Knowledge of Selected Map and Globe Skills as Related to Certain Characteristics of Elementary Student Teachers.

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KNOWLEDGE OF SELECTED MAP AND GLOBE SKILLS AS RELATED TO CERTAIN CHARACTERISTICS OF ELEMENTARY STUDENT TEACHERS.

THE LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COL., ED.D., 1978

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KNOWLEDGE OF SELECTED MAP AND GLOBE SKILLS
AS RELATED TO CERTAIN CHARACTERISTICS OF
ELEMENTARY STUDENT TEACHERS

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Education

in
The Department of Education

by
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ABSTRACT

The purpose of this study was to determine to what extent elementary student teachers at Louisiana State University, Baton Rouge, possessed knowledge of selected map and globe skills; and to determine whether significant relationships existed between knowledge of the skills and certain factors of education and personal traits.

The inquiry was based upon the following questions: (1) To what extent do elementary student teachers at LSU, Baton Rouge, know selected map and globe skills? (2) Is the knowledge of the elementary student teachers related significantly to the following factors: (a) number of graduates in student teachers' high school graduating class? (b) rank in high school graduating class? (c) number of social studies courses taken in high school? (d) geography courses taken in high school? (e) geography courses completed in college? (f) degrees of subjects' participation in teaching social studies? (g) subjects' perception of the status of social studies in the classroom? (h) subjects' grade point average? (i) subjects' composite score on the American College Test? (j) subjects' social studies percentile rank on the American College Test? and (k) subjects' LSU composite percentile rank on the American College Test?

The subjects selected were the entire population of elementary education majors at LSU, Baton Rouge, during the semesters they were engaged in student teaching. The study period consisted of the following semesters: Fall, 1976; Spring, 1977; Fall, 1977; and Spring,
1978. Ninety-one percent of the total population were included in the study.

The survey instruments consisted of two parts: (1) the Questionnaire of personal and educational data, and (2) the Survey of Map and Globe Skills (Grades K-4).

Returns were computer programmed. Data were analyzed using the summarized means of scores within sub-groups. Analysis of variance among personal and educational variables with respect to the 35 categories of test items was used to measure student teachers' knowledge of map and globe skills.

Correlation coefficients were computed to determine significant differences between scores on test items and the following: (a) LSU grade point average; (b) overall grade point average; (c) composite score on the American College Test; (d) social studies percentile rank on the American College Test; and (e) the LSU composite percentile rank on the American College Test.

An item analysis was also computed to determine the percent of subjects missing each item category.

The following conclusions were reached:

1. Variables not significantly related to student teachers' performance on the map and globe survey instrument at the .05 level of confidence included: (a) number of graduates in the subjects' high school graduating class; (b) rank in high school graduating class; (c) geography courses taken in high school; (d) number of college geography courses completed; and (e) degrees of subjects' participation in teaching social studies in student teaching.
2. Variables significantly related to student teachers' performance on the map and globe survey instrument at the .05 level of confidence included: (a) number of high school social studies courses taken; and (b) subjects' perception of the status of social studies in the classroom.

3. Correlation coefficients indicated significant differences at the .05 level of confidence between scores on test items and the following: (a) LSU grade point average; (b) overall grade point average; (c) composite score on the American College Test; (d) social studies percentile rank on the American College Test; and (e) the LSU composite percentile rank on the American College Test.

4. The data suggested that increased map and globe knowledge and skills resulted, in part, from taking high school social studies courses and student teaching in classrooms where the subjects perceived there was much emphasis on social studies.

5. A median score of 52.18 of a possible score of 80.00 was made by the 365 subjects.
Chapter 1

INTRODUCTION

Many social studies educators and social scientists have agreed as to the importance of effective utilization of maps and globes in the social studies curriculum for elementary children. Geographers Preston James and Jan Broek, expressed the need for more effective teaching of map and globe skills and their concern with the lack of knowledge of map and globe skills possessed by average Americans.

James (1971) reported that on the average Americans were illiterate in terms of map and globe skills and knowledge. Broek (1965) wrote that every child should learn the basics of map reading. Elaine Bosowski (1974) questioned the reasoning behind spending years studying only Language Arts and Mathematics in classrooms while the systematic study of maps was seldom taught. Lillian Wituchi (1962:196) also called for the teaching of map and globe skills. She wrote, "Instruction in the use and understanding of maps is recognized as one of the important jobs of the elementary teacher today."

Social studies educators, John Michaelis (1972) and John Jarolimek (1971) cited the need for the teaching of map and globe skills. They agreed that these skills should be taught through a planned program continuing throughout the educational curriculum.

Many social studies educators expressed the importance of maps and globes in the inquiry process. John Michaelis (1977) wrote of the importance of maps and globe skills within the context of the inquiry
process. He also noted that maps and globes should be utilized in
giving reports. O. L. Davis (1967) supported Michaelis when he wrote
that pupils in the middle elementary grades should have opportunities
to gather data from a number of sources in addition to textbooks.
Textbooks and other pertinent sources, he went on, including maps and
globes, require specific skills for their use.

Ruby Harris (1960) wrote that maps and globes have a symbolic
language of their own, and because of this, teachers should have a
definite and systematic instructional program in which the concepts of
natural and cultural features that are represented by symbols on maps
should be developed.

The assertion that elementary children were not learning map
and globe skills was supported by three studies. Ronald Carswell (1970)
found that fourth, fifth and sixth grade children had limited knowledge
of map-reading skills. Keith Ellis (1968) reported that knowledge of
even the most common topographical terms was unclear to the majority
of the fourth and sixth grade students he studied. Ellis went on to
say that teachers should make every effort to diagnose the problem
areas and spend the necessary time to clarify these terms. Donald
Schneider (1976:329) found that 70 percent of the sixth grade students
he tested had difficulty in answering questions in these eleven
categories of map- and globe-related skills:

1. Selecting appropriate synonyms for the terms globe,
   latitude, and longtitude;

2. Identifying lines of latitude and longitude;

3. Discriminating between world maps and globes for determining
   shape, size, distance, and direction;
4. Using a vertical scale to determine exact elevations;
5. Identifying the mouth and source of a river;
6. Differentiating between upstream and downstream and determining river flow using a contour map;
7. Identifying revolution and the earth's tilt as the cause of seasonal changes;
8. Computing time differences by using longitude;
9. Identifying and using a map legend to determine the meanings of symbols;
10. Comparing climates of selected cities on the basis of differences in latitude and elevation;
11. Forming conclusions and making predictions of geographic significance on the basis of distributional map data.

Geographer Preston James (1947) wrote that map skills, for the most part, were ineffectively taught or not taught at all. Carswell (1970) concluded that children's inability to read maps seemed to be related more to ineffective teaching than to map design.

Schneider (1976) found that many of the teachers he tested had the same problems with map- and globe-related skills as did the sixth grade students in his study. Maura Garvida (1977:105) found that most of the teachers in her study missed twenty-three to thirty-three of the eighty test items used in a survey of Louisiana teachers. She concluded: "The data from the study showed that the sample of Louisiana teachers who participated in this study had a low rate of correct responses."

Lloyd Stjernberg (1974:17) wrote:
It is apparent that inadequate map and globe skills instruction in the primary grades can be attributed to less than sufficient preparation of teachers rather than to the inability or lack of interest on the part of youngsters.

Geographer Preston James (1947:224) suggested that a possible reason for the ineffectual teaching of geography at that time may have been due to the attitude among certain educators that geography could be adequately taught by teachers who lack specific geographic training. J. Wolf Prow (1971) supported James' view when he wrote that only a minority of elementary school teachers have been exposed to geographic education.

STATEMENT OF THE PROBLEM

The problem of this investigation was to determine the extent to which elementary student teachers at Louisiana State University, Baton Rouge, know selected map and globe skills; and to determine if significant relationships exist between this knowledge and certain factors of education, student teaching experiences, and personal traits.

The major question explored was: How well do elementary student teachers at Louisiana State University, Baton Rouge, know selected map and globe skills?

The Question to be Investigated

Did the knowledge of selected map and globe skills on the part of elementary student teachers at Louisiana State University, Baton Rouge, relate significantly to the following factors:

a. The number of graduates in their high school graduating class,
b. Their rank in that high school graduating class,
c. The number of social studies courses taken in high school,
d. Whether or not high school geography courses were completed by the subjects,
e. The number of college geography courses completed,
f. Degrees of the subjects' participation in teaching social studies in the student teaching experience,
g. Student teachers' perception of the status of social studies in the classroom while student teaching,
h. Their grade point average at Louisiana State University,
i. Their composite score on the American College Test,
j. Their percentile rank in social studies on the American College Test, and
k. Their LSU composite percentile rank on the American College Test?

The Null Hypothesis

The null hypothesis was stated as follows:
The knowledge of selected map and globe skills of elementary student teachers at Louisiana State University, Baton Rouge, is not related significantly to the following factors:

a. The number of graduates in their high school graduating class,
b. Their rank in that high school graduating class,
c. The number of social studies courses taken in high school,
d. Whether or not high school geography courses were taken,
e. The number of college geography courses completed,
f. Degrees of the subjects' participation in teaching social studies in the student teaching experience,

  g. Student teachers' perception of the status of social studies in the classroom while student teaching,

  h. Their grade point average at Louisiana State University,

  i. Their composite score on the American College Test,

  j. Their percentile rank in social studies on the American College Test, and

  k. Their LSU composite percentile rank on the American College Test.

Delimitation of the Study

The study was limited to students who were elementary education majors at Louisiana State University, Baton Rouge, and who were involved in their student teaching experience. The majority of the population of the following classes was tested: Fall Semester, 1976; Spring Semester, 1977; Fall Semester, 1977; and Spring Semester, 1978.

Importance of the Study

The writer found no recorded research evidence concerning map and globe knowledge and skills of student teachers at Louisiana State University, Baton Rouge. It was believed that evidence of this nature would assist college instructors in the preparation of courses for elementary education majors at Louisiana State University, Baton Rouge. Further, the writer found no research showing how map and globe knowledge and skills were related to such factors as education, student teaching experience and personal traits. It was believed that data
derived from the study would provide information indicating the strengths and weaknesses of elementary education majors at Louisiana State University, Baton Rouge, during each of the semesters, Fall, 1976 through the Spring of 1978, with respect to selected map and globe skills. The investigator believed his study would provide useful data for curriculum planners and social scientists for the inclusion of map and globe skills in the elementary social studies methods and materials courses, geography courses, and/or other social science courses. Data was also seen as providing means of implementing more effective social studies and geography courses at the high school level. The data also could be used by faculties in other universities who wished to improve the methods, history, geography, and/or other social science courses and educational methods and materials courses required of elementary education majors in terms of improving their knowledge of map and globe skills. The effective use of the data resulting from this study could provide for cooperative efforts between the Departments of Education and Geography in organizing new courses or in reorganizing existing courses to include the knowledge needed for teaching certain map and globe skills to children.

Procedures Used in the Study

A personal and professional questionnaire and a survey instrument of selected map and globe skills were administered to the elementary education majors at Louisiana State University, Baton Rouge, during the last month of the semester these students were engaged in student teaching during the semesters of the Fall of 1976 through the Spring of 1978.
The Questionnaire

For the purpose of the study, a questionnaire of Personal and Professional Data was developed by the writer (Appendix B).

The Survey Instrument

A Survey Instrument of Map and Globe Skills developed initially by Lloyd Stjernberg (1974), and modified by Maura R. Garvida and Jesse Joe Parker (Garvida, 1977), was used to evaluate the elementary education majors' knowledge of map and globe skills.

Other procedures for the study were:

1. The study was limited to students enrolled in elementary education at Louisiana State University, Baton Rouge, College of Education, Fall Semester, 1976 through the Spring Semester of 1978.

2. The study period selected for the research was two academic years in duration, 1976 through 1978.

3. All students enrolled in elementary education as student teachers at Louisiana State University, Baton Rouge during the two year period were selected for the study.

4. The survey instrument and questionnaire were administered during:

   a. The first week in the last month of the Fall Semester of 1976,

   b. The first week in the last month of the Spring Semester of 1977,

   c. The first week in the last month of the Fall Semester of 1977, and

   d. The first week in the last month of the Spring Semester of 1978.
5. The writer developed test items designed for grades one through four from items initially designed by Lloyd Stjernberg (1974) and later modified by Maura R. Garvida and Jesse Joe Parker (Garvida, 1977).

6. The writer grouped the 80 test items into thirty-five categories for the survey instrument (Appendix B).

7. The researcher hand scored the survey instrument.

8. The scores for each of the 35 test categories were entered on the IBM sheet along with responses to the Questionnaires (Appendix C).

9. A computer program was developed jointly by the researcher and personnel at the Louisiana State University Experimental Statistics Department with regards to the following:

   a. Analysis of variance to determine which variables related significantly to the score on the survey instrument;

   b. The Standard Error of the difference between two uncorrelated means; "t" tests were obtained;

   c. Correlation coefficients were obtained to determine significant differences between scores on the test and the following: LSU grade point average, overall grade point average, composite score on the American College Test, social studies percentile rank on the American College Test, and the LSU percentile rank on the American College Test;

   d. An item analysis to determine the percent of the subjects missing each category.
Definition of Terms Used

Elementary Education Major. An elementary education major was defined in this study as a student at Louisiana State University, Baton Rouge who was enrolled in the curriculum designed for preparing teachers for grades one through eight.

Elementary Student Teacher. An elementary student teacher was defined in this study as a student enrolled at Louisiana State University, Baton Rouge who was engaged in the student teaching course designed for elementary education majors.


Map and Globe Knowledge and Skills. Map and globe knowledge and skills was considered evident in correct responses made on the validated Survey Instrument of Map and Globe Skills (Appendix C).

Questionnaire of Personal and Educational Data. References to this questionnaire pertain to the personal and educational variables in the study (Appendix B).

ORGANIZATION OF THE STUDY

Chapter 1 provides a background for the importance of the investigation to elementary social studies education. Chapter 2 presents a summary of the related literature. Procedures used in the study are described in Chapter 3. These procedures included: limiting the study to students enrolled in elementary education at Louisiana
State University, Baton Rouge, administration of the survey instrument and questionnaire, processes of recording data, and the application of statistics. Chapter 4 is a compilation of data derived from the study. The data is presented in tabular form and contains a narrative which coordinates the data. In the final portion of the study, Chapter 5, is a summary of the study which is followed by the conclusions, and pertinent recommendations thought consistent with the findings.
Chapter 2

REVIEW OF RELATED LITERATURE

A search of professional literature showed pertinent research studies and statements relative to the study of map and globe skills in the elementary school grades. These references gave recognition to the importance of the study. This chapter is divided into two categories: (1) map and globe skill instruction in the elementary school; and (2) the preparation of teachers for map and globe skills instruction.

MAP AND GLOBE SKILLS INSTRUCTION IN THE ELEMENTARY SCHOOL

Many social studies educators and social scientists cited the need for map and globe skill instruction in the elementary school. They were also in agreement that this instruction should be within the context of the units of instruction.

Pauline Hilliard, Maurice Ahrens, Roy DeVore, and William Phillips, authors of "A Guide . . . Social Studies Education in Florida Elementary Schools," (1966), wrote that eight, nine, and ten year old children were eager to learn about the maps of their country and the world. They concluded that every teacher should have available in his classroom world maps to use during class discussions.

Janet Lucar (1958), in her study of Louisiana teachers' attitudes toward curricular patterns, methods, and materials, found that supplementary materials such as maps and globes were used only about 30
percent of the time as compared to a much greater use of textbooks. She suggested that some means of suggesting to teachers how to use supplementary materials, such as maps and globes, be adopted by state and local school systems.

Ruby Harris (1960) wrote that map-reading and globe studies should be incorporated in geography and social studies programs to clarify and expand teaching units. John Jarolimek (1971) supported the Harris view; he wrote that constant reference should be made to maps and globes in unit work and other classroom activities. According to Jarolimek, map- and globe-reading skills are best taught by providing systematic instruction in the use of map- and globe-reading as a part of unit activities. John Michaelis (1972) also wrote of the need for teaching map and globe skills within the context of the inquiry process. He noted that maps and globes should be utilized in giving reports and sharing information. Ralph Preston (1968) wrote that pupils should be encouraged to illustrate oral reports with the use of the classroom wall map. Preston also said that children should have the experience of using maps to serve their own interests, such as making maps of their own community.

Jan Broek (1965) cited the need for using map and globe skill knowledge in applied situations; he wrote that every school child should learn the basics of map-reading because maps are used as a base on which to record data.

Hanna, Potter, and Hagaman (1963) reported that children must have needs for using maps before they can take on much meaning. These writers also pointed out that children need first hand experience before geographical concepts can be understood. For example, they
advocated teaching directions by taking students outdoors to note their shadows and on study trips into the neighborhood to identify the direction they are walking as well as the direction the schoolhouse and other nearby buildings face.

Wesley and Adams (1952) wrote that children need to acquire new skills in order to use maps successfully. They need prolonged application of these skills to various kinds of maps.

Lee and Lee (1960) wrote that maps serve many valuable purposes in helping pupils to understand much social studies information, but before children can use maps effectively they must know how to read them.

Hanna, Sarbaroff, Davies, and Farrar (1966) reported that the school has an obligation to provide the experiences that are needed in developing skills, abilities, and understandings in making, reading, and interpreting maps because maps and globes are the basic tools of anyone seeking to gain an understanding of geographic data. Lillian Wituchi (1962) supported this thesis when she reported that map-reading skills have important and practical value in day-to-day activities. Wesley and Cartwright (1968) wrote that maps are encountered almost daily throughout a person's life in travel, books, television, and so forth; therefore, the understanding and use of them are among the most important objectives of the social studies. Elaine Bosowski (1974) supported this view when she wrote that everyone makes maps and that the full power of them, as communicative devices, is realized when one has a better understanding of their structure and effective use.

Lucar (1958) studied the curricular patterns used in geography and history by selected Louisiana elementary teachers in the parish
schools of Caddo, Calcasieu, Catahoula, East Baton Rouge, and Orleans. Her findings revealed that the instructional program in the elementary schools of these school systems was based chiefly on textbook-centered activities. She recommended that provisions be made to expand the elementary social studies programs to include activities and experiences besides those gained through textbooks, including the wider use of maps and globes as teaching tools.

Ralph Preston (1968:266) gave added support to the teaching of map and globe skills; he wrote, "There is little question that children's potential for map and globe learning has been underestimated."

Geographer L. Dudley Stamp, in the 1930's, studied the ability of children to make practical application of map and globe skills. He used the services of school children in his "British Land Use Survey," of 1930-47 (Stamp, 1960). He reported that once school children have been taught to read a map with accuracy, they have no difficulty recording data on them. Stamp (1962:3) later reported, "The work of recording land use is a magnificent educational exercise involving accurate observation and map-reading."

The need for a sequential and systematic approach to map and globe skill instruction has received much support from social studies educators and social scientists. Lillian Wituchi (1962) wrote that map-reading, like other skills, should follow a program in which there is a systematic development of both skills and knowledge. She suggested the following program for map and globe skill development:

**Kindergarten:** Map readiness as a part of play activities,

**Primary:** Beginning map skills with first graders learning the four cardinal directions,
Middle Grades: Reading and using maps and globes, and

Upper Grades: Understanding polar projections and meridians, and study of different types of maps.

John Ord (1972:123) reported, "The present need for improved map-reading skills and related abilities points up the importance of a development program in this area beginning at the earliest grade levels."

Plohoft and Schuster (1971) reported that as early as the second year in school, teachers have introduced developmental experiences which lead to understanding and skill in using maps. Haig A. Rushdoony's (1963) research showed that map-reading instruction should be moved down to the primary grade levels. He went on to call for the placement of objectives related to map and globe skills in grades one and two as well as grade three.

Crowder (1973) reported that it was important that students be taught map and globe skills on their own levels. This should include primary students beginning with map and globe skills centered on their home community. He went on to say that a thorough review and reteaching was necessary at all grade levels.

Goldstein (1966) concluded from his study, that first graders entered school with much information about landforms and waterforms. This researcher recommended that school systems examine existing social studies programs with a view toward broadening and extending the content for the beginning school child.

Hanna, Sarbaroff, Davies, and Farrar (1966) supported the need for a continuous program in the development of map and globe skills; they reported that selected map skills should provide the thread of
continuity throughout the elementary grades, and that the mastery of a
skill should not be expected at any particular grade level. Kilman
(1969) recommended that instruction in map-reading begin at the
kindergarten level, followed by a sequential program at succeeding
levels. Carswell (1968) investigated the topographic map-reading and
interpretation abilities of students in grades four, five, and six.
He found that children in these grades could learn to use large-scale
topographic maps effectively. Frye (1973) found that "topographic"
maps were more appropriate for instruction in the elementary grades
than the "relief-like" maps normally used in the elementary classroom.

DiFigio (1970) wrote that it appeared that mental age was an
acceptable criterion for determining placement of time concepts in the
elementary social studies curriculum. This view was supported by Frye
(1973) who reported that nine- to thirteen- year-old children were able
to interpret maps successfully before they reached the stage of formal
operations as defined by Piaget, (eleven through fourteen years).

Harrison and Solomon (1965) discovered that children have
broad interests and therefore needed more effective instruction in
geographic terms at an earlier age than was thought by many. Davis
(1958) also found that instruction in certain aspects of geographic
time and space relating to time zones was profitable earlier than had
been thought possible.

There was general agreement among social studies educators and
social scientists concerning those map and globe skills which needed to
be taught in the elementary grades.

Rose Sarbaroff (1965) identified five map and globe skills that,
in her view, should be taught in order for children to become literate
citizens. These were location, symbols, scale, relative location, and the globe itself as a model of the earth.

Ruby Harris (1960) developed a grade-by-grade skills list for use in teaching map and globe skills systematically from kindergarten through grade twelve. In the primary or readiness program (grades K - 3) she included the following: the shape of the earth, the very large earth as represented by the small globe, the symbols for land and water, recognition of their own country, rotation from west to east, and simple locations. For the beginners program (grade 4) she selected directions on a globe or map, map symbols and their use, position and shape of the continents, use of simple map and globe scale, cause of day and night, the making of a flat map, and the meaning of color on a relief map. Her intermediate program (grades 5-6) consisted of directions on maps of any projection, use of map legends, finding of regional locations, finding and using latitude, finding and using longitude, comparing maps, using a map to learn facts about the state, using a map to understand historical factors, the revolution of the earth and the cause of seasons, and orbits of the earth and earth satellites. Thomas and Brubaker (1971) listed these map skills as being of importance: direction, scale, location, symbols, use of the legend, and comparison and inference.

Jarolimek (1977a) listed six map and globe skills which he considered essential to the social studies. These were the ability to orient the map and note directions, the ability to recognize the scale of the map and to compute distances, the ability to express relative locations and to read map symbols, the ability to locate places on
maps and globes by means of grid systems, and the ability to compare maps and make inferences.

In *The Rand McNally Handbook of Map and Globe Usage*, Harris (1960) presented the basic concepts and skills suggested for kindergarten through grade six. These included: (1) shape and size of the earth; (2) directions; (3) distance and scale; (4) symbols; (5) earth-sun relationships; (6) location; and (7) recognition of countries, regions, bodies of water, states, and cities.

Carpenter (1963) in a National Council for the Social Studies Yearbook identified the following skills as essential for the interpretation of maps and globes: use of cardinal directions and intermediate directions in the classroom and neighborhood, by working with maps; use of relative terms of locations and directions; use of the compass and north arrow on a map; use of parallels and meridians in determining directions; use of latitude and longitude in locating places; identification of time zones of the United States and their relation to longitude; recognition of the home city and state on a map of the United States and on a globe; recognition of land and water masses, the equator, tropics, circles, and large islands; use and interpretation of abbreviations, map vocabulary, and key; determining and estimating a map distance by using a scale of miles; use of legends on different kinds of maps; interpreting elevation, pictorial symbols, dots, lines, colors, and other symbols used in addition to pictorial symbols; and recognition of distortions involved in different map projections.

Carswell (1970) in his study concerning children's ability to read topographic maps defined the skills to be evaluated as the
ability to read symbols, directions, scale, elevation, and grid systems. Wesley and Cartwright (1968) reported that children should be taught the use of scale and symbols on both maps and globes, as well as the uses of different kinds of maps. Askov and Kamn (1974) wrote that lower level skills should be introduced in textbooks for the lower grade levels followed by a gradual increase in the complexity of skills at the higher grade levels.

Sorohan (1962) listed eleven skills relating to map learnings. These included: different uses of maps; a map legend, map symbols, and map abbreviations; scale of miles; a grid system; longitude; map projections; an atlas, and the concept of one map for one purpose; position of country and state; and regions and the regional concept.

THE PREPARATION OF TEACHERS FOR MAP AND GLOBE SKILLS INSTRUCTION

The relationship of a teacher's knowledge and preparation in the area of map and globe skills to his ability to present these skills effectively has been shown by several studies and supported by many writers. Schumacher (1961) wrote that teachers should become aware of the importance of surface terms and assume the responsibility of supplementing the content found in textbooks concerning surface features.

Geographer Preston James (1947) cited the need for improving the geography curriculum for education students when he wrote that one possible reason for the ineffectual teaching of map and globe skills could have been the attitude of certain school men that geography could be adequately taught by teachers who lack specific geographic training.

Wesley and Cartwright (1968) supported James' views. They wrote that teachers of social studies must be reasonably well versed in
the social studies and that the development of an understanding of the social sciences is the responsibility of the total curriculum of institutions that prepare teachers. J. Wolf Prow (1971) added support of these views when he reported that only a minority of elementary school teachers have been exposed to geographic education. Hanna, Sarbaroff, Davies, and Farrar (1966) reported a decreasing emphasis on geographic instruction despite the increasing importance of geography in our daily lives.

Veltkamp (1967) found in his study that elementary teachers were not as well prepared to teach geography as they felt they should be or would like to be. Stjernberg (1974) concluded from his study that primary teachers were not well prepared to teach map and globe skills and that any acquisition of such skills had occurred mainly by chance.

Perry Hicks (1968) studied thirty-six teachers of grades seven and eight. He found that: (1) knowledge of English History was not related to the number of credit hours received in courses dealing with English History, and (2) knowledge of English History was related to the type of social studies class which the teachers were teaching or had taught. Hicks concluded that institutions which prepare teachers should examine their programs to determine if too much stress is being placed on formal course work and too little on teaching experience. Jarolimek (1977a) supported this conclusion when he expressed the need for including the teaching of map and globe skills during the student teaching experience. He said the interns should be encouraged to teach map and globe skills as a part of the regular social studies unit or in connection with current events.
Marion Rice (1972:6456-6457) reported that because normal schools and teachers' colleges have been converted into general colleges that the training of teachers is no longer the function of an institution with a unified purpose. The training of teachers is now artificially split between a college or department of education on one hand, and the college of arts and science on the other. She went on to say that these colleges pretend that the professors of education actually train teachers while the evidence is to the contrary. She concluded, "The type of teacher training we give in departments of social science education actually may be a disservice."

Rice (1973) called for major changes in the scope of elementary education. She reported that limiting the scope of elementary education to segments, such as K-1, 3-5, or 6-8, would make it possible to gear teacher training curriculums more specifically to the cognitive needs of a particular age group. This would, according to Rice, ensure more precise teacher preparation.

Johnson (1970) described a new program instituted at the University of Georgia at Athens in the 1960's for the training of elementary teachers. This program included: (1) more instruction in the parent social sciences, and (2) more pointed attention to the development of inquiry processes in the various fields. This program involved a double major in education and in a teaching field. The program introduced specialized methods courses. Later Marion Rice (1973) reported that the hours available actually declined due to increased increments in professional education courses. A review of course work indicated that not one student, in a sample of twenty-three
elementary education graduates surveyed, had taken an upper division social science course.

Schneider (1976) reported a study by three University of Georgia faculty members who were teaching the methods classes for prospective elementary teachers. Their findings indicated that elementary teachers in general had problems with a substantial group of test items in the same skill areas as the sixth grade students included in the study. Schneider concluded that one problem may be the limited geographic knowledge of elementary teachers. He noted that before improvement in students' performances in the area of map and globe skills could be expected, their teachers would need a better background in geography.

Marion Nissen (1971) conducted a study to determine if selected students majoring in elementary education at the University of Southern Mississippi had acquired the geographic concepts generally included in the elementary textbooks and in the standardized tests used in Mississippi. A comparison of groups who had different amounts of geography instruction in relation to their acquisition of geographic concepts. She found a significant difference in the level of competency in acquisition of geographic concepts as related to the number of geography courses the student had completed. She also found a significant difference in acquired geography concepts between the group that had geography courses in junior high school and the group that had no geography courses in junior or senior high school.

Haywood (1972) studied the degree to which future teachers had attained social studies skills used in the elementary school as listed by the National Council of the Social Studies. These skills included: reading social studies materials, applying problem solving techniques,
interpreting maps and globes, and use of time and chronology. Haywood found that most future teachers who had completed a social studies methods course scored above the ninth-grade level as shown in the skills listing. However, his results indicated that test performance provided no significant predictive relationship for success in interpreting reading materials nor in map and globe interpretation.

A relevant study, closely related to this present research, was that of Maura R. Garvida (1977). This study was an analysis of Louisiana teachers' knowledge of selected map and globe skills. The purpose of this study was to determine to what extent Louisiana classroom teachers, grades kindergarten through four, possessed knowledge of selected map and globe skills; and to determine whether significant relationships existed between the possessed knowledge and skills and certain factors of professional education, teaching experience, position, and personal traits.

Garvida (1977) employed the following procedures: (1) development of a survey instrument by obtaining permission to use "Survey of Map and Globe Skills - Primary Grades (K - 3)" which Stjernberg (1974) had developed, validated, and used in his study, "An Analysis of Primary Grade Teachers' Knowledge of Selected Map and Globe Skills," and by developing test items for grade four which were validated by a panel of social studies educators; (2) development of a questionnaire of personal and professional data; (3) selecting a stratified random sample of approximately five hundred Louisiana elementary teachers; (4) evaluating teacher knowledge of map and globe skills on the basis of responses to the items on the survey instrument; (5) tabulating and presenting the data utilizing an analysis of
variance technique as a statistical tool; and (6) extracting conclusions, deducing implications, and suggesting directions for further study.

An analysis of Garvida's (1977) study showed that teachers' performance on the survey instrument of selected map and globe skills were not significantly related to the following variables: age of the teachers, teaching experiences, types of degrees held, number of college credits in geography, number of college credits in social studies methods courses, and recency of social studies methods courses. Variables which were significantly related to teachers' performance on the map and globe survey instrument included: teaching levels of teachers (Teachers in grade four scored significantly higher than did teachers in any of the other groups.), number of college credits in history, recency of faculty studies in social studies and recency of attendance at social studies workshops or conferences.

Garvida's (1977) study indicated that faculty studies in the area of social studies contributed slightly to map and globe knowledge and skills; attendance at social studies workshops and conferences had a slight effect on scores of teachers. Finally, Garvida (1977) concluded that the sample of Louisiana teachers who participated in this study had a low rate of correct responses.

SUMMARY

The review of literature showed the importance that social studies educators and social scientists attached to instruction in map and globe skills. References also identified those map and globe skills in social studies which educators and social scientists believed should be taught in the elementary grades. Studies conducted in this
area indicated that most elementary teachers lacked the necessary knowledge needed for teaching these map and globe skills and that this lack of knowledge and skills was directly related to lack of preparation.

The review of related literature supported the need for the data sought in the present investigation.
Chapter 3

PROCEDURE

The analysis of student teachers' knowledge of selected map and globe skills was conducted through the use of a survey instrument and a questionnaire given to the elementary student teachers at Louisiana State University, Baton Rouge during the first week of the last month of their student teaching experience.

Lloyd J. Stjernberg (1974) used a survey instrument of map and globe skills for primary teachers. Maura R. Garvida (1977) used a survey instrument of map and globe skills for kindergarten through fourth grade teachers. Through the questionnaire design and the survey instrument, it was possible to receive somewhat uniform responses from the four groups of student teachers at Louisiana State University, Baton Rouge. The validity of the study was enhanced by selecting the total population and by structured responses to questions.

DEVELOPMENT OF THE SURVEY INSTRUMENT

Lloyd J. Stjernberg (1974) developed a survey instrument entitled, "Survey of Map and Globe Skills - Primary Grades (K - 3)," which he used in his study, "An Analysis of Primary Teachers Knowledge of Selected Map and Globe Skills." Maura R. Garvida and Jesse Joe Parker, (Garvida:1977) modified this survey for use with grade four
teachers entitled, "Survey of Map and Globe Skills (Grades K - 4)"
(Appendix C). The test items used in this survey had been validated
for the Garvida study by a panel of social studies educators,
(Garvida 1977:42-43).

DEVELOPMENT OF THE QUESTIONNAIRE

The personal and educational data selected for inclusion in
the questionnaire included:

1. The number of graduates in the student teacher's high
   school graduating class. The choices were: "1 - 100, 101 - 200,
   201 - 300, 301 - 400, 401 - 500, 501 - 600, over 600."

2. The student teacher's rank in that high school graduating
   class. The choices were: "Upper quartile, second quartile, third
   quartile, and fourth quartile."

3. The number of social studies courses the student teacher
   studied in high school. The choices were: "None, one, two, three,
   four, and over four."

4. Whether or not a geography course was taken in high school.
   The choices were: "Yes and no."

5. The number of college geography courses completed. The
   choices here were: "None, one, two, three or more."

6. The subjects' participation in teaching social studies in the
   student teaching experience. The choices were: "I have taught a social
   studies unit, I am scheduled to teach a social studies unit, and there
   are no plans for me to teach a social studies unit."

7. The subjects' participation in teaching social studies in
   the student teaching experience. The choices were: "There is much
emphasis on social studies, there is some emphasis on social studies, there is little emphasis on social studies, and no definite place is given to social studies."

A sample of the questionnaire and the survey instrument may be found in Appendix B and Appendix C.

METHOD OF SAMPLE SELECTION

The subjects were the entire population of the elementary education majors student teaching at Louisiana State University, Baton Rouge in the semesters, Fall, 1976 through Spring, 1978.

COLLECTION OF DATA

The survey instruments and questionnaires were administered during the first week of the last month of the following semesters: Fall, 1976; Spring, 1977; Fall, 1977; Spring, 1978, at meetings of all elementary student teachers. These meetings were set up by, and notices sent out from the Office of Student Teaching at Louisiana State University, Baton Rouge. A follow-up meeting was set in each case by the researcher to administer the survey forms to those who were absent at the first meeting.

Attempts were made to survey a total population. Due to scheduling problems on the part of the student teachers involved, testing of 100 percent of the population was not possible. Out of a total of 399 elementary education majors enrolled in student teaching during the study period, the researcher was able to administer the survey instrument and questionnaire to 365. This represented 91 percent of the total population.
TREATMENT OF DATA

The survey instruments were hand scored by the researcher. The scores for each of the thirty-five categories of survey items were entered on the IBM sheet for each subject along with responses to the questionnaire (Appendix D).

A computer program was developed by the researcher and personnel at the Experimental Statistics Department of Louisiana State University with regards to the following: (a) analysis of variance to determine which of the variables related significantly to the scores on the survey instrument; (b) the Standard Error of the differences between two uncorrelated means "t" tests; (c) correlation coefficients to determine significant differences between scores of the survey items and LSU grade point average, overall grade point average, composite score on the American College Test, social studies percentile rank on the American College College Test, and the LSU composite percentile rank on the American College Test; and item analysis to determine the percent of subjects missing each of the thirty-five categories of survey items.

SUMMARY

A personal and educational questionnaire and a survey instrument of selected map and globe skills were used for collection of data. The questionnaire consisted of personal and educational data; while the survey instrument was composed of selected test items on map and globe skills.

The questionnaires and survey instrument were administered to elementary education majors at Louisiana State University, Baton Rouge.
during the first week of the last month of their student teaching experience.

Responses from the questionnaires and survey instruments were computer programmed for means, analysis of variance, and correlation coefficients between means and certain academic factors. Standard deviations and "t" tests on significant variables were also computer programmed, and item analyses were also obtained to determine the percent of subjects missing each of the thirty-five categories into which the eighty items on the survey instrument had been grouped.
Chapter 4

PRESENTATION AND ANALYSIS OF DATA

Chapter four is a report and analysis of data pertaining to the relationships among the student teachers' responses to the items on the questionnaire and to the "Survey of Map and Globe Skills (Grades K - 4)." The subjects used for this study were elementary education majors at Louisiana State University, Baton Rouge, who were engaged in their student teaching experiences during the Fall Semester of 1976, the Spring Semester of 1977, the Fall Semester of 1977, and the Spring Semester of 1978. The types of analyses applied to the data included: correction of responses; noting the summarized means and standard deviations of responses within sub-groups; application of "t" tests to determine which differences were significant; and an analysis of variance among personal and educational data variables with respect to a summary of the thirty-five categories of test items used to determine student teachers' knowledge of selected map and globe skills.

DESCRIPTION OF THE SAMPLE

The population for this study included the elementary education majors at Louisiana State University, Baton Rouge, who were engaged in their student teaching experience during the Fall Semester of 1976, the Spring Semester of 1977, the Fall Semester of 1977, and the Spring Semester of 1978. A total of 365 student teachers were administered the survey instrument and questionnaire out of a total student teacher
population of 399, a 91 percent level of participation. The researcher
did not administer the survey instrument and questionnaire to thirty-
four student teachers who were unable to attend either the regularly
scheduled meetings or the make-up meetings due to conflicts in their
time schedules.

1. **Number of graduates in student teachers' high school
   graduating class.** Three hundred forty-nine or 96 percent of the 365
elementary education student teachers surveyed responded to this variable
Of this number, 110 reported they graduated in a class numbering
between 1 and 100; 49 reported they graduated in a class numbering
between 101 and 200; 33 reported they graduated in a class numbering
between 201 and 300; 45 reported they graduated in a class numbering
between 301 and 400; 49 reported they graduated in a class numbering
between 401 and 500; 41 reported they graduated in a class numbering
between 501 and 600; and 22 reported they graduated in a class
numbering over 600.

2. **Rank in graduating class.** Three hundred-four or 83 percent
   of the 365 elementary education student teachers surveyed responded
to this variable. Of this number, 206 reported they were in the upper
quartile; 78 reported they were in the second quartile; 13 reported
they were in the third quartile; and 7 reported they were in the fourth
quartile.

3. **Number of high school social studies courses taken.** Three
   hundred fifty-nine or 98 percent of the 365 elementary education
student teachers surveyed responded to this variable. Of this number,
19 reported they had no high school social studies courses; 35 reported
they had one course; 127 reported they had three courses; 60 reported they had four courses, and 12 reported they had more than four courses.

4. **High school geography courses.** Three hundred forty-five or 95 percent of the 365 elementary education student teachers surveyed responded to this variable. Of this number, 86 reported they had had a high school geography course; 259 reported they had had no high school geography course.

5. **Number of college geography courses completed.** Three hundred fifty-six or 98 percent of the 365 elementary education student teachers surveyed responded to this variable. Of this number, 17 reported they had had no college geography course; 218 reported they had completed one college geography course; 110 reported they had completed two college geography courses; and 11 reported they had completed three or more college geography courses.

6. **Degrees of subjects' participation in the teaching of social studies in the student teaching experience.** Three hundred fifty-three or 97 percent of the 365 elementary education student teachers surveyed responded to this variable. Of this number, 288 reported they had taught a social studies unit; 27 reported they were scheduled to teach a social studies unit; and 38 reported there were no plans for them to teach a social studies unit.

7. **The student teachers' perception of the status of social studies in the classroom while student teaching.** Three hundred fifty-one or 96 percent of the 365 elementary education student teachers surveyed responded to this variable. Of this number, 143 reported there was much emphasis on social studies; 164 reported there was
some emphasis; 31 reported there was little emphasis; and 13 reported that social studies had no definite place in the classroom.

DATA CONCERNING GENERAL PERSONAL AND EDUCATIONAL VARIABLES

Variables relating to personal and educational data were subjected to an analysis of variance to determine their relationship to student teachers' knowledge of selected map and globe skills. The variables were arranged into two sets of tables for presentation and analysis. Tables were developed for the summarized means and standard deviations of student teachers' knowledge of selected map and globe skills, and other tables were developed for analysis of variance of student teachers' knowledge of selected map and globe skills.

The variables included: number of graduates in the student teacher's high school graduating class; rank of the student teacher in that graduating class; number of high school social studies courses taken; high school geography course taken; number of college geography courses completed; student teachers' perception of the status of social studies in the classroom while student teaching; and the subjects' participation in teaching social studies in the student teaching experience. Summarized means, standard deviations, and F values are shown in Tables 1 through 14.

Relationships between student teachers' knowledge of selected map and globe skills and LSU grade point average, overall grade point average, composite score on the American College Test, social studies percentile rank of the American College Test, and LSU composite percentile rank on the American College Test were measured with Correlations of Coefficients. Correlations of Coefficients are shown in Table 15.
An item analysis on each of the 35 test item categories was computed. Results are presented in Table 16.

1. **Number of graduates in student teacher's high school graduating class.** Data from respondents were grouped according to the number of graduates in their high school graduating classes as shown in Table 1. A study of the data revealed no significant differences among means of student teachers' knowledge of selected map and globe skills when student teachers were grouped according to the number of graduates in their high school graduating classes. The mean score was highest, 55.80, for the student teachers who graduated in a class numbering between 501 and 600. The student teachers graduating in a class numbering between 101 and 200 ranked lowest with a mean score of 50.96. The next lowest group was in graduating classes numbering between 301 and 400, with a mean score of 50.98.

The data presented in Table 2 revealed no significant differences at the .05 level of confidence among the number of graduates in the student teacher's high school graduating class and knowledge of selected map and globe skills. An F value of 0.87 was obtained. The null hypothesis was accepted.

2. **Rank in that high school graduating class.** Data in Table 3 showed that respondents were divided in their map and globe rank groupings. Although there were no significant differences between means, correct responses were highest among student teachers who reported graduating in the upper quartile of their high school graduating class. The lowest means of scores were made by student teachers who reported graduating in the second quartile.
Table 1

Means and Standard Deviations of Student Teachers' Knowledge of Map and Globe Skills with Respect to Number of Graduates in High School Graduating Class

<table>
<thead>
<tr>
<th>Number of Graduates</th>
<th>Number of Cases</th>
<th>Means</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-100</td>
<td>110</td>
<td>51.83</td>
<td>12.29</td>
</tr>
<tr>
<td>101-200</td>
<td>49</td>
<td>50.96</td>
<td>10.90</td>
</tr>
<tr>
<td>201-300</td>
<td>33</td>
<td>52.12</td>
<td>11.98</td>
</tr>
<tr>
<td>301-400</td>
<td>45</td>
<td>50.98</td>
<td>13.82</td>
</tr>
<tr>
<td>401-500</td>
<td>49</td>
<td>51.31</td>
<td>9.87</td>
</tr>
<tr>
<td>501-600</td>
<td>41</td>
<td>55.80</td>
<td>10.16</td>
</tr>
<tr>
<td>Over 600</td>
<td>22</td>
<td>52.77</td>
<td>14.03</td>
</tr>
<tr>
<td>Total Cases</td>
<td>349</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2

Analysis of Variance for Differences Among Number of Graduates in High School Graduating Class with Respect to Student Teachers' Knowledge of Map and Globe Skills

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>348</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Graduates</td>
<td>6</td>
<td>122.01</td>
<td>0.87*</td>
</tr>
<tr>
<td>Error</td>
<td>342</td>
<td>140.66</td>
<td></td>
</tr>
</tbody>
</table>

*Not significant at the .05 level of confidence
Table 3

Means and Standard Deviations of Student Teachers' Knowledge of Map and Globe Skills with Respect to Rank of Student Teacher in High School Graduating Class

<table>
<thead>
<tr>
<th>Rank</th>
<th>Number of Cases</th>
<th>Means</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Quartile</td>
<td>206</td>
<td>52.45</td>
<td>12.57</td>
</tr>
<tr>
<td>Second Quartile</td>
<td>78</td>
<td>50.91</td>
<td>9.98</td>
</tr>
<tr>
<td>Third Quartile</td>
<td>13</td>
<td>52.08</td>
<td>13.19</td>
</tr>
<tr>
<td>Fourth Quartile</td>
<td>7</td>
<td>52.14</td>
<td>9.12</td>
</tr>
<tr>
<td>Total Cases</td>
<td>304</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As reported in Table 4, no significant differences were obtained among rank groups with respect to student teachers' knowledge of map and globe skills. The null hypothesis was accepted.

Table 4

Analysis of Variance for Differences Among Ranks of Student Teachers with Respect to Their Knowledge of Map and Globe Skills

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Mean</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>303</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ranks</td>
<td>3</td>
<td>44.83</td>
<td>0.32*</td>
</tr>
<tr>
<td>Error</td>
<td>300</td>
<td>142.18</td>
<td></td>
</tr>
</tbody>
</table>

*Not significant at the .05 level of confidence
3. **Number of high school social studies courses taken.** A study of the responses of student teachers to the survey instrument and the variable, number of high school social studies courses taken by the student teachers, revealed significant differences at the .05 level of confidence among means as shown in the data in Table 5. The student teachers were grouped according to the number of high school social studies courses taken. Summarized means of responses were found to differ significantly. Student teachers having taken over four high school social studies courses ranked highest, 57.83. The second highest mean score, 55.67, was that of student teachers who had taken four high school social studies courses. Student teachers who had taken two high school social studies courses ranked third with a mean score of 52.99. Those student teachers having had three high school social studies courses ranked fourth with a mean score of 52.71. The lowest score, 43.57, was of student teachers having taken one high school social studies course. Second lowest was the mean score of 46.84, of the student teachers who reported having had no high school social studies courses.

The data presented in Table 6 showed significant differences at the .05 level of confidence among the number of high school social studies courses taken with respect to student teachers' knowledge of map and globe skills.

The **Standard Error of difference** between two uncorrelated means was obtained to determine which differences were significant. The "t" test greater than 1.96 were considered significant. Findings were:
Table 5
Means and Standard Deviations of Student Teachers' Knowledge of Map and Globe Skills with Respect to Number of High School Social Studies Courses

<table>
<thead>
<tr>
<th>Number of High School Social Studies Courses</th>
<th>Number of Cases</th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>19</td>
<td>46.84</td>
<td>17.96</td>
</tr>
<tr>
<td>One</td>
<td>35</td>
<td>43.57</td>
<td>12.24</td>
</tr>
<tr>
<td>Two</td>
<td>127</td>
<td>52.99</td>
<td>10.97</td>
</tr>
<tr>
<td>Three</td>
<td>106</td>
<td>52.71</td>
<td>11.02</td>
</tr>
<tr>
<td>Four</td>
<td>60</td>
<td>55.67</td>
<td>10.16</td>
</tr>
<tr>
<td>Over Four</td>
<td>12</td>
<td>57.83</td>
<td>10.12</td>
</tr>
<tr>
<td>Total Cases</td>
<td>359</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6
Analysis of Variance for Differences Among Number of High School Social Studies Courses Taken with Respect to Student Teachers' Knowledge of Map and Globe Skills

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>558</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of High School Social Studies Courses</td>
<td>5</td>
<td>871.64</td>
<td>6.69*</td>
</tr>
<tr>
<td>Error</td>
<td>353</td>
<td>130.38</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence
a. The "t" test between those student teachers having had no high school social studies courses and those having had four courses was 2.04, which was significant at the .05 level, in favor of the student teachers who had completed four high school social studies courses.

b. The "t" test between those student teachers having had one high school social studies course and those having had two high school social studies courses was 4.39, which was significant, in favor of the student teachers having had two high school social studies courses.

c. The "t" test between those student teachers having had one high school social studies course and those having had three high school social studies courses was equal to 4.14, which was significant, in favor of those having had three high school social studies courses.

d. The "t" test between those student teachers having had one high school social studies course and those having had four high school social studies courses was equal to 5.19, which was significant, in favor of those having had four high school social studies courses.

e. The "t" test between those student teachers having had one high school social studies course and those having had more than four high school social studies courses was equal to 3.63, which was significant, in favor of those having had more than four high school social studies courses.

The null hypothesis was rejected.
4. **High school geography courses.** A study of the data in Table 7 revealed no significant differences among means of student teachers' knowledge of map and globe skills when student teachers were grouped according to whether or not a high school geography course was taken. Of the 345 student teachers responding to this variable only 86 or 25 percent reported having had a high school geography course. This group had a mean score of 52.52. Two hundred fifty-nine reported not having had a high school geography course. This group had a mean score of 52.05. On the basis of the data shown in Table 8, the null hypothesis was accepted at the .05 level of confidence with respect to the scores of student teachers on the "Survey of Map and Globe Skills (Grades K - 4)" when comparing those who had completed a high school geography course and those who had not completed a high school geography course. An F Value of 0.12 was obtained.

### Table 7

**Means and Standard Deviations of Student Teachers' Knowledge of Map and Globe Skills with Respect to Those Who Have and Have Not Taken High School Geography Courses**

<table>
<thead>
<tr>
<th>High School Geography Courses</th>
<th>Number of Cases</th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>86</td>
<td>52.52</td>
<td>12.53</td>
</tr>
<tr>
<td>No</td>
<td>259</td>
<td>52.05</td>
<td>11.80</td>
</tr>
<tr>
<td>Total Cases</td>
<td>345</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 8

Analysis of Variance for Differences Among Student Teachers Who Have and Have Not Taken High School Geography Courses with Respect to Their Knowledge of Map and Globe Skills

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>353</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Geography Courses</td>
<td>2</td>
<td>17.03</td>
<td>0.12*</td>
</tr>
<tr>
<td>Error</td>
<td>351</td>
<td>141.49</td>
<td></td>
</tr>
</tbody>
</table>

*Not significant at the .05 level of confidence

5. **Number of college geography courses.** Data in Table 9 revealed no significant differences among means of student teachers' knowledge of map and globe skills when student teachers were grouped according to the number of college geography courses completed. The mean score was highest, 57.36, for the student teachers who had completed three or more college geography courses. The student teachers who reported having completed no college geography courses had the lowest mean score, 47.65. The next lowest group was the student teachers who had completed only one college geography course with a mean score of 51.65.

On the basis of the data presented in Table 10 the null hypothesis was accepted at the .05 level of confidence among those student teachers having completed zero through three or more college geography courses with respect to the student teachers' knowledge of map and globe skills.
Table 9
Means and Standard Deviations of Student Teachers' Knowledge of Map and Globe Skills with Respect to Number of College Geography Courses Completed

<table>
<thead>
<tr>
<th>Number of College Geography Courses</th>
<th>Number of Cases</th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>17</td>
<td>47.65</td>
<td>12.53</td>
</tr>
<tr>
<td>One</td>
<td>218</td>
<td>51.65</td>
<td>11.96</td>
</tr>
<tr>
<td>Two</td>
<td>110</td>
<td>53.38</td>
<td>11.47</td>
</tr>
<tr>
<td>Three or more</td>
<td>11</td>
<td>57.36</td>
<td>10.77</td>
</tr>
<tr>
<td>Total Cases</td>
<td>356</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10
Analysis of Variance for Differences Among College Geography Courses Completed with Respect to Student Teachers' Knowledge of Map and Globe Skills

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>356</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Geography Courses</td>
<td>4</td>
<td>218.67</td>
<td>1.57*</td>
</tr>
<tr>
<td>Error</td>
<td>352</td>
<td>139.36</td>
<td></td>
</tr>
</tbody>
</table>

*Not significant at the .05 level of confidence

6. The student teachers' perception of the status of social studies in the classroom while student teaching. Data from the respondents were grouped according to the student teachers' perception
of the status of social studies in the classroom while student teaching. Summarized means of scores shown in Table 11 were found to differ significantly at the .05 level of confidence. The means of the scores, 53.88, of student teachers in classrooms where there was much emphasis on social studies reported was the highest of the groups. Student teachers in classrooms where social studies was reported to have no definite place had the lowest mean scores, 52.26. The second lowest group, 48.16, were student teachers in classrooms where there was little emphasis on social studies.

Table 11

Means and Standard Deviations of Student Teachers' Knowledge of Map and Globe Skills with Respect to the Student Teachers' Perception of the Status of Social Studies in the Classroom while Student Teaching

<table>
<thead>
<tr>
<th>Student Teachers' Perception of the Status of Social Studies in the Classroom</th>
<th>Number of Cases</th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Much Emphasis</td>
<td>143</td>
<td>53.88</td>
<td>11.06</td>
</tr>
<tr>
<td>Some Emphasis</td>
<td>164</td>
<td>52.26</td>
<td>11.73</td>
</tr>
<tr>
<td>Little Emphasis</td>
<td>31</td>
<td>48.16</td>
<td>11.18</td>
</tr>
<tr>
<td>No Definite Place</td>
<td>13</td>
<td>47.62</td>
<td>13.64</td>
</tr>
<tr>
<td><strong>Total Cases</strong></td>
<td><strong>351</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The data in Table 12 showed significant differences at the .05 level of confidence in terms of the student teachers' perception of the status of social studies in the classroom while student teaching with respect to student teachers' knowledge of map and globe skills.

Table 12

Analysis of Variance for Differences Among Student Teachers' Perception of the Status of Social Studies in the Classroom While Student Teaching with Respect to Student Teachers' Knowledge of Map and Globe Skills

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>350</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Teachers' Perception of the Status of Social Studies in the Classroom</td>
<td>3</td>
<td>390.44</td>
<td>2.96*</td>
</tr>
<tr>
<td>Error</td>
<td>347</td>
<td>131.97</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence

The Standard Error of difference between two uncorrelated means was obtained to determine which differences were significant. Findings were:

a. The "t" test between scores of those student teachers who were student teaching in classrooms where they perceived there was little emphasis on social studies and those classrooms where much emphasis on social studies was perceived was 2.61, which was significant in favor of those students in classrooms where much emphasis on social studies was perceived. The null hypothesis was rejected.
7. **Degrees of subjects' participation in the teaching of social studies in the student teaching experience.** A study of the responses of student teachers to the survey instrument and the variable, degrees of the subjects' participation in teaching social studies in the student teaching experience, revealed no significant differences among means as shown in Table 13. The student teachers were grouped according to whether they had taught a social studies unit, were scheduled to teach a social studies unit, or there were no plans for them to teach a social studies unit. The mean score was highest for those who were scheduled to teach a social studies unit, 53.74. The student teachers who were not scheduled to teach a social studies unit had the lowest mean score, 50.39.

**Table 13**

Means and Standard Deviations of Student Teachers' Knowledge of Map and Globe Skills with Respect to Degrees of the Subjects' Participation in Teaching Social Studies in the Student Teaching Experience

<table>
<thead>
<tr>
<th>Degrees of the Subjects' Participation in Teaching Social Studies in the Student Teaching Experience</th>
<th>Number of Cases</th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have Taught Unit</td>
<td>288</td>
<td>52.64</td>
<td>11.76</td>
</tr>
<tr>
<td>Scheduled to Teach Unit</td>
<td>27</td>
<td>53.64</td>
<td>10.19</td>
</tr>
<tr>
<td>Not Scheduled to Teach Unit</td>
<td>38</td>
<td>50.39</td>
<td>11.48</td>
</tr>
<tr>
<td><strong>Total Cases</strong></td>
<td><strong>353</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the basis of the data presented in Table 14 the null hypothesis was accepted at the .05 level of confidence among the
student teachers grouped as to degrees of the subjects' participation in teaching social studies in the student teaching experience. An F Value of 0.80 was obtained.

Table 14
Analysis of Variance for Differences Among Degrees of the Subjects' Participation in Teaching Social Studies in the Student Teaching Experience with Respect to the Student Teachers' Knowledge of Map and Globe Skills

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>352</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degrees of the Subjects' Participation in Teaching Social Studies in the Student Teaching Experience</td>
<td>2</td>
<td>107.71</td>
<td>0.80*</td>
</tr>
<tr>
<td>Error</td>
<td>350</td>
<td>135.14</td>
<td></td>
</tr>
</tbody>
</table>

*Not significant at the .05 level of confidence

Correlation Coefficients

Correlation coefficients were obtained to determine significant differences between scores on the survey items and the following: (a) LSU grade point average; (b) overall grade point average; (c) composite score on the American College Test; (d) social studies percentile rank on the American College Test; (e) LSU composite percentile rank on the American College Test.

The data, as shown in Table 15, revealed the following: Significant differences were found at the .05 level of confidence between the student teachers' scores and their LSU grade point average; overall grade point average; composite score on the American College
Test; social studies percentile rank on the American College Test; and LSU composite rank on the American College Test.

Table 15

<table>
<thead>
<tr>
<th>Academic Factors</th>
<th>Number of Subjects</th>
<th>Degrees of Freedom</th>
<th>Calculated R</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSU Grade Point Average</td>
<td>342</td>
<td>340</td>
<td>0.267*</td>
</tr>
<tr>
<td>Overall Grade Point Average</td>
<td>342</td>
<td>340</td>
<td>0.249*</td>
</tr>
<tr>
<td>Composite Score</td>
<td>207</td>
<td>205</td>
<td>0.481*</td>
</tr>
<tr>
<td>American College Test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Studies Percentile Rank</td>
<td>212</td>
<td>210</td>
<td>0.356*</td>
</tr>
<tr>
<td>American College Test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSU Composite Percentile Rank</td>
<td>212</td>
<td>210</td>
<td>0.438*</td>
</tr>
<tr>
<td>American College Test</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence

Item Analysis for, "Survey of Map and Globe Skills (Grades K - 4)"

A study of the data in Table 16 revealed that a majority of the 365 student teachers surveyed, 311 or 85.21 percent missed item category number 31, which was presented as follows: "What length of time does it take the earth to rotate the equivalent of the distance between the 90th and 105th meridian?" Item category number 22, was stated: "The earth rotates from ____ to ____." It was missed by the
### Table 16

**Item Analysis for, "Survey of Map and Globe Skills (Grades K - 4)"**

<table>
<thead>
<tr>
<th>Item*</th>
<th>Number of Subjects Missing Item</th>
<th>Percent of Subjects Missing Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38</td>
<td>10.41</td>
</tr>
<tr>
<td>2</td>
<td>46</td>
<td>12.60</td>
</tr>
<tr>
<td>3</td>
<td>22</td>
<td>6.03</td>
</tr>
<tr>
<td>4</td>
<td>106</td>
<td>29.04</td>
</tr>
<tr>
<td>5</td>
<td>72</td>
<td>19.73</td>
</tr>
<tr>
<td>6</td>
<td>85</td>
<td>23.29</td>
</tr>
<tr>
<td>7</td>
<td>97</td>
<td>25.58</td>
</tr>
<tr>
<td>8</td>
<td>82</td>
<td>22.47</td>
</tr>
<tr>
<td>9</td>
<td>34</td>
<td>9.32</td>
</tr>
<tr>
<td>10</td>
<td>114</td>
<td>31.23</td>
</tr>
<tr>
<td>11</td>
<td>13</td>
<td>3.56</td>
</tr>
<tr>
<td>12</td>
<td>87</td>
<td>23.84</td>
</tr>
<tr>
<td>13</td>
<td>71</td>
<td>19.45</td>
</tr>
<tr>
<td>14</td>
<td>24</td>
<td>6.58</td>
</tr>
<tr>
<td>15</td>
<td>7</td>
<td>1.92</td>
</tr>
<tr>
<td>16</td>
<td>52</td>
<td>14.25</td>
</tr>
<tr>
<td>17</td>
<td>99</td>
<td>27.12</td>
</tr>
<tr>
<td>18</td>
<td>261</td>
<td>71.51</td>
</tr>
<tr>
<td>19</td>
<td>199</td>
<td>54.52</td>
</tr>
<tr>
<td>20</td>
<td>7</td>
<td>1.92</td>
</tr>
<tr>
<td>Item*</td>
<td>Number of Subjects Missing Item</td>
<td>Percent of Subjects Missing Item</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>21</td>
<td>111</td>
<td>30.41</td>
</tr>
<tr>
<td>22</td>
<td>277</td>
<td>75.89</td>
</tr>
<tr>
<td>23</td>
<td>51</td>
<td>13.97</td>
</tr>
<tr>
<td>24</td>
<td>54</td>
<td>14.80</td>
</tr>
<tr>
<td>25</td>
<td>149</td>
<td>40.82</td>
</tr>
<tr>
<td>26</td>
<td>86</td>
<td>23.56</td>
</tr>
<tr>
<td>27</td>
<td>112</td>
<td>30.69</td>
</tr>
<tr>
<td>28</td>
<td>26</td>
<td>7.12</td>
</tr>
<tr>
<td>29</td>
<td>25</td>
<td>6.85</td>
</tr>
<tr>
<td>30</td>
<td>63</td>
<td>17.26</td>
</tr>
<tr>
<td>31</td>
<td>311</td>
<td>85.21</td>
</tr>
<tr>
<td>32</td>
<td>155</td>
<td>42.47</td>
</tr>
<tr>
<td>33</td>
<td>201</td>
<td>55.07</td>
</tr>
<tr>
<td>34</td>
<td>67</td>
<td>18.36</td>
</tr>
<tr>
<td>35</td>
<td>114</td>
<td>31.23</td>
</tr>
</tbody>
</table>
| Total Subjects | 365 | *See Appendix B for identification of each item
next highest number, 277 or 75.89 percent of the 365 student teachers surveyed. This data indicated that the majority of the student teachers surveyed missed items relating to the rotation of the earth.

The two item categories missed by the least number of student teachers were numbers 15 and 20 with seven student teachers or 1.92 percent of the 365 surveyed missing each item. Item category 15 was stated as follows: "Identify the following features . . . (and) . . . locate on the map: A. Waterfall, B. Swamp, C. Mountain, D. Lake." Item category 20 was presented as follows: "Identify the features that each of the following (eight) standard map symbols represents." The symbols represented the following: capital city, church, railroad, stream, bridge, airport, school, and cemetery. On item category 20, however, only 20 or 7.68 percent of the student teachers identified all eight symbols.

Thus a study of the data in Table 16 revealed that the student teachers surveyed in this study had the most trouble with item categories relating to the rotation of the earth while they had the least trouble with item categories relating to map and globe symbols and geographic features.

SUMMARY

Data tabulated in Tables 1 through 14 summarized the responses from the population relative to means and analysis of variance. The "t" tests were obtained to determine which differences among the sub-groups were significant.

The null hypothesis was accepted with respect to the following variables:
1. Number of graduates in the student teachers' high school graduating class;

2. Rank of the student teacher in that graduating class;

3. Whether or not geography courses were taken in high school;

4. Number of college geography courses completed; and

5. Degrees of subjects participation in teaching social studies in the student teaching experience.

Each variable failed the test of significance at the .05 level of confidence.

The data suggests, however, that students coming from larger high schools (501 - 600) do better on map and globe survey instruments than those from smaller high schools.

The data also seemed to indicate that subjects graduating in the upper quartile of their graduating class score higher than those graduating in the lower three-quarters of their class.

The data further showed that very few of those subjects surveyed, 25 percent, had taken high school geography courses and those having taken such courses had a slightly higher mean score, 52.52, than those not having had such courses, 52.05.

The data concerning college geography courses seemed to indicate that the more college geography courses taken (three or more) the higher the score on the survey of map and globe skills.

The data also seemed to indicate that the degrees of the subjects' participation in teaching social studies in the student teaching experience appeared to have no effect on the student teachers' score on the survey of map and globe skill knowledge.
The null hypothesis was rejected with respect to the following variables:

1. Number of high school social studies courses taken; and
2. Student teachers' perception of the status of social studies in the classroom while student teaching.

Each variable satisfied the test of significance at the .05 level of confidence.

The data further revealed that subjects having taken two or more high school social studies courses should score higher on the survey of map and globe knowledge and skills than those not having had any high school social studies courses.

The data further indicated that subjects who perceived that there was much emphasis on social studies in the classroom where they were student teaching have greater knowledge of map and globe skills than those in classrooms where social studies is perceived to have no definite place.

The data tabulated in Table 15 summarized the responses from the population relative to correlation coefficients between their scores on the survey instrument and the following academic factors:

1. LSU grade point average;
2. Overall grade point average;
3. Composite score on the American College Test;
4. Social studies percentile rank on the American College Test; and
5. LSU composite percentile rank on the American College Test.

Each factor satisfied the test of significance at the .05 level of confidence.
The data presented in Table 15 indicated that subjects with high grade point averages, high composite scores on the American College Test, and high percentile ranks on the American College Test tended to score higher on the survey instrument than those with low grade point averages, low composite American College Test scores, and low percentile ranks on the American College Test.

The data tabulated in Table 16 summarized responses from the population relative to item analysis for the, "Survey of Map and Globe Skills (Grades K - 4)."

The majority of the population in this study missed items relating to the rotation of the earth. They had the least trouble with items relating to map and globe symbols and geographic features.
Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The purposes of this study were to determine to what extent the elementary student teachers at Louisiana State University, Baton Rouge, know selected map and globe skills; and to determine whether significant relationships existed between their knowledge and certain factors of personal and educational traits. Three hundred sixty-five student teachers were surveyed during the first week of the last month of the semester that they were engaged in the student teaching experience. The study period consisted of the following semesters: Fall, 1976; Spring, 1977; Fall, 1977; and Spring, 1978.

The survey instrument consisted of two parts. The first part contained a survey instrument of map and globe skills of teachers who taught children, grades kindergarten through four. The map and globe survey items were derived from, "Survey of Map and Globe Skills (Grades K - 4)," (Garvida, 1977). The resulting eighty items were grouped into thirty-five categories. The second portion ascertained personal and educational data which included: number of graduates in the student teacher's high school graduating class; rank in that graduating class; number of social studies courses taken in high school; whether or not a high school geography course was taken; number of geography courses completed in college; student teachers' perception of the status
of social studies in the classroom while student teaching; degrees of the subjects' participation in teaching social studies in the student teaching experience; LSU grade point average; overall grade point average; composite score on the American College Test; social studies percentile rank on the American College Test; and LSU composite percentile rank on the American College Test (Appendix B).

Returns from the survey instruments and the questionnaires were computer programmed. Scores for the test items on the survey instrument were utilized for statistical analysis. Data were analyzed using the summarized means of scores within the sub-groups. Analysis of variance among personal and educational variables, with respect to a summary of the thirty-five categories of test items was used to determine student teachers' knowledge of selected map and globe skills. To determine the differences between any two uncorrelated means among personal and educational variables within the sub-groups, "t" tests were computed. Correlation coefficients were computed to ascertain the level of confidence between the academic factors of: LSU grade point average, overall grade point average, composite percentile rank on the American College Test, social studies percentile rank on the American College Test, and LSU composite percentile rank on the American College Test, and student teachers' performance on the map and globe survey instrument.

CONCLUSIONS

1. Variables not significantly related at the .05 level of confidence, to student teachers' performance on the map and globe survey instrument included:

   a. Number of graduates in the student teacher's high school graduating class;
b. Rank in that high school graduating class;
c. Whether or not a high school geography course was taken;
d. Number of college geography courses completed; and
e. Degrees of the subjects' participation in teaching social studies in the student teaching experience.

2. Variables significantly related at the .05 level of confidence, to student teachers' performance on the map and globe survey instrument included:

a. Number of high school social studies courses taken; and
b. Student teachers' perception of the status of social studies in the classroom while student teaching.

The analysis revealed such factors as the number of graduates in the student teachers' high school graduating class; the rank in that graduating class; whether or not high school geography courses were taken; the number of college geography courses completed; and the degrees of the subjects' participation in the teaching of social studies in the student teaching experience, had no significant effect on student teachers' knowledge of selected map and globe skills. The analysis also revealed that the number of high school social studies courses taken and the student teachers' perception of the status of social studies in the classroom while student teaching had a significant effect on student teachers' knowledge of selected map and globe skills.

Based on these data the assumption was made that increased map and globe knowledge and skills resulted, in part, from taking high school social studies courses and from student teaching in classrooms where there was much emphasis on social studies.
The data concerning certain academic factors revealed correlation coefficients significant at the .05 levels of confidence between student teachers' scores on the survey instrument and the following factors: LSU grade point average; overall grade point average; composite score on the American College Test; social studies percentile rank on the American College Test; and the LSU composite percentile rank on the American College Test.

3. The mean score of the total population surveyed, that of 365 elementary student teachers at Louisiana State University, Baton Rouge, was 52.18. The highest score made among the elementary student teachers surveyed was 75, while the lowest was 5.

4. The data further revealed that the majority of the student teachers had the most trouble with survey instrument item categories relating to the rotation of the earth.

The data from the study showed that the elementary student teachers at Louisiana State University, Baton Rouge, who participated in the study had a low rate of correct responses on the, "Survey of Map and Globe Skills (Grades K - 4)" especially in relation to items dealing with the rotation of the earth.

RECOMMENDATIONS

The following recommendations can be made from the results of this study:

1. Elementary student teachers should be more broadly prepared for map and globe teaching;
2. Teachers of geography courses at Louisiana State University, Baton Rouge, should consider course reorganization to include map and globe knowledge;

3. Geography courses, if instituted at the high school level, should include map and globe knowledge;

4. Additional study should be undertaken to determine if map and globe knowledge of elementary student teachers in other Louisiana universities is significantly related to such variables as number of graduates in the student teachers' high school graduating class; their rank in that high school graduating class; number of social studies courses taken in high school; whether or not high school geography courses were taken; number of college geography courses completed; degrees of the subjects' participation in teaching social studies in the student teaching experience; and the student teachers' perception of the status of social studies in the classroom while student teaching.
BIBLIOGRAPHY


APPENDIX A

Letter of Approval from the Committee on Humans and Animals as Research Subjects

Louisiana State University
Baton Rouge Campus

From: Committee on Humans and Animals as Research Subjects.
To: Vice Chancellor for Advanced Studies and Research
   David Boyd Hall

RE: Proposal of Education Student Received May 23, 1977
   Principal Investigator
   Entitled "Survey of Map and Globe Skills"

This is to certify that a quorum of the Committee on Humans and Animals as Research Subjects reviewed the above proposal. The Committee evaluated the procedures of the proposal with appropriate guidelines established for activities supported by federal funds involving as subjects humans and/or animals.

Recommendation of Committee Approved

Comments:

A review of this proposal by the Committee will be accomplished at least on an annual basis and at more frequent intervals depending on the element of risk.

Date June 10, 1977
Copy: Tom E. Arceneaux, Education Student
       R. C. Von Brock
       P. Soderbergh

Chairman, Committee on Use of Humans and Animals as Research Subjects

66
APPENDIX B

QUESTIONNAIRE OF PERSONAL AND EDUCATIONAL DATA

NAME _______________________

The number of graduates in my high school graduating class.

1. 1 to 100 ________
2. 101 to 200 ________
3. 201 to 300 ________
4. 301 to 400 ________
5. 401 to 500 ________
6. 501 to 600 ________
7. Over 600 ________

My rank in that graduating class.

1. Upper Quartile ___
2. Second Quartile ___
3. Third Quartile ___
4. Fourth Quartile ___

The number of social studies courses I studied in high school.

0. None ________
1. One ________
2. Two ________
3. Three ________
4. Four ________
5. Over Four ________
Did I take a geography course in high school?

1. Yes ________
2. No ________

The number of geography courses I have completed in college.

0. None ________
1. One ________
2. Two ________
3. Three or more ______

The status of social studies in the student teaching experience.

1. I have taught a social studies unit. ________
2. I am scheduled to teach a social studies unit. ________
3. There are no plans for me to teach a unit. ________

The status of social studies in the classroom I student teach.

1. There is much emphasis on social studies. ________
2. There is some emphasis on social studies. ________
3. There is little emphasis on social studies. ________
4. No definite place is given to social studies. ________
APPENDIX C

SURVEY OF MAP AND GLOBE SKILLS (GRADES K-4)

1. In the map below (map #1), assume that you live in the town of Owens, along the river. To reach the source of the river you would travel

(1) __________________ stream.

To reach the mouth of the river you would travel

(2) __________________ stream.

MAP #1

2. Look at the same map (map #1), if the river shown is a typical stream, will the volume of water flow be greater at location H or at location J? Write H or J.

(3) ____________

3. Using the same map (map #1), list the directions in which you would move in following the route from Point A to Point G (dashed line).

From A, (4) ______________ to B, (5) ______________

to C, (6) ______________ to D, (7) ______________

to E, (8) ______________ to F, (9) ______________ to G.

4. Name the intermediate directions:
   (10) __________________________
   (11) __________________________
   (12) __________________________
   (13) __________________________

5. On the picture of the globe shown, draw a north-south arrow. (14)

6. Place the north arrow on each of these maps:
   (15) (16) (17)

7. On the map of North America (map #3, page 6), place a star in Illinois and a dot on the location of Chicago. (18) (19)

8. Where is the inset on the map of North America (map #3, page 6)? (a) Upper right, (b) Lower right, (c) Upper left, (d) Lower left.
   (20) __________________________
MAP # 3
9. Using the map of North America (map #3, page 6), identify the numbered physical features:

(21) 1. _____________________________
(22) 2. _____________________________
(23) 3. _____________________________
(24) 4. _____________________________

Also, outline the boundaries of the United States.

(25)

10. Using the same map (map #3, page 6), tell approximately how far is it in miles between the point marked 1 and the point marked 4. (a) 400 miles, (b) 800 miles, (c) 1200 miles, (d) 1600 miles.

(26) __________________________

11. Identify the continents, oceans, major islands, and the equator on the world map (map #4, page 8). Fill in the numbered blanks on the map. (27 - 33)

12. Land size is distorted least at places represented on which part of map # 4, page 8? (a) Near the North Pole, (b) Near the South Pole, (c) Near the Equator.

(34) __________________________

13. Using the same map (map #4, page 8), write the name given to the lines that run from the top to the bottom of the map.

(35) __________________________

14. On the map below (map #5), shade in the land areas.

(36) (37)  

MAP # 5
15. Identify the following features on map #6 below. Place the corresponding letter in the appropriate location on the map. A. Waterfall; B. Swamp; C. Mountains; D. Lake (38 - 41)

MAP # 6

16. What is the elevation of Point X on map #7 below?

(42) __________________________

MAP # 7

17. On the same map above (map #7), Point A is (43) _______ Point B.

18. The distance between the Winfield's house (W) and the Jackson's house (J) (map #8) represents (44) __________ on the earth's surface.

MAP # 8
19. If it took four minutes to walk one block, how long would it take to walk the shortest distance from the Winfield's house to the Cardo's house (C)? Use map # 8, page 9.

(45) _______________________

20. Identify the features that each of the following standard map symbols represents.

(46) ________________________  (50) ________________________
(47) ________________________  (51) ________________________
(48) ________________________  (52) ________________________
(49) ________________________  (53) ________________________

21. Assume that you are standing outside this room. It is 9:00 a.m. and your shadow is directly in front of you.

What is the direction to your right? (54) ________________

To your left? (55) ________________

Behind you? (56) ________________

22. The earth rotates from (57) ________________ to (58) ________________

23. Which movement of the earth causes day and night? Write in either rotation or revolution.

(59) ________________________

24. On a sunny day and when standard time is used, a person's shadow is shortest at what time of the day?

(60) ________________________

25. When using a colored map on which the International Color Scheme is utilized, which color represents the highest elevation? (a) green, (b) red, (c) blue.

(61) ________________________
26. Use map # 9 below. What is the relative location of Evanston? (62) (63) 

27. Use the same map above (map #9). What is the location of Niles? (64) 

28. Which is the larger of the two highways shown on the map above (map #9)? Write the number of the larger highway. (65) 

29. Identify the hemispheres: (66) (67) (68) (69)
30. Use the two pictures of the globe below.
In which picture of the globe would people living in Chicago wear light clothing and go swimming?

(70) ________________

In which picture would people living in Argentina carry on these activities?

(71) ________________

In which picture would people living in Central Africa do these things?

(72) ________________

31. What length of time does it take the earth to rotate the equivalent of the distance between the 90th and 105th meridian?

(73) ________________

32. On the map of the neighborhood (map #10, page 13), draw the map symbol for a school at location K-3.
33. On the picture of the globe shown below, write the names of the lettered parallels.

![Diagram of a globe with lettered parallels: a, b, c, d.]

(75) a. __________________________
(76) b. __________________________
(77) c. __________________________
(78) d. __________________________

34. Which lines on the picture of the globe shown above are equal in length, those running north and south or those running east and west? Write in either N-S or E-W.

(79) __________________________

35. Using the same picture of the globe shown above, along which parallels are the time zones of greatest distance in miles? (a) Location a, (b) Location c, (c) Location d.

(80) __________________________
## Answer Key

<table>
<thead>
<tr>
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<th>Answer</th>
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<tbody>
<tr>
<td>1</td>
<td>Up</td>
</tr>
<tr>
<td>2</td>
<td>Down</td>
</tr>
<tr>
<td>3</td>
<td>J</td>
</tr>
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<tr>
<td>14</td>
<td>Arrow must be parallel to earth's axis</td>
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<tr>
<td>17</td>
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<td>19</td>
<td>Chicago (dot)</td>
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<tr>
<td>20</td>
<td>D (Lower left)</td>
</tr>
<tr>
<td>21</td>
<td>Peninsula (Baja California)</td>
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<tr>
<td>22</td>
<td>Strait (Bering Strait)</td>
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<tr>
<td>23</td>
<td>Bay (Hudson Bay)</td>
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<td>24</td>
<td>Delta (Mississippi Delta or mouth of Mississippi River)</td>
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### Answer Key

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<td>Outline must include the 48 contiguous states, Alaska, and Hawaii</td>
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<td>26</td>
<td>C (1200 miles)</td>
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<td>27</td>
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<td>28</td>
<td>Eurasia (Asia)</td>
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<td>Indian Ocean</td>
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<tr>
<td>32</td>
<td>Atlantic Ocean</td>
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<td>33</td>
<td>The equator is at 0° latitude</td>
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<tr>
<td>34</td>
<td>C (Near the equator)</td>
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<td>Meridians (Longitude)</td>
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<td>The land area is the west coast of Africa</td>
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<td>37</td>
<td>The square next to &quot;land&quot; in the legend must be shaded</td>
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<td>38</td>
<td>A. Waterfall</td>
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<td>B. Swamp</td>
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<td>40</td>
<td>C. Mountains</td>
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<td>41</td>
<td>D. Lake</td>
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<td>Between 500' and 1000'</td>
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<td>43</td>
<td>Above or higher than</td>
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<tr>
<td>44</td>
<td>Five blocks</td>
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<tr>
<td>45</td>
<td>Twenty minutes</td>
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<td>Capital city</td>
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### Answer Key

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<td>57</td>
<td>Rotation</td>
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<td>Mid-day or Noon</td>
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<td>Must include two facts about the relationship of Evanston's geographical setting to other places</td>
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<td>C - 3</td>
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<td>294</td>
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<tr>
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<td>Southern, Eastern, Western, Northern</td>
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<td>#2, #1, #1 and #2, One hour</td>
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<td>The symbol of a school must be drawn at location K - 3</td>
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### Answer Key

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<tr>
<td>77</td>
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<td>78</td>
<td>Tropic of Cancer</td>
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<tr>
<td>79</td>
<td>N - S</td>
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<td>C (Location d)</td>
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<td>Raw score</td>
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<td>Number in high school graduating class</td>
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<td>40</td>
<td>Number of high school social studies courses</td>
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<td>Whether or not high school geography courses taken</td>
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<td>Degrees of subjects' participation in the teaching of social studies in the student teaching experience</td>
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<td>LSU composite percentile rank on the American College Test</td>
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<tr>
<td>56 through 57</td>
<td>Year</td>
</tr>
<tr>
<td>58</td>
<td>Fall Semester - 1; Spring Semester - 2</td>
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VITA

Tom E. Arceneaux, son of George and Louise Arceneaux, was born in Houma, Louisiana, January 30, 1936. He is married to the former Mary Kathleen Brian of Baton Rouge, Louisiana. He completed his elementary education in Louisiana and his secondary education in Florida. He graduated with a Bachelor of Science in Agriculture from the University of Southwestern Louisiana, Lafayette, Louisiana, in 1960. He received his Bachelor of Science in Elementary Education from Louisiana State University, Baton Rouge, Louisiana, in 1965. He was awarded a Master of Education Degree in Supervision from Louisiana State University, Baton Rouge, Louisiana, in 1968.

His professional experiences included thirteen years in the elementary schools of Louisiana and Florida. In 1970 he joined the West Baton Rouge Parish School System where at the time of the present research he was employed as a fourth grade teacher at Chamberlin Elementary School. He has served as Vice-President and President of the local unit of the Louisiana Teachers' Association and has served on state committees of that association. He also served as Assistant Director of the Region VII Louisiana Social Studies Fair. At the time of this investigation he served as State President of the Elementary Language Arts Section of the Louisiana Association of Educators.
Candidate: Tom Eugene Arceneaux

Major Field: Education

Title of Thesis: Knowledge of Selected Map and Globe Skills as Related to Certain Characteristics of Elementary Student Teachers

Approved:

[Signature]
Major Professor and Chairman

[Signature]
Dean of the Graduate School

EXAMINING COMMITTEE:

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Richard A. Mussewche

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[Signature]
E. L. Thurston

Date of Examination:

November 10, 1978