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A study on teaching geographic location to high school students

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A STUDY ON TEACHING GEOGRAPHIC LOCATION
TO HIGH SCHOOL STUDENTS

MASTER'S PROJECT

Submitted to the Graduate Committee of the School of Education
University of Dayton, in Partial Fulfillment
of the Requirements for the Degree
Master of Science in Education

by

Nancy Ellen Christiansen

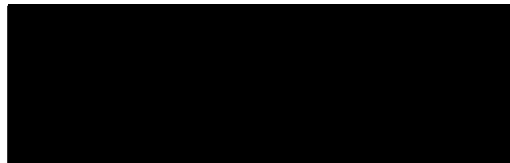
The School of Education

UNIVERSITY OF DAYTON

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Approved by:



Official Advisor

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DEDICATION

This project is dedicated to my mother Janette Christiansen and to my late father Edward Christiansen. Through their efforts I gained a sense of importance and interest in education and geography.

CHAPTER I

INTRODUCTION

Americans have the desire to be political and economic world leaders. Indeed, the realities of today's world demand that Americans be involved in foreign markets and be knowledgeable and sensitive to problems in other areas of the world. To play this world leadership role, all Americans must have a strong knowledge of geography.

Unfortunately, Americans have a reputation for ignorance of other places in the world (Bracey, 1986). Various studies have supported this assertion. One contributing factor to the geographic ignorance of Americans is that geography is the most poorly taught subject in all grades (VonEugeln, 1990). Educators have tended to be apathetic about geography concepts. Because the subject is viewed as having little significance, it has not been stressed in the school curriculum.

Americans need to think internationally. Traditionally, Americans have held very ethnocentric views about their place in the world. This self-interested attitude needs to change; knowledge of geography is essential in this age of global interdependence. A nation with worldwide interest and influence, such as the United States, should have citizens who know about the world. Teaching geography in schools can

provide such knowledge. If Americans truly want to be the best, to be leaders, then they need to pay more attention to geographic concepts.

This study takes a look at high school students and their knowledge of geographic location. How much geographic knowledge do they possess? Do they view geography as a significant field of study? Are there any factors that influence knowledge acquisition and student attitudes?

PROBLEM STATEMENT

The purpose of this study is threefold. The researcher wants to determine the effectiveness of teaching geographic concepts and skills to high school students; to compare gender (boys and girls) scores to determine if there is a difference in performance; and, to investigate and evaluate what factors influence student knowledge of geography.

SIGNIFICANCE OF THE STUDY

Based on a review of the literature, there is a need for more geographic knowledge in this country. Geographic knowledge will help Americans keep up with the changing world. A knowledge of geography will help the students know where things are happening and why they are occurring.

It is important to start stressing geography in schools. Not only does the importance need to be realized by educators, but methods need to be evaluated to determine which teaching approaches help students learn and retain the most information. Modern geography needs to be concerned not just with where

things are located but also with why they are located there (Thornton and Wenger, 1990). The reason this study focuses mainly on geographic location, is that "Location is to geography what arithmetic is to math. It's a fundamental tool" (Geographic Illiteracy Plagues Americans, 1985, p. 8).

RESEARCH HYPOTHESES

The experimental class, being taught geographic location using innovative teaching strategies, will have no higher posttest performance scores than the control classes, which will receive traditional instruction. Males and females in the experimental and control groups will have no significant difference in performance.

ASSUMPTIONS

This author assumes the pretest and posttest were content valid tests. It is also assumed that the method of teaching used in the study was successfully organized and presented. Finally, it is assumed that the study has significance given the current needs of society.

LIMITATIONS

Several factors may influence the internal and external validity of the study. For internal validity the following may affect the study: effects of history, that is, what previous experiences might affect the students' knowledge of the material covered; influence of the pretest; differential selection of participants, that is, the make up of the classes in the study may not be even in ability, knowledge or interest

of the students; and experimental mortality, that is, students involved may withdraw from the class during the experiment. Interaction effects of selection and treatment may affect external validity. The researcher was the teacher and that may have influenced the results. Since several different methods of teaching were used with the experimental group class, the impact must be considered as a whole without determining if some methods had more impact than others.

METHODOLOGY

The treatment for the study will be the method of teaching geographic location. The experimental group will receive the treatment from the first week of the quarter to the seventh week of the quarter. Two control group classes will receive traditional teaching approaches during the same time period. The treatment method will include several different approaches based on a review of the literature and the prior knowledge of the teacher. Two surveys, one concerning travel history and one concerning attitudes toward geography, will be included in the study. The survey data will be used to further understand the needs, backgrounds, and understandings of the students.

DEFINITION OF TERMS

Class travel average--The total number of states the members of a class have traveled to, divided by the number of students in the class.

Control group--The class which did not receive the treatment.

Experimental group--The class which received the treatment.

Factors--Items outside instruction that might affect the outcome of the test, such as gender, grade average and travel experience.

High travel--Students who have traveled more than the class average.

Low travel--Students who have traveled less than the class average.

Methods--Instructional tools used by the teacher, such as maps, class reports and review activities.

Treatment--Additional instruction and review of geography.

Twelve-point Grade System--One point is assigned to each possible grade (including plus and minus) from F to A+.

CHAPTER II

REVIEW OF RELATED LITERATURE

A lot has been written about geography over the years. Geographers have been stressing the need for, and importance of, geography to a country that has, for the most part, not shared their views. This is dangerous in light of the new global age. Americans need to have an intelligent perspective of the world in order to be competitive.

Beside the need for geographic knowledge, articles have been written about various methods that teachers can use to help students attain geographic knowledge. From encouraging more actual geography courses to the idea of incorporating the subject into all courses, schools have been challenged to take responsibility in teaching geography. The desired course of action would be to teach geography from elementary through the university level and have each year build on the geographic knowledge already learned in previous grade levels (Muessig, 1987). Articles have also been written on specific methods teachers can use in the classroom to teach geography.

The literature on geography has also included discussions and studies on factors that possibly effect the comprehension and scores of students in geography. The idea that factors outside the classroom can have a correlation with students

and their ability to learn and retain geography is something worth looking at for teachers.

Need for Teaching Geography

"Our students are more illiterate in geography than in anything else" (The Forgotten Subject, 1986, p. 67). This view was put forth by Bill Honig, California Superintendent of Public Instruction, and supported by various studies. In a North Carolina study, 74% of the students could not name one country, out of more than thirty, south of the Sahara and north of South Africa (Grosvenor, 1985). In another North Carolina study, Africa was put in North America, the Soviet Union adjoined Panama, and the "state" of Atlanta was placed around North Carolina (Cunningham, 1986). Also a study at an Indiana college showed that 95% of the students could not locate Vietnam on a map ("Geographic Illiteracy Plagues Americans," 1985). In a final study, 254 elementary education majors and 28 secondary social studies majors were asked to locate ten newsworthy countries on a map. The elementary group could not correctly identify even one country; the secondary group only had two labeled--Mexico and India.

The results of this last study are not surprising. Most teachers don't have a strong background in geography. Some elementary teachers are certified to teach geography without having taken a single university geography course (Muessig, 1987). What contributes to this is the fact that educators and the public don't understand the vital role of geography in the over-all education program. Whereas the majority of countries

outside the United States stress geography, most states in America either don't have, or have limited, requirements dealing with geography.

Geography in the United States tends to be confined to North America and even then many students don't know the geography of the United States (Cramer and Gritzner, 1990). This results in American ignorance of commercial geography and knowledge of other countries, such as the customs, characteristics, and ideals of those in other lands.

If the decline in knowledge of geography goes uncorrected, it could seriously impair a wide variety of endeavors from commerce to international relations ("Why Johnny Can't Read Either," 1985). Knowledge of geography can offer ways of making sense in an increasingly complex and interdependent world (Pabst, 1986). History has proven that ignorance of geography has, and is, causing political, economic and social problems (Grosvenor, 1985). Geographic knowledge can help Americans become broad-minded world citizens; sympathetic to the peoples of the world (Muessig, 1987).

Methods

Various methods have been generated over the years to provide a teacher with effective and creative ways to teach geographic location. Many of the methods are timely and/or relevant to students. Students can trace their geogenealogy, map their birthplaces, or follow the tour route of their favorite rock groups (Demko, 1986). Students' travel histories can be traced on maps, as well as students' ideal vacation or

living areas. Sports teams can be followed on road trips or national and world sporting events can be located on maps ("Why Johnny Can't Read Maps Either," 1985). All of the above can appeal to the interests of students. The more interest the students have, the greater the chance of learning taking place.

The more lessons focus on current national and world events, the more students might have interest in and see geography as important. Geographic location can be taught by identifying places in newspaper stories of natural catastrophes, of terrorist acts, and of disputes between countries, including wars (Demko, 1986).

Lessons can be converted into mysteries, which students must solve in order to determine geographic locations (Allen and Felton, 1987). Basic location can be introduced by filling in blank maps or by students creating their own maps. Sketched maps by students can be compared at the start and end of the lesson, and the students' freehand sketches can help the teacher discover the strengths and weaknesses of the class (Kon and Wise, 1990).

Pen pal letters written to students in other cities, states or countries can trigger interest in, and knowledge of, geography (Cunningham, 1990). Geography games of all kinds are especially good at reinforcing lessons (Carstensen, 1987). Specifically in social studies, which I teach, historical events and maps can be used for determining location (Heath, 1981).

Field trips can enhance observational work, which can

benefit students' learning primary geography. Also, hands on activities help stimulate student interest in geography and help reinforce learning (Muessig, 1987).

Slides are a good visual medium to teach geography for several reasons. First, slides can be customized for an audience. Second, because it's a live presentation, there is more interaction between teacher and students. Third, the pace is controlled and personalized and so more active learning takes place (Petersen, 1990). A final tool to teach geography is the computer. No subject is better suited to the many uses of computers than geography (Fitzpatrick, 1990).

The methods mentioned above are just some of the many available to teachers for use in teaching geography. Teachers need to make geography fun, interesting, and relevant to students. The variety of methods available to teachers should help accomplish this.

Factors that can Influence Learning

Research, suggests that various factors influence how well students learn and retain geographic knowledge. These factors may also contribute to the attitude students have about the importance of geography. Through a review of the literature some of these factors will be discussed.

One factor that can influence learning is gender. Research shows that males and females tend to learn geography by different methods. Males tend to learn maps by spatially encoding (learning the whole), and females learn by semantically encoding (learning the parts) (Phillippe and

Schwartz, 1991). Spatially encoding increases the memory for map locations, and since more males use this method than females, males tend to score better than females on tests (Phillippe and Schwartz, 1991).

The amount of exposure to geography is an important factor that can affect the learning process. Older students tend to score better on geography tests because they've lived longer, and thus have had more opportunities to travel, move to other areas, and be exposed to events in other areas (Phillippe and Schwartz, 1991). The number of states lived in after age seventeen and the amount of travel a student has done show a strong correlation with geographic knowledge (Phillippe and Schwartz, 1991). The more geography courses students take, the higher they tend to score on geographic location tests. The findings of an Indiana study showed a low overall ability in geography of freshmen students, most of whom hadn't had any geography courses in high school. The same Indiana study then showed that Arts and Science majors usually scored better in terms of geographic knowledge, and they had to take the most geography classes (Phillippe and Schwartz, 1991).

The interest students have in geography can be a factor in their success in learning the subject. People tend to do better in favored areas of study. The interest and knowledge of the teacher can also have an impact on student achievement. The more interest and knowledge the teacher possesses, the more beneficial to the ability of students to learn geography (VonEugeln, 1990).

A final factor which may influence students' learning of geography is the students' academic ability and their overall view of learning. Students with higher grade point averages tend to do well in all areas. Also, if students value education and strive to learn, they will tend to do well in school (Cunningham, 1986).

This is a sampling of factors that may influence how well students learn geography. The literature shows that the factors should be taken into consideration in evaluating the teaching of geography as well as the methods used in the classroom and the importance of the subject in general. The review of the literature reinforces the necessity of teaching geography.

This study attempts to evaluate different aspects of teaching geography. The literature points out the need for geographic knowledge and this study examines different methods and factors that could help accomplish the teaching of geography to high school students. The writer wanted to witness how literate students were in geography. Then the writer wanted to examine if any of the methods or other factors mentioned in the literature could help students learn.

CHAPTER III

PROCEDURE AND DATA ANALYSIS

Subjects

The study, involving a pretest and posttest, was conducted during the first quarter, 1988. The subjects were 52 Western Culture students, 28 boys and 24 girls. One class of 15 boys and 7 girls was selected as the experimental group. The rest of the students made up the control group. All statistical tests were conducted relative to data generated from the 1988 classes. The ages of the students were 15 through 17. The classes were heterogeneous ability grouped and were 99% white.

Another group of students was used for the purpose of gathering additional data during the first and third quarter, 1991-1992. This additional data was not statistically tested but will be discussed in this paper. The subjects in the first quarter were 50 American History students, 23 boys and 27 girls. The selected experimental class was made up of 12 boys and 14 girls. A second class, with the rest of the students, was the control group. The third quarter subjects were 35 American History students, 18 boys and 17 girls. The selected experimental class was made up of 9 boys and 10 girls. The rest of the students in a second class were the control group. The ages of the students were 15 through 18. The classes were

heterogeneous ability grouped and were 99% white.

Setting

The study was conducted in a suburban public high school in southwestern Ohio. Total school enrollment for the 1991-1992 school year was 824 students. The school district is 96% white. There is a wide range of incomes in the students' families, with a mix of blue collar and white collar workers.

Data Collection

The Western Culture students (experimental and control groups) were given a pretest the first week of class (see Appendix A and B). This consisted of filling in a blank map, from memory, of Western Europe. The test was developed and administered by the writer. Then an experimental group received treatment, which consisted of innovative methods of teaching and reviewing geographic locations. Specifically, the treatment included using wall maps and a globe; having students mark areas discussed in class on their own maps; assigning students countries and having them give reports on the location, capital, economy, and major events or people associated with the country. Experimental group students also received on-going review activities and games. The treatment for the experimental group lasted about seven weeks. The control classes covered the same material during the same time period, but without the benefit of the additional instruction and review on geographic location. Subsequently, a posttest (see Appendix A and B) was administered by the writer to both

the experimental and control classes. The pretests and the posttests were graded by the writer. For both the pretest and posttest, a class average and gender averages (boys and girls) were determined.

In order to examine additional information outside the study, the writer used four American History classes, two each quarter. No pretest was involved. Each quarter one class was the experimental class, receiving the same treatment as the experimental Western Culture class, and the other was the control class. After about seven weeks, a map test was given to each class (see Appendix C and D). The test was developed, administered, and graded by the writer. A class average, as well as, gender averages (boys and girls) were determined.

A travel survey (see Appendix E) was made up and administered by the writer to all four American History and the experimental Western Culture class. The purpose of the survey was for the writer to gain additional information on what might impact student map test scores. The survey was given the first week of the quarter. In each class, the states and countries each student in the class had traveled to were added up to get a class total. The total was then divided by the number of students in the class and a class average was computed. The writer then divided the posttests for each class into two groups, students' whose surveys indicated that they had traveled over the class average (high travel) and students' whose surveys indicated that they had traveled under the class average (low travel). Each of the two groups' posttests were

averaged to see which group (high travel or low travel) scored the highest average on the posttest.

The three Western Culture classes had a second survey (see Appendix F) administered by the writer after the posttest. The writer then added up the numbers that students recorded on the survey items in order to get a class total for A-E on each item. This procedure was carried out for all three classes and then the three classes totals were compared for each survey item. This survey was also used to provide the writer with additional information to examine.

The last data collected, for the writer's information, were the students' semester grade average for the class in which they participated in the study. The writer used the semester grades to compare students' class grade with their test scores. The semester grades were also averaged as a class, and by gender (boys and girls). The semester averages were then used for a comparison between the experimental and control classes posttest scores.

Analysis of Data

This investigation was a study of teaching geographic location and the factors which could have an effect on students' knowledge. The study focused on two hypotheses: (a) Does stressing geography more, by using a variety of teaching methods, result in higher test scores for students; and (b) Is there a difference between how boys and girls score on tests. Although not a specific part of this investigation, there were three other types of information the writer

collected in the study: (a) Do students with more travel experience score better than students with fewer experiences? (b) Do students who receive high grades in a class (American History and Western Culture) also score high on the geographic knowledge tests? And, (c) Do students in an experimental class rate geography more favorably than students in the control classes?

A statistical analysis was carried out, using a t-test, for the first research hypothesis. Specifically, will an experimental class receive higher posttest scores on a geographic knowledge test than control classes. Table 1 shows the mean scores, standard deviations, and t-value for the experimental and control group classes. The t value was .39. The tabled t value is 1.68. Therefore, there is not a significant difference between the two groups' scores.

The second research hypothesis investigated whether males and females would have different test scores. The statistical analysis was carried out using a t-test. Table 2 shows the mean scores, standard deviations, and t-value for the combined girls and combined boys pre and posttest scores. The t value was .05. The tabled t value is 1.68. Therefore, there is not a significant difference between the girls' and boys' test scores.

The rest of the data analyzed in this section was for the writer's curiosity and not part of the significant study. The writer has recorded the results for the purpose of interest and future study.

Table 1

MEAN SCORES AND STANDARD DEVIATIONS FOR WESTERN
CULTURE EXPERIMENTAL AND CONTROL CLASSES POSTTEST

	N	Mean of Scores	Standard Deviation	t value
E-group	22	42.00	11.98	.39
C-group	30	35.57	16.17	

ANALYSIS OF T-TEST

The t required for significance at the .05 level is 1.68. Since .39 is less than 1.68 there is no significant difference in the experimental class posttest score and the control class posttest score.

Table 2

MEAN SCORES AND STANDARD DEVIATIONS FOR
WESTERN CULTURE GIRLS AND BOYS POSTTEST

	N	Mean of Scores	Standard Deviation	t value
Girls	24	38.75	14.84	.05
Boys	28	37.89	14.96	

ANALYSIS OF T-TEST

The t required for significance at the .05 level is 1.68. Since .05 is less than 1.68 there is no significant difference in the girls posttest score and the boys posttest score.

In a continued comparison between girls and boys, the results showed no difference. In the American History classes, girls had a higher test average in three out of four of the classes. In scoring highest over semester average on the posttest, boys scored highest in three out of four classes. In the three Western Culture classes, boys scored higher on the posttest in two of the classes and girls scored highest on the posttest over their semester average in two classes. The biggest difference between scores of the pretest and posttest was achieved by girls in two of the classes.

The writer also computed and examined the American History and Western Culture classes letter grade average (based on a twelve point system) for the posttests. The writer wanted to investigate if the experimental class would have a higher class grade average on the posttest than the control class. In all three instances the experimental class (one Western Culture and two American History) scored a higher letter grade average on the posttest than the control class.

Another type of information the writer examined was the students' travel experience. A review of the literature suggests that the more students have traveled, the better they will score on a geographic map test. Five classes were given a travel survey (see Appendix E). The results of averaging students' posttest scores, grouped by whether the student had traveled more than the class average (high travel) or less than the class average (low travel), showed that the high travel group did score higher on the posttest. More sophisticated

analysis need to occur to determine if the differences are significant.

A second type of information, was an examination of semester grades and posttest scores. In three Western Culture classes all 14 students with an A semester average scored an A on the posttest. Out of 19 students with an F semester average 13 students scored an F on the posttest. Four of the remaining six passing students were from the experimental class, and they scored at least a B on the posttest. Overall the A-B students had a posttest average (based on a twelve point system) of 11.07 or an A, and the C,D,F students had a posttest average of 5.20 or a C. In four American History classes, 24 out of 26 A semester average students scored an A on the posttest. And of the four F semester average students all four failed the posttest. Overall the A-B students had a posttest average of 10.88 or an A, and the C,D,F students had a posttest average of 6.27 or C+.

The final data examined by the writer, was a survey on student attitudes toward geography (see Appendix F) that the Western Culture classes completed. Out of 20 items on the survey, the experimental class averaged higher marks for geography than the control classes on 17 of the items.

Discussion of Results

The first research hypothesis was that the experimental class would have no higher posttest average than the control classes. The experimental class did have a higher test

average, but the scores were not statistically significant at the .05 level (see Table 1).

The second research hypothesis was that males and females would have no difference in score. According to the results of the t-test, the scores of males and females were not statistically significant at the .05 level (see Table 2). In all other examinations the writer made between males and females, outside the t-test, there appears to be minimal difference between the scores of males and females.

One of the three other factors investigated by the writer concerned how geography would be scored on a survey by the experimental class and the control classes. The writer believed that because of their exposure in class, the experimental class would rate geography as more important on the survey. In reviewing the results of the survey, the experimental class scored geography more positively on 85% of the survey questions than the control classes. It appears that exposure to geography concepts may positively influence students' attitudes about the subject. Although no statistical analysis occurred, this more positive response warrants further study.

A second factor investigated by the writer dealt with the travel experience of students and whether that affected their posttest score. Again, no statistical analysis occurred, just informal data analysis by the writer. In all five participating classes, the students who had traveled above the class average (high travel) scored higher on the test than the

students who had traveled below the class average (low travel). The difference between the high travel group and the low travel group appeared to be minimal, and an examination of individual students resulted in the discovery that some students who had traveled a lot scored low on the posttest; the reverse was also true.

A final factor was an examination of the students' semester grade average and their posttest average. The writer believed that students with higher semester grades would score higher on the posttest. Based on the data collected this would appear to be true. There were individual cases where A-B students scored low and C,D,F students scored high, but overall, the students with higher semester averages were much more likely to score higher on the posttest than lower average students. Although not statistically analyzed in this study, these findings suggest that a students' intelligence may be a big influence on how much they learn about geography. Further study is needed on this factor.

Based on this study and the results of the t-tests, the first hypothesis, that the experimental class would have no higher posttest average than the control class, was accepted. The second hypothesis, that males and females would have no difference in posttest scores, was also accepted. The other three factors investigated by the writer, that the experimental class would rate geography higher on the survey, that students who have had more travel experience would score higher on the test, and that students with higher grades in the class would

score higher on the test, were supported to some degree by this limited study. All three require additional study.

Some findings from this study were a surprise to the writer. The insignificance of travel on test scores could be that overall, even the students who have traveled the most haven't traveled enough for that factor to have much influence. The lack of significant difference between the experimental group and control groups' scores could be the writer's fault in the selection and presentation of the methods used to teach geographic location to the experimental classes. Finally, whereas the writer assumed there would be little difference between the scores of males and females, the literature supported that males would score higher than females.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

As the whole existence of the United States becomes based on global involvement and knowledge, it becomes necessary for American citizens to be literate about geography. This nation cannot afford geographic illiteracy if it expects to remain a world leader. Unfortunately, at the same time schools, which have few courses in geography, are faced with money problems and are hesitant to implement new programs. Schools could, however, start stressing geography in existing courses.

This study examined the teaching of geography. Use of various teaching methods, including wall and desk maps, student reports on countries, and map review activities, and an examination of other factors that might influence students' learning of geography, such as gender, grade average, and travel experience, were investigated. No significance was found in posttest scores between the experimental class and the control classes. No significant difference was found between how males and females scored on the posttest. In results of other factors examined by the writer, but not statistically analyzed, there was minimal difference on posttest scores of students who had traveled substantially. The study also found

that students in the experimental class viewed geography more favorably than the control classes on a survey. Finally, the study showed that students who earned higher semester grades scored higher on the geography posttest.

Recommendations for Future Study

Geography needs to be stressed in schools, whether as a separate course or in existing courses. Different methods for teaching geography should be examined to determine their value. Aside from more innovative methods, other factors, such as gender, travel experience, grade point, and interest, must be taken into consideration as to their impact on the learning process. Further research is needed in the above areas.

Educators need to take the lead in preparing students for a global future. They need to determine and use methods that are successful for teaching geography skills, content, and concepts. The students' future depends on it.

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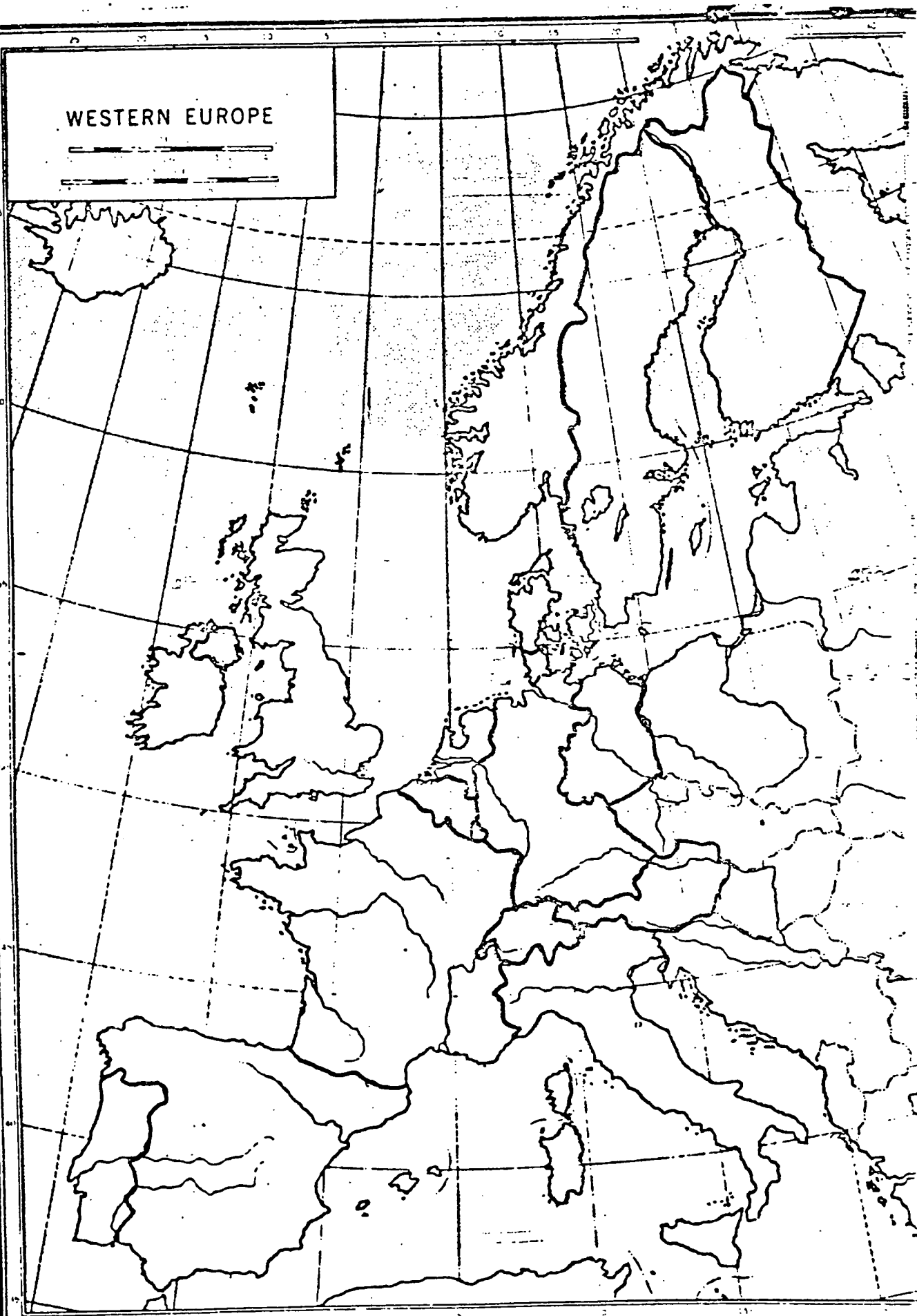
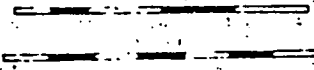
APPENDIX

APPENDIX A

WESTERN EUROPE

Countries	Capitals	Geographic Locations
Austria	Amsterdam	Adriatic Sea
Belgium	Berlin	Alp Mts.
Denmark	Berne	Appennino Mts.
East Germany	Bonn	Atlantic Ocean
Finland	Brussels	Balearic Islands
France	Copenhagen	Baltic Sea
Iceland	Dublin	Corsica Island
Ireland	Helsinki	Danube River
Italy	Lisbon	Ebro River
Luxembourg	London	Elbe River
Netherlands	Luxembourg	English Channel
Northern Ireland	Madrid	Loire River
Norway	Oslo	Malta
Portugal	Paris	Mediterranean Sea
Scotland	Rome	North Sea
Spain	Stockholm	Oder River
Sweden	Vienna	Po River
Switzerland		Pyrennes Mts.
United Kingdom		Rhine River
Wales		Sardinia
West Germany		Seine River
		Sicily
		Straits of Gibraltar
		Thames River

WESTERN EUROPE



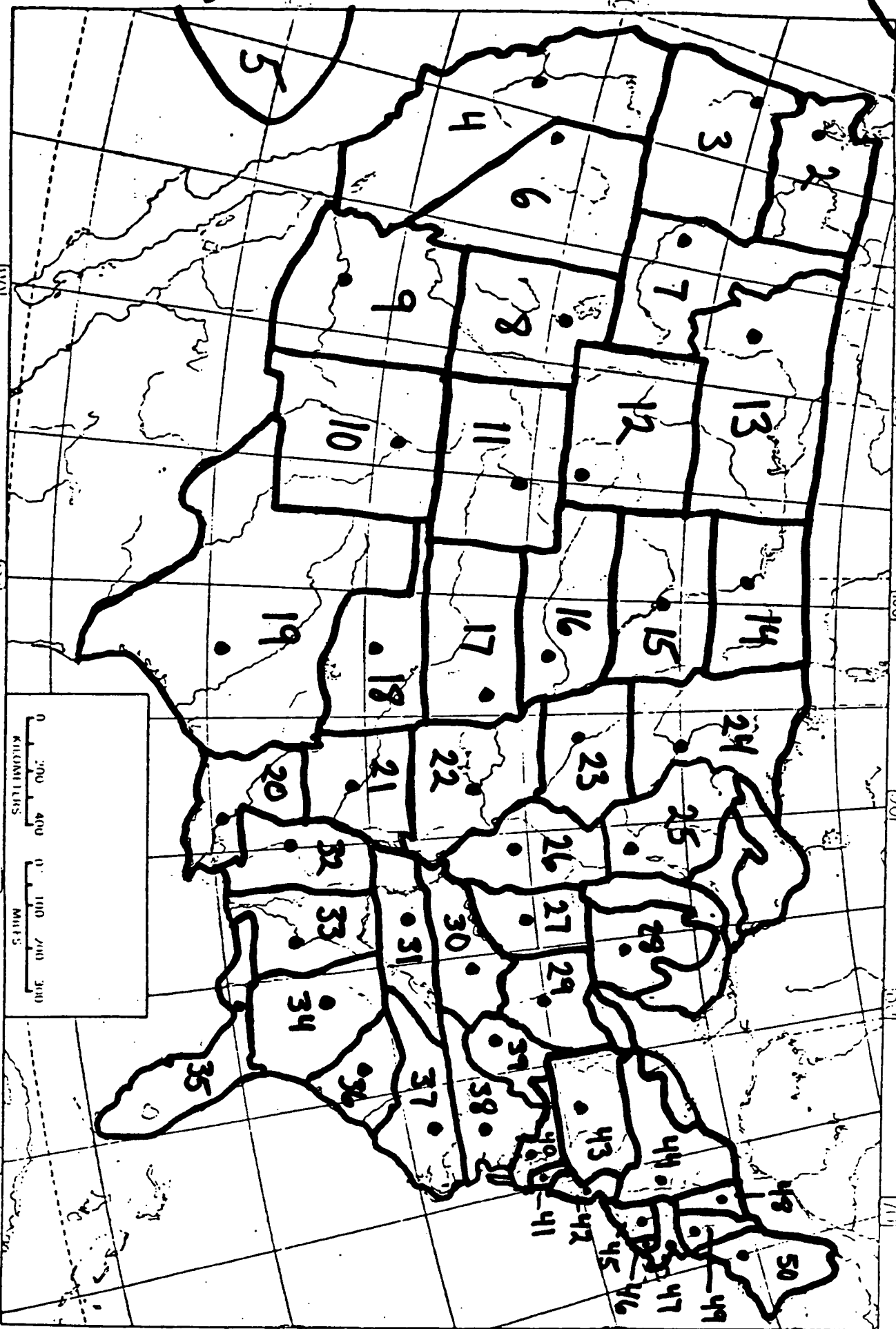
APPENDIX C

United States

Place the following geographic locations on the map.

50 states
50 capitals
Washington D.C.
Dayton, OH
5 Great Lakes
Mississippi River
Ohio River
Rio Grande River
Pacific Ocean
Atlantic Ocean
Gulf of Mexico
Canada
Mexico
Rocky Mts.
Appalachian Mts.

APPENDIX D



APPENDIX E

Put a check next to any state you have been in.

<input type="checkbox"/> Alabama	<input type="checkbox"/> Kentucky	<input type="checkbox"/> North Dakota
<input type="checkbox"/> Alaska	<input type="checkbox"/> Louisiana	<input type="checkbox"/> Ohio
<input type="checkbox"/> Arizona	<input type="checkbox"/> Maine	<input type="checkbox"/> Oklahoma
<input type="checkbox"/> Arkansas	<input type="checkbox"/> Maryland	<input type="checkbox"/> Oregon
<input type="checkbox"/> California	<input type="checkbox"/> Massachusetts	<input type="checkbox"/> Pennsylvania
<input type="checkbox"/> Colorado	<input type="checkbox"/> Michigan	<input type="checkbox"/> Rhode Island
<input type="checkbox"/> Connecticut	<input type="checkbox"/> Minnesota	<input type="checkbox"/> South Carolina
<input type="checkbox"/> Delaware	<input type="checkbox"/> Mississippi	<input type="checkbox"/> South Dakota
<input type="checkbox"/> Dist. of Columbia	<input type="checkbox"/> Missouri	<input type="checkbox"/> Tennessee
<input type="checkbox"/> Florida	<input type="checkbox"/> Montana	<input type="checkbox"/> Texas
<input type="checkbox"/> Georgia	<input type="checkbox"/> Nebraska	<input type="checkbox"/> Utah
<input type="checkbox"/> Hawaii	<input type="checkbox"/> Nevada	<input type="checkbox"/> Vermont
<input type="checkbox"/> Idaho	<input type="checkbox"/> New Hampshire	<input type="checkbox"/> Virginia
<input type="checkbox"/> Illinois	<input type="checkbox"/> New Jersey	<input type="checkbox"/> Washington
<input type="checkbox"/> Indiana	<input type="checkbox"/> New Mexico	<input type="checkbox"/> West Virginia
<input type="checkbox"/> Iowa	<input type="checkbox"/> New York	<input type="checkbox"/> Wisconsin
<input type="checkbox"/> Kansas	<input type="checkbox"/> North Carolina	<input type="checkbox"/> Wyoming

Put a check next to any country you have been in.

<input type="checkbox"/> Eastern Canada	<input type="checkbox"/> Western Canada	<input type="checkbox"/> Mexico
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Put a check next to any country outside the US beside those above that you have been in.

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APPENDIX F

Indicate on the line to the left of each statement how much you agree or disagree with it. Please mark every item. Use the following response categories:

- A - strongly agree
- B - agree
- C - uncertain
- D - disagree
- E - strongly disagree

- _____ 1. Geography is important to you.
- _____ 2. Geography is important to Politicians.
- _____ 3. Geography is important to Americans overall.
- _____ 4. Americans know as much geography as the rest of the world.
- _____ 5. Geography doesn't serve a purpose in daily life.
- _____ 6. Americans should know where things are happening around the world.
- _____ 7. Geography is hard to learn.
- _____ 8. Learning geography in school is a waste of time.
- _____ 9. Learning geography is fun.
- _____ 10. I know as much as anybody about geography.
- _____ 11. I don't need to know geography.
- _____ 12. All I need to know is the geography of the United States.
- _____ 13. Geography improves cultural understanding and helps reduce problems between nations.
- _____ 14. I didn't learn anything about Western Europe geography from the lessons.
- _____ 15. I enjoyed the geography lesson on Western Europe.
- _____ 16. The review activities helped me learn Western Europe geography.
- _____ 17. I will benefit from knowing Western Europe geography.
- _____ 18. I will remember Western Europe geography.
- _____ 19. I'm embarrassed if I don't know where something is.
- _____ 20. I respect/admire people who know geography.