generalization formation form more accurate generalizations than students taught with nonsupporting data after generalization formation?

3. Do students taught with nonsupporting data perform better on questions that ask the student to use the generalization to predict or explain situations than those students who are taught with no nonsupporting data?

The hypothesis tested were:

H1: Students who are taught with nonsupporting data after generalization formation or before and after generalization formation will score significantly higher on a question that requires the students to write the generalization at the midpoint in the egruleg sequence,

including qualifying it, than those who do not receive nonsupporting data.

H2: Students who are taught with nonsupporting (or irrelevant) data after generalization formation or before and after generalization formation will score significantly higher on a question that requires the students to write the generalization after completing the egruleg sequence, including qualifying it, than those who do not receive nonsupporting data.

H3: Students who are taught with nonsupporting data or supporting data only will not significantly differ in ability to recognize situations where a generalization applies.

H4: Students who are taught with nonsupporting data either after generalization formation or before and after generalization formation will score significantly higher on items that require students to make predictions using the generalization than students who are taught with no nonsupporting data.

H5: Students who are taught with nonsupporting data after generalization formation or before and after generalization formation will score significantly higher on items that require students to use the generalization to explain situations than students who are taught with no nonsupporting data.

H6: Students who are taught with nonsupporting data

after generalization formation or before and after generalization formation will score significantly higher on recognition of the generalization than students who are taught with no nonsupporting data.

H7: Students who are taught with nonsupporting data after forming the generalization will score significantly higher on a question that requires the students to write a generalization during the middle of the lesson than students taught with nonsupporting data before and after forming the generalization.

H8: Students who are taught with nonsupporting data after forming the generalization will score significantly higher on a question that requires the students to write a generalization at the end of the lesson.

H9: Students who are taught with nonsupporting data after forming the generalization will score significantly higher on items that require the students to make predictions using the generalization than students who were taught with nonsupporting data before and after forming the generalization.

H10: Students who are taught with nonsupporting data after forming the generalization will score significantly higher than students who were taught with nonsupporting data before and after forming the generalization on items that require the students to use the generalization to explain situations.

H11: Students who are taught with nonsupporting data after forming the generalization will score significantly higher than students taught with nonsupporting data before and after forming the generalization on an item that requires the students to recognize the generalization (i.e. qualify the generalization).

Tests of Hypotheses

Hypothesis 1

The first hypothesis stated that students who were taught with nonsupporting (or irrelevant) data after generalization formation or before and after generalization formation would score significantly higher on a question that required the students to write the generalization at the midpoint in the egruleg sequence, including qualifying it, than those who did not receive nonsupporting data. This hypothesis was not supported. Results of analysis of covariance indicated that the three groups did not differ significantly, $F(2,48) = 2.68$, $p = .08$.

Students assigned to the no nonsupporting data group had an adjusted mean score of .12. No students who were assigned to the group who had nonsupporting data after forming the generalization wrote correct generalizations. Students who were taught with nonsupporting data before and after forming the generalization had an adjusted mean score of .25 (see Tables 1 & 2).

Table 1

Results of Analysis of Covariance of Ability to Qualify First Written Generalization

Source	DF	Sum of Squares	Mean Squares	Ratio	F Prob
Covariates	1	.007	.007	.066	.799
Treatment	2	.533	.267	2.683	.079
Explained	3	.540	.180	1.811	.158
Residual	48	4.768	.099		
Total	51	5.308	.104		

Table 2

Unadjusted and Adjusted Means by Treatment Group for First Written Generalization

Treatment	N	Unadjusted	Adjusted
No nonsupporting	18	.12	.12
Nonsupporting after generalization	18	.0	.0
Nonsupporting before and after generalization	16	.25	.25

Hypothesis 2

The second hypothesis stated that students who were taught with nonsupporting (or irrelevant) data after generalization formation or before and after generalization formation would score significantly higher on a question that required the students to write the generalization after completing the egruleg sequence, including qualifying it, than those who did not receive nonsupporting data. This hypothesis was not supported. Results of the analysis of covariance indicated that the three groups did not differ significantly, $F(2,48) = 2.19$, $p = .124$.

Students assigned to the no nonsupporting data group had an adjusted mean score of .06. Students who received nonsupporting data after generalization formation had an adjusted mean score of .10, while those students who were taught with nonsupporting data following the generalization had an adjusted mean score of .30 (see Tables 3 & 4).

Hypothesis 3

The third hypothesis stated that students who were taught with nonsupporting data or supporting data only would not significantly differ in ability to recognize situations where the generalization applies. The data supported this hypothesis. Results of analysis of covariance indicated that the three groups differed significantly, $F(2,48) = .131$, $p = .88$.

Table 3

Ability to Qualify Second Written Generalization

Source	DF	Sums of Squares	Mean Square	F Ratio	F Prob
Covariates	1	.150	.150	1.186	.282
Treatment	2	.552	.276	2.185	.124
Explained	3	.702	.234	1.852	.150
Residual	48	6.067	.126		
Total	51	6.769	.133		

Table 4

Unadjusted and Adjusted Means by Treatment Group for Second Written Generalization

Treatment	N	Unadjusted	Adjusted
No nonsupporting	18	.05	.06
Nonsupporting after generalization	18	.11	.10
Nonsupporting before and after generalization	16	.31	.30

The adjusted means for the group taught with no nonsupporting data was 1.57, while adjusted means for the group taught with nonsupporting data after forming the generalization and group taught with nonsupporting data before and after forming the generalization was 1.66 and.50 respectively (see Tables 5 & 6).

Hypothesis 4

The fourth hypothesis stated that students who were taught with nonsupporting data either before generalization formation or before and after generalization formation would score significantly higher on items that required students to make predictions using the generalization than students who were taught with no nonsupporting data. The data did not support this hypothesis. Results of analysis of covariance indicated that the three groups did not differ significantly, $F(2,48) = 1.88, p = .829$. The adjusted means for the three groups were 2.02, 2.30, and 2.32 respectively (see Tables 7 & 8).

Hypothesis 5

The fifth hypothesis stated that students who were taught with nonsupporting data after generalization formation or before and after generalization formation would score significantly higher on items that required students to use the generalization to explain situations than

Table 5

ANCOVA Summary for Ability to Recognize Generalization

Source	DF	Sum of Squares	Mean Squares	F Ratio	F Prob
Covariate	1	.089	.089	.101	.752
Treatment	2	.231	.115	.131	.878
Residual	48	42.373	.883		
Total	51	42.692	.837		

Table 6

Unadjusted and Adjusted Means by Treatment Group for Ability to Recognize Generalization

Treatment	N	Unadjusted Mean	Adjusted Mean
No nonsupporting	18	1.56	1.57
Nonsupporting after generalization	18	1.77	1.66
Nonsupporting before and after generalization	16	1.50	1.50

Table 7

ANCOVA Summary for Ability to Use Generalization to Make Predictions

Source	DF	Sum of Squares	Mean Square	F Ratio	F Prob
Covariates	1	13.532	13.532	5.495	.023
Treatment	2	.926	.463	.188	.829
Explained	3	14.458	4.819	1.957	1.333
Residual	48	118.215	2.463		
Total	51	132.673	2.601		

Table 8

Unadjusted and Adjusted Means by Treatment Groups to Make Predictions

Treatment	N	Unadjusted	Adjusted
No nonsupporting	18	1.09	2.02
Nonsupporting after generalization	18	2.39	2.30
Nonsupporting before and after generalization	16	2.37	2.32

students who were taught with no nonsupporting data.

This hypothesis was not supported. Results of analysis of covariates indicated that the three groups did not differ significantly, $F(2,48) = 1.73$, $p = .189$. The adjusted means for the three groups were 2.83, 2.48, and 2.26 respectively (see Tables 9 & 10).

Hypothesis 6

The sixth hypothesis stated that students who were taught with nonsupporting data after generalization formation or before and after generalization formation would score significantly higher on recognition of the generalization than students who were taught with no nonsupporting data. This hypothesis was not supported. Results of analysis of covariance indicated that the three groups did not differ significantly, $F(2,48) = .348$, $p = .71$. The adjusted means for the three groups were .36, .48, and .49 respectively (see Tables 11 & 12).

Hypothesis 7

The seventh hypothesis stated that students who were taught with nonsupporting data after forming the generalization would score significantly higher on a question that required the students to write a generalization during the middle of the lesson than students taught with nonsupporting data before and after forming the

Table 9

ANCOVA Summary for Ability to Use Generalizations to Explain Hypothetical Situations

Source	DF	Sum of Squares	Mean Square	F Ratio	F Prob
Covariates	1	6.335	6.335	5.556	.023
Treatment	2	3.934	1.967	1.725	.189
Explained	3	10.269	3.423	3.002	.040
Residual	48	54.731	1.140		
Total	51	65.000	1.275		

Table 10

Unadjusted and Adjusted Means by Ability to Explain Hypothetical Situations

Treatment	N	Unadjusted	Adjusted
No nonsupporting	18	2.72	2.83
Nonsupporting after generalization	18	2.56	2.48
Nonsupporting before and after generalization	16	2.19	2.26

Table 11

ANCOVA Summary for Ability to Recognize (i.e. qualify) the Generalization

Source	DF	Sum of Squares	Mean Square	F Ratio	F Prob
Covariates	1	.638	.638	2.548	.12
Treatment	2	.174	.087	.348	.71
Explained					
Residual	48	12.015	.250		
Total	51	12.827	.252		

Table 12

Unadjusted and Adjusted Means by Treatment Groups for Ability to Recognize (i.e. Qualify) Generalization

Treatment	N	Unadjusted	Adjusted
No nonsupporting	18	.33	.36
Nonsupporting after generalization	18	.50	.48
Nonsupporting before and after generalization	16	.50	.48

generalization. This hypothesis was not supported.

The adjusted means for the group who received nonsupporting data after the generalization was .0, while the adjusted means for the group who received nonsupporting data before and after the generalization was .25 (see Tables 1 & 2).

Hypothesis 8

The eighth hypothesis stated that students who were taught with nonsupporting data after forming the generalization would score significantly higher on a question that required the students to write a generalization at the end of the lesson than students who were taught with nonsupporting data before and after forming the generalization. The data did not support this hypothesis.

The adjusted means for the group who received nonsupporting data after the generalization was .10, while the adjusted means for the group who received nonsupporting data before and after the generalization was .30 (see Tables 3 & 4).

Hypothesis 9

The ninth hypothesis stated that students who were taught with nonsupporting data after forming the generalization would score significantly higher on items

that required the students to make predictions using the generalization than students who were taught with nonsupporting data before and after forming the generalization. This hypothesis was not supported.

The adjusted means for the group who received nonsupporting data after the generalization was 2.30, while the adjusted means for the group who received nonsupporting data before and after the generalization was 2.32 (see Tables 7 & 8).

Hypothesis 10

The tenth hypothesis stated that students who were taught with nonsupporting data after forming the generalization would score significantly higher than students who were taught with nonsupporting data before and after forming the generalization on items that required the students to use the generalization to explain situations. This hypothesis was not supported.

The adjusted means for the group who received nonsupporting data after the generalization was 2.48, while the group who received nonsupporting data before and after the generalization was 2.26 (see Tables 9 & 10).

Hypothesis 11

The eleventh hypothesis stated that students who were taught with nonsupporting data after forming the

that required the students to make predictions using the generalization than students who were taught with nonsupporting data before and after forming the generalization. This hypothesis was not supported.

The adjusted means for the group who received nonsupporting data after the generalization was 2.30, while the adjusted means for the group who received nonsupporting data before and after the generalization was 2.32 (see Tables 7 & 8).

Hypothesis 10

The tenth hypothesis stated that students who were taught with nonsupporting data after forming the generalization would score significantly higher than students who were taught with nonsupporting data before and after forming the generalization on items that required the students to use the generalization to explain situations. This hypothesis was not supported.

The adjusted means for the group who received nonsupporting data after the generalization was 2.48, while the group who received nonsupporting data before and after the generalization was 2.26 (see Tables 9 & 10).

Hypothesis 11

The eleventh hypothesis stated that students who were taught with nonsupporting data after forming the

generalization would score significantly higher than students taught with nonsupporting data before and after forming the generalization on an item that required the students to recognize the generalization (i.e., qualify the generalization). The data did not support this hypothesis.

The adjusted means for the group who received nonsupporting data after the generalization was .48, while the adjusted means for the group who received nonsupporting data before and after the generalization was .49 (see Tables 11 & 12).

Summary

The first 6 hypotheses involved students who received nonsupporting data, either prior to generalization formation, or prior to and post generalization formation, versus students who received no nonsupporting data. 5 of these hypotheses stated that students who received nonsupporting data would perform significantly higher on test items regarding (a) writing and qualifying the generalization at the midpoint in the egruleg sequence, (b) writing and qualifying the generalization at the endpoint in the egruleg sequence, (c) ability to use the generalization to make predictions, (d) ability to use the generalization to explain situations, and (e) ability to recognize the generalization. The data did not support these hypotheses.

One of these 6 hypotheses (hypothesis 3) stated that

those students who received nonsupporting data would not significantly differ from students who received supporting data in ability to recognize situations where the generalization applied. The data supported this hypothesis.

The remaining 5 hypotheses (hypothesis 7-11) involved the performance of students who received nonsupporting data after generalization formation versus students who received nonsupporting data prior to and post generalization formation. The hypotheses stated that students who received nonsupporting data post generalization formation would perform significantly higher than students who received nonsupporting data prior to and post generalization formation on items involving (a) writing and qualifying the generalization at the midpoint of the egruleg sequence, (b) writing and qualifying the generalization at the endpoint of the egruleg sequence, (c) ability to use the generalization to make predictions, (d) ability to use the generalization to explain situations, and (e) ability to recognize the generalization. These hypotheses were not supported.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary of Procedures

Current research supports the claim that students who receive nonsupporting data will attain better recall of the generalization than students who receive no nonsupporting data. However, little research has been conducted regarding the role of nonsupporting data on generalization formation.

This study addressed the specific question: Will students who are presented with nonsupporting data, either prior to generalization formation, or post generalization formation, perform better on tests measuring recall and recognition of the generalization, as well as utilization of the generalization to predict and explain new situations.

Three experimental treatment lessons were developed to teach the generalization "When two cultures come in contact with each other, they usually become more alike." The lessons were presented via self-instructional booklets. Each lesson began with an introduction which included a discussion of the concept of culture, after which the students were directed to write in their own words a definition of culture. The instructions to each lesson directed students to read material, answer questions, and to

proceed to the appropriate page. Twice during the lessons the students were asked to write what they thought the generalization was.

Treatment 1 (Appendix A) began with the short introduction discussed above. This treatment was divided into two sections. In the first section the students were directed to read four paragraphs and answer questions about each of the paragraphs. Each paragraph illustrated how cultures influenced one another after coming in contact for an extended period of time. After four paragraphs of this nature the students were directed to write the relationship described in these four paragraphs. The purpose of this was to ascertain whether the students had arrived at the generalization.

The second section of Treatment 1 also consisted of a series of four paragraphs including only examples (supporting data) of how one culture influences another culture after living in close contact for an extended period of time. After studying these four paragraphs, the students were asked to again write the relationship as they understood it described in those four paragraphs. Students were presented with four additional paragraphs and were asked to write the generalization a second time to see whether they had revised or qualified their first written statements. They were then directed to circle yes or no if the second sentence they had written was the same as the

first. If it were different, then there were lines provided to write what the difference was. This concluded the lesson.

Treatment 2 (Appendix B) was identical in structure to Treatment 1, except for the second section. In the first section the same four paragraphs that supported the generalization were presented. Following this presentation of four paragraphs, students were directed to write in their own words the relationship as they understood it. Section 2, however, differed from Treatment 1 in that the students were given two illustrations that supported the generalization (supporting data), and two illustrations which did not support it (nonsupporting data). At the end of this section, just as described in the discussion of Treatment 1, the students were directed to write for a second time the relationship as they understood it. They were then directed to circle yes or no if the second sentence differed from the first. If the sentences were different, then the students were asked to identify how they differed. This concluded the lesson. In summary, Treatment 2 differed from Treatment 1 in that Treatment 2 contained nonsupporting data in the second section.

Treatment 3 (Appendix C) was identical in structure to Treatments 1 and 2. However, Treatment 3 differed from the other two lessons in that the first section included two paragraphs that illustrated the generalization (supporting

data) and two paragraphs that contradicted the generalization (nonsupporting data). At the end of this section, the students were directed to write the relationship as they saw it described in the four paragraphs. The second section was similar to the first in that it also included two paragraphs which contained supporting data and two which contained nonsupporting data. At the end of the second section the students were again directed to write a sentence describing the relationship expressed in the four paragraphs. They were then directed to circle yes or no if the second sentence differed from the first. If the sentence was different, then there were lines provided to describe the difference. This concluded this lesson.

A randomized posttest-only design was used. Subjects were randomly assigned to one of three treatment groups. Analysis of covariance was used to test the hypotheses. Semester averages in social studies were used as the covariate.

Summary and Discussion of Tests of Hypotheses

The main research question was: Will students presented with nonsupporting data, either prior to generalization formation, or post generalization formation, perform better than students who received no nonsupporting data, on tests

measuring recall and recognition of the generalization as well as utilization of the generalization to predict and explain new situations?

H1 proposed that students who were taught with nonsupporting (or irrelevant) data would score significantly higher on a question that required the students to write the generalization during the middle of the lesson. This hypothesis was not supported. Results of analysis of covariance indicated that the three groups did not differ significantly, $F(2,48) = 2.68$, $p = .08$.

H2 proposed that students who were taught with nonsupporting (or irrelevant) data after generalization formation or before and after generalization formation would score significantly higher on a question that required the students to write the generalization after completing the egruleg sequence, including qualifying it, than those who did not receive nonsupporting data. This hypothesis was not supported. Results of analysis of covariance indicated that the three groups did not differ significantly, $F(2,48) = 2.19$, $p = .124$.

H3 proposed that students who were taught with nonsupporting data or supporting data only would not significantly differ in ability to recognize situations where a generalization applied. The research did support this hypothesis. Results of analysis of covariance indicated that the three groups did not differ

significantly, $F(2,48) = .131$, $p = .878$.

H4 proposed that students who were taught with nonsupporting data either after generalization formation or before and after generalization formation would score significantly higher on items that required students to make predictions using the generalization than students who were taught with no nonsupporting data. The research did not support this hypothesis. Results of analysis of covariance indicated that the three groups did not differ significantly, $F(2,48) = .188$, $p = .829$.

H5 proposed that students who were taught with nonsupporting data after generalization formation or before and after generalization formation would score significantly higher on items that required students to use the generalization to explain situations than students who were taught with no nonsupporting data. The research did not support this hypothesis. Results of analysis of covariance indicated that the three groups did not differ significantly, $F(2,48) = 1.73$, $p = .189$.

H6 proposed that students who were taught with nonsupporting data after generalization formation or before and after generalization formation would score significantly higher on recognition of the generalization than students who were taught with no nonsupporting data. The research did not support this hypothesis. Results of analysis of covariance indicated that the three groups did not differ

significantly, $F(2,48) = .348$, $p = .71$.

H7 proposed that students who were taught with nonsupporting data after forming the generalization would score significantly higher on a question that required the students to write a generalization during the middle of the lesson than students taught with nonsupporting data before and after forming the generalization. This hypothesis was not supported.

The adjusted means for the group who received nonsupporting data after the generalization was .0, while the adjusted means for the group who received nonsupporting data before and after the generalization was .25.

H8 proposed that students who were taught with nonsupporting data after forming the generalization would score significantly higher on a question that required the students to write a generalization at the end of the lesson than students who were taught with nonsupporting data before and after forming the generalization. The data did not support this hypothesis.

The adjusted means for the group who received nonsupporting data after the generalization was .10, while the adjusted means for the group who received nonsupporting data before and after the generalization was .30.

H9 proposed that students who were taught with nonsupporting data after forming the generalization would score significantly higher on items that required the

students to make predictions using the generalization than students who were taught with nonsupporting data before and after forming the generalization. This hypothesis was not supported.

The adjusted means for the group who received nonsupporting data after the generalization was 2.30, while the adjusted means for the group who received nonsupporting data before and after the generalization was 2.32.

H10 proposed that students who were taught with nonsupporting data after forming the generalization would score significantly higher than students who were taught with nonsupporting data before and after forming the generalization on items that required the students to use the generalization to explain situations. This hypothesis was not supported.

The adjusted means for the group who received nonsupporting data after the generalization was 2.48, while the group who received nonsupporting data before and after the generalization was 2.26.

H11 proposed that students who were taught with nonsupporting data after forming the generalization would score significantly higher than students taught with nonsupporting data before and after forming the generalization on an item that required the students to recognize the generalization (i.e., qualify the generalization). The data did not support this hypothesis.

The adjusted means for the group who received nonsupporting data after the generalization was .48, while the adjusted means for the group who received nonsupporting data before and after the generalization was .49.

Limitations

Data were collected on the last day of school. The lesson and test were administered in a large group situation.

Recommendations for Further Study

Although this research yielded inconclusive results, one other study regarding the use of nonsupporting data to attain acquisition and better recall of a social studies generalization has concluded that students who were presented with nonsupporting data, either prior to generalization formation or prior and post generalization formation did qualify the generalization more often than those students who were taught without nonsupporting data. Results of analysis of variance regarding the ability of students to recognize the generalization indicated that the means for the two groups that were taught with nonsupporting data were significantly larger than the mean for the group taught without nonsupporting data (Hagen, McKinney & Benes, 1991).

Future study regarding nonsupporting data research can

be focused in many areas as the information is as yet untapped. Recommendations for further study include: (a) the proportion of nonsupporting to supporting data. Hagen, McKinney and Benes (1991) examined a proportion of 70% supporting data to 30% nonsupporting data, while the current study examined a ratio of 50% supporting data to 50% nonsupporting data. Further investigation could focus on varying the amount of nonsupporting data within the treatment groups to discover an optimal amount of nonsupporting to supporting data. (b) the impact of age/grade level on acquisition of the generalization using nonsupporting data. Current research has only tested students in the middle schools. (c) do students perform better when the information is presented in a chart or in paragraph format. Hagen, McKinney and Benes (1991) studied the chart format while students in the current study were presented with information in paragraph form. (d) is there a difference in formation using deductive as opposed to inductive approach. Both existing studies utilized a modified inductive approach. (e) how well do students retain the generalization after time has elapsed. There are no studies regarding long term retention of the generalization.

REFERENCES

Anderson, R. C. (1973). Learning principles from text. Journal of Educational Psychology, 64(1), 26-30.

Armstrong, N. (1970). The effect of two instructional inquiry strategies on critical thinking and achievement in eighth grade social studies (Unpublished doctoral dissertation, University of Indiana, 1970). Dissertation Abstracts International, 31/04A, 1611.

Benes, C. (1991, April). A review of the literature on social studies generalization research. Paper presented at the meeting of the Rocky Mountain/Great Plains Regional Social Studies Conference, Kansas City, KA.

Boedecker, L. C. (1971). Inquiry teaching strategies: Their effects on dogmatism, critical thinking and learning in a seventh grade sociology course (Unpublished doctoral dissertation, University of Minnesota, 1971). Dissertation Abstracts International, 32/11A, 6283.

Brownell, W. A., & Hendrickson, G. (1950). How children learn information, concepts, and generalizations. In N. B. Henry (Ed.), The forty-ninth yearbook of the national society for the study of education: Part I. (pp. 92-128). Chicago: University of Chicago Press.

Crabtree, C. (1966). Inquiry approaches to learning concepts and generalizations in social studies. Social Education, 30, 407-414.

David, D. (1968). Conditions that foster growth in children's ability to generalize in elementary school social studies (Unpublished doctoral dissertation, University of Indiana, 1968). Dissertation Abstracts International, 29, 1805A.

Hagen, J., McKinney, C. W., & Benes, C. (1991, January). Effects of nonsupporting data on the acquisition of of social studies generalization. Paper presented at the meeting of the Southwest Educational Research Association, San Antonio, TX.

Hanna, P. R. (1957). Generalizations and universal values:Their implications for the social-studies program. In N. B. Henry (Ed.), The fifty-sixth yearbook of the national society for the study of education: Part II. (pp. 27-46). Chicago: University of Chicago Press.

Hunnicutt, R. C. (1981). An experimental comparison of three methods of using examples and nonexamples to teach social studies concepts (Unpublished doctoral dissertation, University of Georgia, 1981). Dissertation Abstracts International, 43, 1919A.

Hunnicutt, R.C., & Larkins, A. G. (1985). An experimental comparison of three methods of using examples and nonexamples to teach social studies concepts. Journal of Instructional Psychology, 12(3), 144-151.

Jacka, B. T., & Hermann, G. D. (1977). Egrule vs. ruleg teaching: A replication. Journal of Experimental Education, 46(1), 15-19.

Klausmeier, H. J., & Feldman, K. V. (1975). Effects of a definition and a varying number of examples and nonexamples on concept attainment. Journal of Educational Psychology, 67(2), 174-178.

Lahnston, A. T. (1972). A comparison of directed discovery and demonstration strategies for teaching geographic concepts and generalizations (Unpublished doctoral dissertation, University of Washington, 1972). Dissertation Abstracts International, 33/08A, 4064.

Long, V. O. (1979). Inductive vs. deductive teaching strategies: an action research study. Journal of Instructional Psychology, 6(2), 2-4.

Martin, J., Harrod, W., & Siehl, C. (1980). The development of knowledge structures (Research Paper No. 557). Stanford: Stanford University, Graduate School of Business.

McKinney, C. W. (1991, April). Issues related to teaching generalizations. Paper presented at the meeting of the Rocky Mountain Great Plains Regional Social Studies Conference, Kansas City, KA.

McNaughton, A. H. (1969). A generalization is a generalization. Teachers College Record, 70(8), 715-727.

Murray, C. K. (1978). Developing concepts and generalizations in the secondary social studies programs. Clearing House, 52, 80-84.

Naylor, D. T., & Diem, R. A. (1987). Elementary and middle school social studies. New York: Random House.

Smoke, K. (1933). Negative instances in concept learning. Journal of Experimental Psychology, 16, 583-588.

Taba, H. (1967). Teacher's handbook for elementary social studies (Intro. ed). Philippines: Addison-Wesley.

Taylor, W. L. (1941). Generalizations in the social studies. The Social Studies, 32(4), 147-151.

Tennyson, R. (1973). Effect of negative instances in concept acquisition using a verbal-learning task. Journal of Educational Psychology, 64(2), 247-260.

Tennyson, R. D., & Park, O. (1980). The teaching of concepts: A review of instructional design research literature. Review of Educational Research, 50(1), 55-70.

Wallace, R. C. (1965/66). The ability of certain students to understand and apply selected concepts and generalizations in geography (Report No. BR-5-8426, CRP-S-427). Baltimore, MD: Boston College. (ERIC document Reproduction Service No. ED 010091)

Wehlage, G., & Anderson, E. U. (1972). Social studies curriculum in perspective. New Jersey: Prentice-Hall.

Williams, P. B., & Carnine, D. W. (1981). Relationship between range of examples and nonexamples and of instructions and attention in concept attainment. Journal of Educational Research, 74(3), 144-147.

Womack, J. (1968). Discovering the Structure of Social Studies. California: Benziger Brothers.

APPENDIXES

APPENDIX A

INDUCTIVE SUPPORTING DATA ONLY

LESSON 1

Today you will be learning about the way some cultures influence other cultures.

Before you begin the lesson we need to review a word that you will need to know.

Culture is defined as the ways a group of people live which are passed down from generation to generation.

For example, the kinds of clothing you wear, the house you live in, the food you eat and the language you speak are all part of your culture. In another part of the world, a boy or girl your age might eat different kinds of foods, speak another language, or wear a different style of clothing. This is all a part of his or her culture.

In the lines below, write in your own words a definition of culture.

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>The ways a group of people live which are passed down from generation to generation.</u>

If so, very good! If not, please go back to the first page and read the definition of <u>culture</u> again so that you understand what it means.

GO TO THE NEXT PAGE.

Read the following sentences carefully. You will be asked to answer some questions after you have read the paragraphs.

1. European settlers and American Indians were very different when they first came in contact with one another. They differed in the kinds of clothing each group wore, the type of housing in which each group lived, the type of weapons that they used to fight wars and hunt for food, and even in the types of food they ate. After living in close contact for more than 400 years, both groups became more similar. Today peoples of European and Indian ancestry live in the same kinds of homes, eat the same foods, and dress in the same clothes.

What happened to the peoples of European and Indian ancestry after they had been living in close contact for more than 400 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>After living in close contact for more than 400 years, both peoples became more similar - they now live in the same kinds of homes, eat the same foods, and dress in the same clothes.</u>

If you did, you were correct. Very good!

If you did not, go back to the paragraph and see if you can discover what happened to the European settlers and American Indians after they had been living in close contact for more than 400 years.

GO TO THE NEXT PAGE.

2. Today English is the official language of Kenya, a country located on the eastern coast of Africa. English has not always been the official language of Kenya. Prior to 1900 most people who lived in Kenya spoke one of many different tribal languages. From 1920 to 1963 Kenya was ruled by Great Britain. As you already know the British speak English. As a result of the almost 100 years of British contact with the Kenyans, many Kenyans learned to speak English. They still continue to speak their tribal language, too.

What happened to the Kenyans after almost 100 years of being in close contact with the British?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>After almost 100 years of British contact with the Kenyans, many Kenyans learned to speak English. Today English is the official language of Kenya.</u>

If you did, you were right.

If you did not, go back to the paragraph and see if you can find out what happened to the Kenyans after almost 100 years of British contact.

GO TO THE NEXT PAGE.

3. If you were to visit Zimbabwe, a country located in Africa, you see hospitals, doctors, and nurses similar to the ones that you see in Oklahoma. Zimbabwe has not always had modern medicine. Until about 100 years ago the people of modern day Zimbabwe used magic and herbs as medicine. When the British moved into Zimbabwe, they brought modern doctors and built hospitals.

What happened to the people of Zimbabwe after the English had lived there for about 100 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>The people of Zimbabwe now have modern hospitals, doctors, and nurses instead of using herbs and magic.</u>

If you did - great! You were correct.

If you did not, go back to the paragraph and see if you can discover what happened to the people of Zimbabwe after the English had lived there for about 100 years.

GO TO THE NEXT PAGE.

4. Prior to the British moving into Kenya, most of the people of Kenya lived in tribal groups. The British settled towns, villages, and cities. Today, about 100 years later, most Kenyans have deserted their tribal group living to move to and live in towns and villages.

What happened to the people of Kenya after the British had settled there for about 100 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

Most of the Kenyans moved from tribal living into towns and villages after the British had settled there for about 100 years.

If you did, very good! You were correct.

If you did not, go back to the paragraph and see if you can discover what happened to the people of Kenya after the British had settled there for about 100 years.

GO TO THE NEXT PAGE.

What do these four paragraphs tell you about how cultures influence each other? Write one sentence that describes what happens when one culture comes in close contact with another.

_____

_____

GO TO THE NEXT PAGE.

Read the following paragraphs carefully. When you have finished you will be asked to answer some more questions.

1. In Chile, South America, farmers used to cultivate the soil with hoes and hand tools. When the Europeans came during World War II many of them stayed to settle there. They brought with them increased technology. Now the farmers use tractors and modern machinery to grow their crops.

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered yes, you were correct. Because of European technology, the people of Chile now use tractors and modern machinery to grow their crops.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

2. In the south of Texas, the Mexican and American cultures have been living closely together for over 100 years. Now in that part of the country, most people speak both Spanish and English. Much of the food is a combination of both cultures, with a special name: "Tex-Mex".

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered yes, you were correct. Because the Mexican and American peoples have been living closely together for over 100 years, they have become very much alike.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

3. It used to be very uncommon in the Soviet Union for citizens from the U.S.A. to visit. Teen-agers there did not listen to American rock music, eat fast food or wear blue jeans. Now the U.S.S.R. and the U.S. of A. have come into closer contact, and young people there wear blue jeans, go to rock concerts, and eat at McDonald's.

Is this paragraph am example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered yes, you were right. The young people of the Soviet Union wear blue jeans, go to rock concerts, and eat at McDonald's just like the young people here.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

4. At one time American Indians did not have any kind of written language at all. They passed down their tribal history by word of mouth only. When the white man came to settle near the Indians, the Indian tribes began to develop their own written language as well.

Is this paragraph an example of how one culture influence another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered yes, you were correct. After the white men came to settle near the Indians, the Indian tribes began to develop their own written language as well.

DO NOT GO BACK AND CHANGE WHAT YOU HAVE WRITTEN.

GO TO THE NEXT PAGE.

Do these four paragraphs tell you something about how one culture influences another? Can you write again a sentence that describes what happens when one culture comes in close contact with another.

_____

_____

Is this sentence the same as the first sentence you write?

yes no

If it is different, how is it different? Write your answer below.

_____

_____

You have now completed this lesson. Raise your hand and your teacher will give you a test. We want to see what you have learned today. Thanks for helping us.

APPENDIX B

INDUCTIVE NONSUPPORTING

POST GENERALIZATION

LESSON 2

Today you will be learning about the way some cultures influence other cultures.

Before you begin the lesson we need to review a word that you will need to know.

Culture is defined as the ways a group of people live which are passed down from generation to generation.

For example, the kinds of clothing you wear, the house you live in, the food you eat and the language you speak are all part of your culture. In another part of the world, a boy or girl your age might eat different kinds of foods, speak another language, or wear a different style of clothing. This is all a part of his or her culture.

In the lines below, write in your own words a definition of culture.

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

The ways a group of people live which are passed down from generation to generation.

If so, very good! If not, please go back to the first page and read the definition of culture again so that you understand what it means.

GO TO THE NEXT PAGE.

Read the following sentences carefully. You will be asked to answer some questions after you have read the paragraphs.

1. European settlers and American Indians were very different when they first came in contact with one another. They differed in the kinds of clothing each group wore, the type of housing in which each group lived, the type of weapons that they used to fight wars and hunt for food, and even in the types of food they ate. After living in close contact for more than 400 years, both groups became more similar. Today peoples of European and Indian ancestry live in the same kinds of homes, eat the same foods, and dress in the same clothes.

What happened to the peoples of European and Indian ancestry after they had been living in close contact for more than 400 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>After living in close contact for more than 400 years, both peoples became more similar - they now live in the same kinds of homes, eat the same foods, and dress in the same clothes.</u>

If you did, you were correct. Very good!

If you did not, go back to the paragraph and see if you can discover what happened to the European settlers and American Indians after they had been living in close contact for more than 400 years.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

2. Today English is the official language of Kenya, a country located on the eastern coast of Africa. English has not always been the official language of Kenya. Prior to 1900 most people who lived in Kenya spoke one of many different tribal languages. From 1920 to 1963 Kenya was ruled by Great Britain. As you already know the British speak English. As a result of the almost 100 years of British contact with the Kenyans, many Kenyans learned to speak English. They still continue to speak their tribal language, too.

What happened to the Kenyans after almost 100 years of being in close contact with the British?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

After almost 100 years of British contact with the Kenyans, many Kenyans learned to speak English. Today English is the official language of Kenya.

If you did, you were right.

If you did not, go back to the paragraph and see if you can find out what happened to the Kenyans after almost 100 years of British contact.

GO TO THE NEXT PAGE.

3. If you were to visit Zimbabwe, a country located in Africa, you see hospitals, doctors, and nurses similar to the ones that you see in Oklahoma. Zimbabwe has not always had modern medicine. Until about 100 years ago the people of modern day Zimbabwe used magic and herbs as medicine. When the British moved into Zimbabwe, they brought modern doctors and built hospitals.

What happened to the people of Zimbabwe after the English had lived there for about 100 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>The people of Zimbabwe now have modern hospitals, doctors, and nurses instead of using herbs and magic.</u>

If you did - great! You were correct.

If you did not, go back to the paragraph and see if you can discover what happened to the people of Zimbabwe after the English had lived there for about 100 years.

GO TO THE NEXT PAGE.

4. Prior to the British moving into Kenya, most of the people of Kenya lived in tribal groups. The British settled towns, villages, and cities. Today, about 100 years later, most Kenyans have deserted their tribal group living to move to and live in towns and villages.

What happened to the people of Kenya after the British had settled there for about 100 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

Most of the Kenyans moved from tribal living into towns and villages after the British had settled there for about 100 years.

If you did, very good! You were correct.

If you did not, go back to the paragraph and see if you can discover what happened to the people of Kenya after the British had settled there for about 100 years.

GO TO THE NEXT PAGE.

What do these four paragraphs tell you about how cultures influence each other? Write one sentence that describes what happens when one culture comes in contact with another.

_____

_____

GO TO THE NEXT PAGE.

Read the following paragraphs carefully. When you have finished you will be asked to answer some more questions.

1. In Chile, South America, farmers used to cultivate the soil with hoes and hand tools. When the Europeans came during World War II many of them stayed to settle there. They brought with them increased technology. Now the farmers use tractors and modern machinery to grow their crops.

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered yes, you were correct. Because of European technology, the people of Chile now use tractors and modern machinery to grow their crops.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

2. In South Africa, white people have been living in close proximity to the black culture for 400 years. Yet the white man has segregated the black culture. The two cultures have remained very separate.

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered no, you were correct. The white people and the black culture in South Africa have remained very separate.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

3. In the South of Texas, the Mexican and American cultures have been living closely together for over 100 years. Now in that part of the country, most people speak both Spanish and English. Much of the food is a combination of both cultures, with a special name: "Tex-Mex".

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered yes, you were right. The Mexican and American cultures in the south of Texas have become very similar.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

4. Most of Canada was settled by the British, except for Quebec, which was settled by the French. The French-Canadians have refused to give up their language and culture to become like the British-Canadians. Today in Canada you will find a great distinction between what is French-Canadian and what is British-Canadian. Neither culture wants to change to be like the other.

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered no, you were correct. The French-Canadian and the British-Canadian cultures have remained very separate.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

Do these four paragraphs tell you something about how one culture influences another? Can you write again a sentence that describes what happens when one culture comes in close contact with another.

_____

_____

Is this sentence the same as the first sentence you wrote?

yes no

If it is different, how is it different? Write your answer below.

_____

_____

You have now completed this lesson. Raise your hand and your teacher will give you a test. We want to see what you have learned today. Thanks for helping us.

APPENDIX C

INDUCTIVE N.S. PRE AND POST GENERALIZATION LESSON 3

Today you will be learning about the way some cultures influence other cultures.

Before you begin the lesson we need to review a word that you will need to know.

Culture is defined as the ways a group of people live which are passed down from generation to generation.

For example, the kinds of clothing you wear, the house you live in, the food you eat and the language you speak are all part of your culture. In another part of the world, a boy or girl your age might eat different kinds of foods, speak another language, or wear a different style of clothing. This is all a part of his or her culture.

In the lines below, write in your own words a definition of culture.

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>The ways a group of people live which are passed down from generation to generation.</u>

If so, very good! If not, please go back to the first page and read the definition of <u>culture</u> again so that you understand what it means.

GO TO THE NEXT PAGE.

Read the following sentences carefully. You will be asked to answer some questions after you have read the paragraphs.

1. European settlers and American Indians were very different when they first came in contact with one another. They differed in the kinds of clothing each group wore, the type of housing in which each group lived, the type of weapons that they used to fight wars and hunt for food, and even in the types of food they ate. After living in close contact for more than 400 years, both groups became more similar. Today peoples of European and Indian ancestry live in the same kinds of homes, eat the same foods, and dress in the same clothes.

What happened to the peoples of European and Indian ancestry after they had been living in close contact for more than 400 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>After living in close contact for more than 400 years, both peoples became more similar - they now live in the same kinds of homes, eat the same foods, and dress in the same clothes.</u>

If you did, you were correct. Very good!

If you did not, go back to the paragraph and see if you can discover what happened to the European settlers and American Indians after they had been living in close contact for more than 400 years.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

2. The Aborigines of Australia have been living closely together with modern-day Australian for about 150 years. Yet many Aborigines have not abandoned traditional ways of living. They still live as they have done for thousands of years.

How do the Aborigines live after being in close contact with the white-Australians for about 150 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>After living in close contact with the white-Australians for about 150 years, the Aborigines still live as they have always done for thousands of years.</u>

If you did, you were correct. Very good!

If you did not, go back to the paragraph and see if you can discover how the Aborigines live after being in close contact with the white-Australians for about 140 years.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

3. If you were to visit Zimbabwe, a country located in Africa, you see hospitals, doctors, and nurses similar to the ones that you see in Oklahoma. Zimbabwe has not always had modern medicine. Until about 100 years ago the people of modern day Zimbabwe used magic and herbs as medicine. When the British moved into Zimbabwe, they brought modern doctors and built hospitals.

What happened to the people of Zimbabwe after the English had lived there for about 100 years?

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>The people of Zimbabwe now have modern hospitals, doctors, and nurses instead of using herbs and magic.</u>

If you did - great! You were correct.

If you did not, go back to the paragraph and see if you can discover what happened to the people of Zimbabwe after the English had lived there for about 100 years.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

4. For about 30 years Americans have been encouraged to live in the Middle East to work. However, they must live in compounds which segregate them. This is because the Moslem people want to preserve their religious and social practices. They do not want to become like Americans.

How have the Moslem people of Saudi Arabia kept their culture separate from the Americans?

_____

_____

_____

GO TO THE NEXT PAGE.

Did you write something like this?

<u>The American people of Saudi Arabia must live in compounds because the Moslem people want to preserve their religious and social practices.</u>

If you did, great! You were right.

If you did not, go back to the paragraph and see if you can discover how the Moslem people of Saudi Arabia have kept their culture separate from the Americans.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

What do these four paragraphs tell you about how cultures influence each other? Write one sentence that describes what happens when one culture comes in close contact with another.

_____

_____

GO TO THE NEXT PAGE.

Read the following paragraphs carefully. When you have finished you will be asked to answer some more questions.

1. In Chile, South America, farmers used to cultivate the soil with hoes and hand tools. When the Europeans came during World War II many of them stayed to settle there. They brought with them increased technology. Now the farmers use tractors and modern machinery to grow their crops.

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered yes, you were correct. Because of European technology, the people of Chile now use tractors and modern machinery to grow their crops.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

2. In South Africa, white people have been living in close proximity to the black culture for 400 years. Yet the white man had segregated the black culture. The two cultures have remained very separate.

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered no, you were correct. The white people and the black culture in South Africa have remained very separate.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

3. In the South of Texas, the Mexican and American cultures have been living closely together for over 100 years. Now in that part of the country, most people speak both Spanish and English. Much of the food is a combination of both cultures, with a special name: "Tex-Mex".

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered yes, you were right. The Mexican and American cultures in the south of Texas have become very similar.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

4. Most of Canada was settled by the British, except for Quebec, which was settled by the French. The French-Canadians have refused to give up their language and culture to become like the British-Canadians. Today in Canada you will find a great distinction between what is French-Canadian and what is British-Canadian. Neither culture wants to change to be like the other.

Is this paragraph an example of how one culture influences another?

yes no

Why or why not?_____

_____

GO TO THE NEXT PAGE.

If you answered no, you were correct. The French-Canadian and the British-Canadian cultures have remained very separate.

DO NOT GO BACK AND CHANGE YOUR ANSWER.

GO TO THE NEXT PAGE.

Do these four paragraphs tell you something about how one culture influences another? Can you write again a sentence that describes what happens when one culture comes in close contact with another.

_____

_____

Is this sentence the same as the first sentence you wrote?

yes no

If it is different, how is it different? Write your answer below.

_____

_____

You have now completed this lesson. Raise your hand and your teacher will give you a test. We want to see what you have learned today. Thanks for helping us.

APPENDIX D

TEST

Read the following sentences. Circle YES if the sentences agree with what you learned today. Circle NO if the sentences do not agree with what you learned today. Circle UNSURE if you do not know whether the sentences describe what you learned.

1. The people of Borhur do not wear shoes. They continually suffer from sore feet. Shoe-wearing visitors visit Borhur and explain that proper-fitting shoes will prevent sore feet. The people of Borhur decide to wear shoes.
   These sentences describe what I learned today about cultures.
   YES NO UNSURE

2. The people of Mozartville like rock and roll music. People from distant places bring other kinds of music to Mozartville. People from Mozartville continue to listen to rock and roll, however, they also listen to music brought in by visitors.
   These sentences describe what I learned today about cultures.
   YES NO UNSURE

3. Ultima is a poor country. There is little to eat, and many people are continually sick. On the other hand, the people of Xanadu are well off. Xanaduans show Ultimans how to increase their agricultural output and how to make medicines. The Ultimans quickly learn these things. These sentences describe what I learned today about cultures.

YES NO UNSURE

Read the following sentences. Based on what you read in your lessons, choose the best explanation by circling the letter of the best answer.

4. At one time the natives of Bahia used to crush their coffee beans between rocks and sprinkle them over their breakfast food. One day a group of foreigners arrived. They used mechanical coffee bean grinders and poured hot water over the ground-up beans to make a tasty beverage. At first the natives clung to their old ways, but gradually they began to follow the foreigners' example. After 75 years, it became common practice for the natives to use mechanical coffee bean grinders to make their own coffee drink.

Which of the following best explains what happened?

A. Most of the time when two cultures come into contact over a long period of time, they become more similar.
B. Since the natives of Bahia liked coffee so much, they most likely would have figured out how to make coffee grinders without any help from the foreigners.
C. Any time two cultures have contact, they become more similar.
D. Cultures rarely become more similar.

5. Almost every town in the United States had a restaurant that serves pizza. Pizza was not first made in the United States. It was made in Italy before it became popular in the United States.

Which of the following best explains the above paragraph?

A. There is no explanation concerning how pizza became a popular food in the United States.

B. Someone in the United States accidentally made a pizza without knowing what he had done.

C. Somehow people from the United States and Italy came into contact long enough for the people of the United States to learn to like and make pizza.

D. Americans like pizza.

6. There is a group of people living near Lancaster, Pennsylvania called the Mennonites. Although the rest of Lancaster uses modern conveniences such as automobiles and electricity, the Mennonite people still drive horses and buggies and do not use electricity. They have lived this way for over 100 years.

Based on what you learned in the lesson, which of the following best explains what happened?

A. When two cultures love closely together, they always become more similar.

B. When two cultures live closely together, most of the time they become more similar.

C. It is very rare for two cultures who live closely together to become more similar.

D. Two cultures who live closely together will never become more similar.

7. People who live on the island of Zerte love to eat asparagus. Asparagus did not naturally grow on the island. It has only grown there for 200 years.

Based on what you have learned today, which of the following is the best explanation?

A. An asparagus plant probably washed ashore 200 years ago.

B. The people of Zerte probably had contact with a culture that grew asparagus.

C. The asparagus plant probably just started growing there for no reason.

D. There is no way to explain the presence of asparagus on the island.

After you have read each of the following paragraphs, you will be asked to predict or guess what will happen.

8. Sherba is a country with strong religious and cultural traditions. When a war broke out between two neighboring countries, many of the citizens of these two countries moved to Sherba to escape the war. After two weeks, the war was over, and these people returned to their countries.

   What do you predict will happen?

   A. The people of Sherba will not change very much as a result of the brief contact with the two cultures.

   B. The people of Sherba will become very similar to the two cultures.

      The two cultures will change to become more like the people of Sherba.

   C. The two cultures will change to become more like the people of Sherba.

   D. All three cultures will change to become more like the United States.

9. A group of people from Zerte vacation in Sherba for three days. The peoples of Zerte and Sherba speak different languages, dress differently, and eat different kinds of food.

   Which of the following is the best prediction of what will happen?

   A. The people of Zerte and Sherba will start speaking the same language but will continue to dress differently.

   B. The people of Zerte and Sherba will begin to dress similarly but will not speak the same language.

   C. The people of Sherba will become very similar to the people of Zerte.

   D. Most likely, neither group will change very much.

10. A group of people from Zerte vacation in Sherba. When they return home, they tell other Zertans about Sherba. Soon most of the people of Zerte vacation in Sherba. This continues for several hundred years.
Based on what you learned today, what do you predict will happen?
    A. Most likely, neither group will change very much.
    B. Most likely, both groups will become more and more similar as the years go by.
    C. The Zertans will most likely change more than the Sherbans.
    D. The Sherbans will most likely change more than the Zertans.

11. In the 1300s, groups of Westerners attempted to settle on the island of Ayala. The Westerners wanted to stop the natives of Ayala from the dreadful practice of headhunting. After about 50 years, the headhunters of Ayala rose up against the Westerners and killed them all. Which of the following do you predict will happen?
    A. The people of Ayala will most likely not change.
    B. The people of Ayala will stop headhunting.
    C. The people of Ayala will continue to headhunt, however, they will seek fewer heads.
    D. The Ayala people will quickly die off.

12. Long ago the women of Osiris thought it to be a sign of great beauty to have large tatoos on their arms. Because of volcanic eruptions on Osiris which killed most of the men, the people of Osiris had to move to the more populated island of Manet where women did not wear tatoos. The men of Manet did not find the tattoos attractive.

Which of the following do you predict will happen?

A. The men of Manet will change their minds concerning tatoos.

B. The women of Osiris will most likely stop tattooing their arms.

C. The women of Manet will start tattooing their arms.

D. The men of Manet will start tattooing their arms.

13. Chernoi is a tiny country with very strong religious traditions. Unexpectedly, the Pruskan army invades Chernoi. The Pruskans forbid the Chernoians to continue their religious traditions.

    Which of the following do you predict will happen?

    A. The Chernoians will probably resist changing their religious traditions.

    B. The Chernoians will discontinue their religious traditions.

    C. The Pruskans will adopt the Chernoians' religious traditions.

    D. The Pruskans will leave Chernoi.

14. Which of the following sentences best describes what you learned today?

    A. When two cultures come in contact with each other, they always become more alike.

    B. When two cultures come in contact with each other, they usually become more alike.

    C. When two cultures come in contact over a long period of time, they never become more alike.

    D. We cannot say anything about what happens when two cultures come in contact with each other.

VITA

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Candidate for the Degree of

Master of Science

Thesis: EFFECTS OF NONSUPPORTING DATA ON SIXTH GRADE STUDENTS' ABILITY TO FORM AND TO USE A SOCIAL STUDIES GENERALIZATION

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