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Survey of the relative importance which fifth and sixth-grade teachers place on the teaching of map and globe skills

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Daly, E.-A., B.
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Thesis

SURVEY OF THE RELATIVE IMPORTANCE WHICH FIFTH
AND SIXTH-GRADE TEACHERS PLACE ON THE
TEACHING OF MAP AND GLOBE SKILLS

Submitted by

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(B.A. in History, Suffolk University, 1954)

In Partial Fulfillment of Requirements for
the Degree of Master of Education

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CHAPTER I

INTRODUCTION

With each passing year the world seems to grow smaller because of new marvels and advances in transportation and communication. Countries which seemed very remote a few years ago now seem like our close neighbors. Despite the "shrinking" earth, the peoples of the world do not seem to understand each others' way of life any better than they did a generation ago. Perhaps if we knew more about the geography of other lands, we would better understand our world neighbors, as man's way of life is governed greatly by the geography of the area in which he lives. Many think as did George D. Stevens that "the basic foundation upon which world understanding is to be built can be realized in the study of geography."¹ One of the most important aspects of geography is the ability to read and to interpret globes and maps. Many geographers have expressed their views concerning which map skills should be taught and with what priority. In no instance has a study been made which surveyed teachers' opinions in this area.

THE PROBLEM

Statement of the problem. It was the purpose of this study to determine the relative importance placed on the teaching of certain map

¹George D. Stevens, "Geography--A Path to World Understanding," Journal of Geography, 54:359, October, 1955.

and globe skills by fifth- and sixth-grade teachers. Teachers of these particular grades were questioned, because it is in these elementary grades that a great deal of effort is exerted to develop these skills. Since teachers differ in their methods, a second purpose of the study was to obtain information concerning current methods and materials used in teaching map and globe skills.

Importance of the study. Many people interested in the fields of education and geography have stressed the importance of teaching map skills to children. "Students need to know how to interpret maps in order to understand international affairs,"² said Trussell in a recent article concerning student-made maps. James believes that "the development of skill in reading and understanding the complex symbolism of the map is the primary responsibility of geography."³ However, few writers are active elementary school teachers actually implementing their ideas and beliefs in today's classrooms. Despite the many books, articles, manuals, and curriculum guides written on the subject, it is the classroom teacher who decides what skills will be taught, by what methods, and how much emphasis will be placed on each. As Chase said, "In the final analysis, what takes place in the classroom each hour

²M. E. Trussell, "Student-made Maps Aid World Study," California Teachers' Association Journal, 53:17, December, 1957.

³Preston E. James, "Developments in the Field of Geography and Their Implications for the Geography Curriculum," Journal of Geography, 46:224, September, 1947.

depends upon the individual teacher."⁴

There has not been a previous study to survey teachers' opinions on the relative importance of teaching particular map and globe skills. The results of this study show the degree of emphasis placed on these skills by one hundred fifth-grade and one hundred sixth-grade teachers. An adjunct study has revealed trends in methods and usage of materials in teaching map and globe skills.

⁴Opinion expressed by W. Linwood Chase, Lecture on Elementary School Curriculum, Boston University, School of Education, Fall Semester, 1959.

CHAPTER II

REVIEW OF THE LITERATURE

Much has been written in regard to the importance of geography and of teaching map and globe skills with gradations in the teaching of these particular skills.

THE IMPORTANCE OF GEOGRAPHY

With the advent of World War II there was an increasing concern by educators that geography was not emphasized enough in American schools. Our geographical ignorance was viewed with considerable alarm during the past war, and we came to realize that geographical education was absolutely necessary at that time.¹ In the early days of the conflict John W. Studebaker, then Commissioner of Education, said:

Now is the time to begin to really teach the American people geography. Apart from rather backward nations we are more illiterate geographically than any other civilized nation I know.²

However, when peace came again, many educators were content to "deactivate" destroyers and geography alike. "What many of our educators are refusing to face is that it [geographical education] is even more essential in peace time," said two writers in School and Society.³

¹George T. Renner and Paul F. Griffin, "Geographic Education for Survival," School and Society, 70:81, August, 1949.

²Opinion expressed by John W. Studebaker at The National Conference of College and University Presidents, January 3, 1942.

³Renner and Griffin, op. cit., p. 81.

In the past few years there has been an even greater need for more emphasis on geography in our schools. With each passing hour our world grows smaller and the need to understand the peoples of the world grows larger. Distant lands and their people have suddenly become very near to us, and the problems of individual nations concern the whole world.⁴ We cannot hope to aid in the solving of international problems if we are ignorant of other people and their countries. An article in the Journal of Geography stated:

Knowledge of the natural setting in which man and nations function and the part which natural factors play in the interpretation of human affairs are critical elements in the solution of many social problems.⁵

Renner and Griffin expressed their convictions on the same subject when they wrote:

The fate of civilization, even the survival of mankind itself rests upon the race between education and catastrophe. We need enough knowledge about the environment of the earth to enable man to make successful adjustment to the forces and resources of nature.⁶

Our educational system has been going through a period of curriculum upheaval and reversal. This change has come about because our world is becoming increasingly scientific-minded and the greatest stress in education is now on the physical sciences and not on the social sciences. Since each school day contains approximately the same number

⁴Stevens, op. cit., p. 359.

⁵Geography in the Elementary and Secondary Curricula," Journal of Geography, 54:204, April, 1955.

⁶Renner and Griffin, op. cit., p. 86.

of hours as it did twenty years ago, some curriculum areas are being de-emphasized or even excluded in order to make more time available for the study of science, mathematics, and other similar subjects. It seems that the social sciences are being neglected, as it is felt that they will not "save" our world for democracy. Fortunately, many believe as does James that:

A democracy survives only on the basis of an educated electorate; when a democratic peoples must adopt basic policies in a world of international contacts such a people must be able to think geographically or perish.⁷

Geography is a very vital science to all mankind, and it is vital in the curriculum. In education it is geography alone that helps our future citizens to gain a working knowledge of how to obtain geographic information through map interpretation.⁸ This training has been partially ignored in many schools with the plea that the subject matter is too difficult. James feels that "this is especially true with regard to training in the understanding of maps. It is time," he said, "that the hard core of geography is returned to social studies."⁹

"Geography is education for survival; the time to acquire this knowledge is during school years and those to whom this training should

⁷James, op. cit., p. 221.

⁸Grace E. Koerner, "The Vital Role and Scope of Geography," Journal of Geography, 56:178, April, 1957.

⁹Preston E. James, "The Hard Core of Geoggraphy," New Viewpoints in Geography, Twenty-ninth Yearbook of the National Council for Social Studies (Washington, D. C.: National Council for Social Studies, 1959), p. 1.

be given are the American students."¹⁰ Therefore, the key to many world problems which the next generation must solve in order to survive lies partially in an understanding of the various facets which compose geography. This science must be given a prominent place in our school program so that people may make progress toward the conquest of many political, economic, and social problems.¹¹

THE IMPORTANCE OF TEACHING MAP AND GLOBE SKILLS

The criticism is often made that proficiency in using maps and globes is of little use to children and adults. Many writers have pointed out why it is important to be well versed in the handling and interpreting of these basic tools of the cartographer and the geographer.

Many times it is possible to gain much information quickly and more accurately from a map than from any other source. Whipple said:

Maps and globes speak a fascinating language of their own. By means of dots, circles, stars, shadings, colors, lines and other devices, they disclose geographic data that would require volumes to record in books.¹²

Often children could obtain much information not given in the text if they were able to read maps correctly, easily, and with assurance. If they are unfamiliar with map interpretation, children tend to ignore

¹⁰Elizabeth Hoffman, "Is It Essential for the American Student to Be Geographically Informed?" Journal of Geography, 53:150, April, 1954.

¹¹Stevens, op. cit., p. 362.

¹²Gertrude Whipple, "Language of Maps and Globes," National Education Association Journal, 48:63, November, 1959.

maps, and they are not able to glean the volume of interesting facts that some of their more skilled contemporaries can gather. Often the basic geographical facts about a country are best learned directly from a map. Geike has said, "The fundamental conceptions of the geography of a country should be built up from that data furnished by maps rather than from text books."¹³

Children seeking the solution to social studies problems will almost always find it helpful and necessary to consult a map or globe. "Every teacher can find many instances in which maps will help improve the learning that takes place in his classes."¹⁴ This ability to read maps can also be very helpful in many sub-areas outside of the field of pure geography.

Kohn ably listed the functions of maps as tools of instruction when he said:

1. They show the location and arrangement of things, both cultural and natural, on the face of the earth.
2. They are a means of expressing the associations which man has established with the land.
3. They are a means of plotting phenomena so that their inter-spatial relationships may be recognized readily.
4. They enable the reader to grasp all the essential traits of the region.
5. They serve as a source of ideas concerning the social, political, and economic effects of the distribution of phenomena.¹⁵

¹³Archibald Geike, The Teaching of Geography (New York: The Macmillan Company, 1898), p. 250.

¹⁴J. Wesley Crum, "Use of Maps and Globes," Nation's Schools, 56:94, October, 1955.

¹⁵Clyde Kohn, "Maps as Instructional Aids in Social Studies," Audio-Visual Materials and Methods, Eighteenth Yearbook of the National Council for Social Studies (Washington, D. C.: National Council for Social Studies, 1947), p. 122.

It can easily be seen that maps have many varied functions. To understand the modern world without being able to interpret maps is impossible. As James said:

The basic concepts of geography--of man on earth--are all dependent on an understanding of the significance of differences from place to place; without an ability to read and understand the symbolism of the map, such differences can never really be used as a part of the thought processes.¹⁶

Many educators and laymen have agreed that maps are excellent instructional aids. However, it is not enough for a teacher to expose children to a great many maps and globes. "Correct concepts in globe and map reading should not be overlooked. The language of globes and maps must be understood if they become effective as tools of learning."¹⁷

In the elementary school a great deal of time is spent giving reading instruction, with the children reading from books graded to their reading ability. No one expects a child to pick up a book and suddenly read it with no instruction. Too many teachers expect pupils to read complicated maps with little or no prior instruction. "It is no wonder that Americans have grown up with little interest in maps or ability to read them."¹⁸ According to James,

When a map is placed before a student, we must not assume any understanding of its symbols or any ability to read its message. The approach to the development of map reading skills

¹⁶James, op. cit., p. 226.

¹⁷Annice Davis Elkins, "The Problems of Reading Geography," Education, 77:39, September, 1956.

¹⁸Kohn, op. cit., p. 128.

must come step by step, just as the reading of words and sentences is taught.¹⁹

Preston²⁰ and Shryock²¹ also wrote that maps and globes are useful to adults and pupils alike only if they are able to interpret them. Prior instruction must be given.

It was interesting to note that the majority of people who failed to pass the 1960 test for census takers, did so because of the map-reading questions. The test consisted of thirty questions on vocabulary and reading comprehension and sixteen questions on map-reading which required the interpretation of two maps.²²

The interpreting of maps can be difficult or impossible if a person has not had sufficient training. Often a pupil with inadequate skills will misread maps. This results in the child's receiving false impressions and ideas about the world and its people. "Children need to learn how to read maps before they read maps to learn."²³

Occasionally teachers believe that they are giving service to map skills instruction by covering their classroom walls with many different maps and placing a globe on the corner table. But maps and globes must be used and studied to be of worth to students. James was

¹⁹James, op. cit., p. 226.

²⁰Ralph C. Preston, Teaching Social Studies in the Elementary Schools (New York: Rinehart and Company, 1958), p. 268.

²¹Clara Shryock, "Gradations in Map Learning," Journal of Geography, 38:181, May, 1939.

²²News item in The New York Times, March 27, 1960.

²³Kohn, op. cit., p. 127.

most explicit on this point when he remarked:

If children are to develop real map-reading skill, it is essential that maps should be used repeatedly. Maps in the classroom should not be left hanging on the wall like pictures of Abraham Lincoln, but should be pointed to and studied again and again.²⁴

Many educators feel there is a great lack of instruction in skills in our present-day American schools. Those most neglected are geographic skills, particularly map reading.²⁵ "The fact remains that more often than not maps are not taught at all, or if they are taught, the teaching is not done effectively."²⁶

One of the oldest visual aids to education is a map or globe. "Maps are the easiest sources of visual aids."²⁷ They are readily accessible to children in their social studies, geography, and history textbooks, in reference books, in periodicals, and within the classroom itself. If the child is well educated in the ways of maps, "they help children to understand the world in its historical and geographical setting and the position of our nation in world affairs."²⁸

²⁴James, op. cit., p. 226.

²⁵L. D. Wagner, "Measuring the Map-reading Ability of Sixth Grade Children," Elementary School Journal, 53:343, February, 1953; M. P. Douglass and Paul Hanna, "A Guide to Geographic Content in Social Studies," Education, 77:17, September, 1956; and Elaine Forsyth, "Map Reading Series," Journal of Geography, 42:249, October, 1943.

²⁶James, op. cit., p. 224.

²⁷Anne Kovach, "Maps," Grade Teacher, 72:118, September, 1954.

²⁸Katherine B. Stains, "Map Distances," Grade Teacher, 77:94, January, 1960.

Some difficulty has arisen because, under the guise of teaching map skills, some teachers have stressed the location of places on maps and not required children to interpret. The following comment was made by Hanson in this regard:

A person should not be expected to know the location of hundreds of places. Instead, he should use map skills. . . . He should develop map skills instead of trying to overload his memory.²⁹

According to Stains, "A map is not something to be taught for its own sake. It is to be used as a vehicle to convey facts and understandings."³⁰ The words of Odell sum up how important it is for map and globe skills to be taught:

In the many different types and styles of globes and maps, for many years the teachers of geography and history, especially, have had available the basic tools with which to 'open' the students' understanding and to assist them to 'see' what they are doing.³¹

GRADATIONS IN THE TEACHING OF MAP AND GLOBE SKILLS

Most educators say that map and globe reading skills must be taught in a systematic progression with the instruction spaced from

²⁹Raus M. Hanson, "Locating Places Is a Skill," School Science and Mathematics, 53:312, April, 1953.

³⁰Stains, op. cit., p. 94.

³¹Clarence B. Odell, "The Use of Maps, Globes and Pictures in the Classroom," New Viewpoints in Geography, Twenty-ninth Yearbook of the National Council for Social Studies (Washington, D. C.: National Council for Social Studies, 1959), p. 200.

year to year.³² Kohn had this to say on the subject:

Map-reading skills cannot be taught successfully apart from the on-going activities of the classroom. It is desirable to teach map-reading skills in their proper sequence at the proper time.³³

An author in School Science and Mathematics said:

Many schools nowadays agree that map reading training should present a step-by-step development carefully suited to the learning ability and interests of children at every step. Even at the first grade a beginning can be made. Gradual, meaningful training is essential if people are to develop enough skill in map reading to use it with understanding thru life.³⁴

Although educators agree that there should be systematic progression of teaching map skills, they differ as to the order of teaching the various skills. There is also a difference of opinion about which ones should be stressed. Whipple and James, two educators particularly interested in this area of the curriculum, said that the following should be included in teaching the skills in question:

1. promoting readiness for understanding globes and maps.
2. accustoming children to appearance of the globe as viewed from various positions and providing them with reference points.
3. developing the concept of what a map is.
4. giving meaning to common map symbols.

³²Katherine Morse, "A Systematic Progression of Social Studies Skills for the Interpretation of Maps and Globes in Grade Four" (unpublished Master's thesis, Boston University, School of Education, Boston, 1956), p. 1.

³³Clyde F. Kohn, "It's Wise to Build Map-reading Skills One Step at a Time," National Education Association Journal, 42:488, November, 1953.

³⁴"Where to Begin Teaching Map Skills," School Science and Mathematics, 42:859, December, 1942.

5. teaching the measuring of latitude.
6. teaching the measuring of longitude.
7. leading children to use maps of all kinds.³⁵

Kohn, an educator who has written extensively on this subject, said that the proficiency with which a person reads a map rests upon the ability to:

1. orient the map and note directions
2. recognize the scale of a map and compute distances
3. locate places on maps and globes by means of a grid system
4. recognize and express relative locations
5. read symbols
6. correlate patterns that appear on maps and make inferences concerning the association of people and things in particular areas.³⁶

Whipple listed the map skills that should be taught in the elementary school, grades three through six, as follows:

Map reading skills for grades III and IV. Child can:

- A. Show that the earth may be divided into hemispheres in many ways.
- B. Recognize the similarity between an area first introduced on the globe and the same area shown on a map.
- C. Locate the cardinal directions on simple maps; also the in-between direction.
- D. Locate and name the continents.
- E. Identify the three big oceans, Atlantic, Pacific, and Indian.
- F. Locate continents, islands, and oceans on the globe with the reference to the equator (e.g., north of it, south of it, or partly north and partly south).³⁷

³⁵Gertrude Whipple and Preston E. James, "Instructing Pupils in Map Reading," Social Education, 11:205, May, 1947.

³⁶Kohn, op. cit., p. 488.

³⁷Gertrude Whipple, "Geography in the Elementary Social Studies Program: Concepts, Generalizations, and Skills to Be Developed," New Viewpoints in Geography, Twenty-ninth Yearbook of the National Council for Social Studies (Washington, D. C.: National Council for Social Studies, 1959), p. 124.

Map reading skills for grades IV and V. The child:

- A. Has the habit of interpreting the map key before trying to read the map, interprets correctly the shadings, colors, and symbols on the map he is expected to use.
- B. Tells accurately the direction of one place from another.
- C. Makes fairly accurate comparison of the size of regions shown on the same map or on different maps drawn to the same scale.
- D. Determines from an elevation map the direction in which the river flows.
- E. Locates easily the Arctic Circle, Antarctic Circle, Tropic of Cancer, and the Tropic of Capricorn.
- F. Identifies natural and cultural features represented on a map; describes them to the extent possible from the map data (e.g., mountains, hills, plains, rivers, railroad lines, forests, cities, coastlines, states).
- G. Estimates distances between places by using the scale of miles (e.g., uses ruler on a map, piece of string on a globe); recognizes that the scale is not accurate in all directions of the map.³⁸

Map reading skills for grades V and VI. The child:

- A. Identifies on a map isthmuses, gulfs, straits, and bays.
- B. Interprets abbreviations commonly found on maps.
- C. Traces the course of a river from its source to its mouth; derives from the map facts about its direction and the neighboring land.
- D. Locates a place as being in the low, middle or high latitudes.
- E. Consults two or more maps to gather information about the same area.
- F. Compares text discrepancies with the representation of the ideas on an accompanying map; supplements the text with ideas obtained from the map.³⁹

Last year a new handbook was published to aid instructors in teaching map and globe usage. A graded program for teaching maps and globe skills has been presented in this handbook. Since this teaching aid will probably be used and consulted by many teachers, it was noted

³⁸Whipple, op. cit., p. 129.

³⁹Ibid., p. 136.

that the author listed the following skills (factual concepts that were listed are deleted here) to be presented in what is called the Beginner's Program, Grade 4:

1. Learning directions on a globe or map.
2. Learning and using map symbols.
3. Using simple map and globe scales.
4. Learning meaning of color on relief maps.⁴⁰

The Intermediate Program--Grades 5 and 6--listed the following skills:

1. Learning directions on maps--any projection.
2. Learning uses of map legends.
3. Learning how to find and use latitude [grade 5].
4. Learning how to find and use longitude [grade 6].
5. Learning to compare maps.
6. Learning to interpret color on maps.
7. Learning about the state from a map.
8. Using maps to understand historical factors.⁴¹

Most educators agreed that formal instruction in map skills should start in the fourth grade, with a few very basic concepts and skills taught in prior grades. It was interesting to note that such geographical instruction also begins in the fourth grade in Russia.⁴²

Chace⁴³ and Whipple and James⁴⁴ agreed that by the end of the

⁴⁰Ruby Harris, Rand McNally Handbook of Map and Globe Usage (New York: Rand McNally and Company, 1959), p. 2.

⁴¹Ibid., p. 3.

⁴²Chauncy D. Harris, "The Teaching of Geography in the Soviet Union," New Viewpoints in Geography, Twenty-ninth Yearbook of the National Council for Social Studies (Washington, D. C.: National Council for Social Studies, 1959), p. 250.

⁴³Harriett Chace, "Developing Map Skills in Elementary Schools," Social Education, 19:312, November, 1955.

⁴⁴Whipple and James, op. cit., p. 205.

sixth grade most pupils should be able to read, understand, and interpret maps of many kinds using symbols and keys, and several different projections. They should be able to use maps as well as they use textbooks.

Kohn said:

By the time the child has completed the intermediate grades, he should have oriented himself to orient maps and to read directions from both large and small scale maps. Having gained these skills, he will find maps have a real practical value for him and will be encouraged to use them in his everyday life.⁴⁵

An experiment was conducted by Chace in several Cape Cod schools to discover what skills a sixth grade group of children could develop to a rather high degree of proficiency. The outcome of this experiment indicated that the following skills could be successfully developed:

1. Use of map indexes in various references.
2. Interpretation of map scales and ability to draw maps to scale.
3. Drawing of symbols and keys on many types of maps.
4. Interpretation of the following types of maps: political, weather, relief, route, historical, and special types.
5. Filling in of outline maps from memory.
6. Ability to use a globe to determine distances, locate places and compare time.
7. Use of various map projections.
8. Use of reference books.⁴⁶

It can be seen that educators differ slightly on the grade placement and emphasis placed on the different map and globe skills. However, an overwhelming majority stated that a hit-or-miss type of

⁴⁵Clyde Kohn, "It's Wise to Build Map-reading Skills One Step at a Time," National Education Journal, 42:489, November, 1953.

⁴⁶Harriett Chace, "Map Skills Developed in Grade Six," Social Education, 20:61, February, 1956.

approach to the teaching of these skills would not guarantee the desired results. If we are to develop skills that can be used with understanding throughout the pupils' present and adult life, the elementary school must provide for a definite progression of skills instruction. "To develop facility in this art [map reading] we must carefully plan the over-all curriculum and the step-by-step development of the program."⁴⁷

SPECIFIC SKILLS AND THEIR TEACHING

Globes

Globes should be introduced prior to maps, agreed many educators. One reason for this is that it is particularly hard for primary teachers to present representations of the earth's surface in a manner simple enough for young children to understand fully. It is generally agreed that the globe is the best geographic tool that can be used to teach directions and to prepare the primary child for map reading.⁴⁸ "Globes are the easiest of all maps to understand," according to Kovach.⁴⁹

Whipple and James have said:

⁴⁷Hazel C. Davis, "What Can Elementary School Pupils Learn from Maps?" Social Education, 12:318, November, 1948.

⁴⁸Dolyne Robertson, "The Globe as a Geography Tool," Journal of Geography, 55:35, January, 1956; Zoe A. Thralls, "The Globe is an Essential Geography Tool at Every Level," National Association Journal, 46:30, January, 1957.

⁴⁹Kovach, op. cit.

By the end of Grade 4, those who are making normal progress should be so familiar with the appearance of the globe, as viewed from all possible positions, that they are ready for separate instruction in the use of maps.⁵⁰

Why were so many writers enthusiastic about the merits of teaching children the globe before teaching them how to use a map? "The globe is the basic tool of geography," said Whipple, "as it represents the earth's surface the most accurately."⁵¹ By their very nature, flat maps of all types are distortions of the true proportions of the earth. The globe is the tool which develops an understanding of the earth as a sphere, of global relationships, and presents a true perspective of the earth.⁵² "A globe is an accurate model of the earth and is the only possible medium of showing geographical relationships truly."⁵³

Globes are easier for the novice to understand than maps because the scale is constant on a globe. This is not true with flat maps of large land masses or of the world. However, one major handicap to the use of globes is that their size is limited, whereas it is possible to have very large-scale flat maps which are relatively inexpensive and easy to handle.⁵⁴

⁵⁰Whipple and James, op. cit.

⁵¹Gertrude Whipple, "Language of Maps and Globes," National Education Association Journal, 48:63, November, 1959.

⁵²Thralls, op. cit., p. 30; Thomas F. Barton, "Teaching Geography with Globes," Education, 65:212, January, 1945.

⁵³Wellman Chamberlain, The Round Earth on Flat Paper (Washington, D. C.: National Geographic Society, 1930), p. 52.

⁵⁴Ibid.

Many teachers have globes in their classrooms, but the students are seldom permitted to use them. They are merely ornamentation in many cases. Barton said, "Pupils should be permitted to handle the globe and use it; otherwise, it shouldn't be in the classroom at all."⁵⁵

With all the present discussion of the relative merits of the Soviet system of education, it was an interesting side note to read that in Russia students are taught to read maps before they become familiar with globes.⁵⁶ The reason for this was not stated.

Hence many feel globe study should precede map study in the elementary school by reason of the globe's simplicity of comprehension and its accuracy. This does not preclude maps from being used. "It is important that a variety of maps and globes be used to answer questions that arise in the daily work of the classroom."⁵⁷

Pupil-made Maps

Most educators' opinions coincided on the question of the value of having pupils make maps. Svec wrote that children will learn by doing; therefore, by making original maps, children will better understand what things maps can tell us.⁵⁸ "Students do not learn to read

⁵⁵Barton, op. cit., p. 213.

⁵⁶Harris, op. cit., p. 250.

⁵⁷Whipple, op. cit., p. 64.

⁵⁸M. Melvina Svec, "Three Lessons in Mapping," Journal of Geography, 53:60, May, 1954.

maps with skill unless they also are given opportunities to make maps."⁵⁹ Wesley also stressed the importance of pupils constructing maps. He pointed out that there were limitless possibilities for making maps showing many different facts and concepts.⁶⁰

Since such a myriad of information can be pictured on maps of different varieties, pupils can often make maps which would be impossible to buy or obtain otherwise. Woodruff said:

Teachers have found great additional values in having pupils participate in the making of maps, tailored in their own workshops to fit their own particular, immediate needs.⁶¹

Some teachers feel that if they use commercial maps, especially outline maps, it is not worth while or advisable for students to make maps. Trussell said, "Supplementary to commercially produced tools and equally important are student-made maps."⁶² "If a child learns early enough how to make a map, his inborn curiosity regarding what is over the horizon may be preserved and his life enriched thereby."⁶³ Woodruff commented on the additional values of map making thusly:

⁵⁹Clyde F. Kohn, "Skills in Social Studies, Twenty-fourth Yearbook of the National Council for Social Studies (Washington, D. C.: National Council for Social Studies, 1953), p. 171.

⁶⁰Edgar Wesley, Teaching Social Studies in the Elementary School (Boston: D. C. Heath and Company, 1952), p. 368.

⁶¹C. H. Woodruff, "Caught Mapping: Students Learn by Making Their Own," Clearing House, 24:46, September, 1949.

⁶²Trussell, op. cit., p. 17.

⁶³Preston E. James, "The Hard Core of Geography," New Viewpoints in Geography, Twenty-ninth Yearbook of the National Council for Social Studies (Washington, D. C.: National Council for Social Studies, 1959), p. 8.

Appreciation of good maps and globes, of the art and workmanship involved, of the variety of projections available, and of their worth to many persons in many occupations is another value often derived from map-making by pupils. Knowledge of geography is of course expanded. Work habits are improved along with social attitudes.⁶⁴

Latitude and Longitude

Testing done by Littlefield showed a great lack of pupils' knowledge concerning latitude and longitude.⁶⁵ A study by Dooley set up the basic geographic concepts for inclusion in school curricula for grades 1-12. The following, having to do with the skills in question, were judged by people in the field to be "very important":

1. Parallels of latitude are imaginary circles parallel to the equator. They measure distance north and south of the equator expressed in degrees.
2. One degree of latitude everywhere equals seventy miles.⁶⁶

Educators have had some difficulty agreeing on the grade level at which latitude and longitude should be taught. Whipple and James wrote that latitude should be taught in the sixth grade, at which time children should be ready for this new skill. They were also of the opinion that longitude is less essential than latitude and should be

⁶⁴Woodruff, op. cit., p. 46.

⁶⁵Harold W. Littlefield, "The Construction and Evaluation of a Diagnostic Test on Map Skills for Grades Six, Seven, and Eight" (Unpublished Master's thesis, Boston University, School of Education, Boston, 1947), p. 60.

⁶⁶Louise Dooley, "A Compilation and Validation of Basic Geographical Concepts for Inclusion in School Curricula for Grades 1-12," (Unpublished Doctoral dissertation, Boston University, School of Education, Boston, 1957), p. 184.

taught in the seventh grade.⁶⁷

No research was found which showed the relative importance teachers placed on abilities of pupils to locate places on maps or globes through the use of latitude and longitude and the ability to convert degrees of latitude to miles in the fifth and sixth grades.

Scale

In a test of map-reading ability given to sixth-grade pupils, 62 per cent of the answers involving the use of scale were correct. This showed some pupil knowledge of scale, but not enough for them to use it with any degree of accuracy.⁶⁸

In Dooley's study it was concluded that the concept that "all maps are made to scale" was a "very important" one.⁶⁹ Stains said, "Until children understand the significance of the Scale of Miles (as indicated in the Legend on a map) . . . they cannot fully comprehend the meaning of the map."⁷⁰

No previous research was found which polled the relative importance placed by fifth and sixth-grade teachers upon teaching the ability to determine distance by using a scale.

⁶⁷Whipple and James, op. cit., p. 208.

⁶⁸Louise D. Wagner, "Measuring the Map-reading Ability of Sixth Grade Children," The Elementary School Journal, 53:340, February, 1953.

⁶⁹Dooley, op. cit., p. 184.

⁷⁰Stains, op. cit., p. 61.

Lack of Literature and Research

There was a noticeable lack of literature and research on the opinions of classroom teachers as to what map and globe skills should be taught and what emphasis would be placed upon each.

Since it is the classroom teacher who determines in the final analysis what her students will be taught, this thesis is written in the hope of filling the research gap in this area to some small degree. It was the purpose of this thesis to determine the relative importance that fifth and sixth-grade teachers placed upon the teaching of map and globe skills, and to view what teaching tools and methods are being employed in this curriculum area at this time.

CHAPTER III

PROCEDURE

The purpose of this thesis was to determine the relative importance which fifth and sixth-grade classroom teachers place on the teaching of certain map and globe skills. Also general information was gathered concerning current methods and materials used in teaching these skills.

It was decided that this information could best be obtained through the use of a check list type of instrument to be completed by teachers. This instrument would list map and globe skills; teachers would rate their importance by checking the appropriate column on a rating scale.

The formulation of a map and globe skills list presented a problem, as research revealed a divergence of opinion as to what constituted a skill in this area of the curriculum. Often items which were listed as map or globe skills by some authors were judged, upon closer examination, to be facts and knowledges, not skills. Since this study was to deal only with skills, fact items were deleted.

Skills such as "the ability to find direction by latitude and longitude" were listed in some sources as a single skill. For purposes of this study these were considered separately in order to better ascertain the degree of emphasis placed on each by teachers.

The final list of skills as it appeared on the check list was as follows:

Ability to determine direction:

1. from orientation
2. from parallels
3. from meridians
4. of river flow or land slope

Ability to locate places on maps or globes through the use of:

5. standard map symbols
6. distance and direction
7. latitude
8. longitude
9. a key or legend

Ability to determine distance:

10. on a road map
11. by using a scale of miles
12. on a globe
13. by comparing distances

Develop the ability to:

14. determine or trace routes of travel
15. visualize landscape features
16. infer man's way of life from physical detail
17. recognize differences in seasons and hours of daylight in different latitudes
18. determine differences in time zones
19. read and interpret facts from a pattern or tool map, or combination of pattern maps
20. convert degrees of latitude to miles.

Many sources were consulted to compile the list of skills appearing on the check list. The final list is a composite of the skills listed or suggested by the following:

1. Chace, Harriett. "Map Skills Developed in Grade Six," Social Education, 20:60-62, February, 1956.
2. Anderzhon, Mamie L. Steps in Map Reading. Chicago: Rand McNally and Co., 1941.
3. Maps and Map Skills: Grade 5 and Grade 6. Columbus, Ohio: My Weekly Reader Subscriber Books, Education Center, 1958.
4. Morse, Katherine. "A Systematic Progression of Social Studies Skills for the Interpretation of Maps and Globes in Grade Four" (unpublished Master's thesis, Boston University, School of Education, Boston, 1956).

5. Harris, Ruby. Rand McNally Handbook of Map and Globe Usage. New York: Rand McNally and Co., 1959.
6. Preston, Ralph C. Teaching Social Studies in the Elementary School. New York: Rinehart and Co., 1958.
7. Iowa Test of Basic Skills (Test battery for grades 4, 5, 6, and 7). Boston: Houghton Mifflin Co., 1956.

The skills were to be rated by teachers as requiring Mastery, as Essential, Significant, Unimportant, or Inconsequential. Each of these five ratings was defined as different teachers might have had different definitions for the words. The following were the definitions given:

- | | |
|------------------|--|
| Mastery: | skills which should be learned by every pupil during the upper middle grades for a good understanding of geographic concepts |
| Essential: | skills highly significant in the understanding of geographical concepts |
| Significant: | skills fairly significant which should be included in most educational programs |
| Unimportant: | skills that are comparatively unimportant or are unnecessary at middle grade level |
| Inconsequential: | skills which are not necessary at all for an understanding of geographical concepts. |

In order to obtain information concerning methods and materials utilized in the teaching of map and globe skills, a second page was added to the check list. Teachers were requested to answer "Yes" or "No" to the ten questions listed below:

1. Does your class use a social studies workbook for map exercises?
2. Do you think such a workbook would improve the learning of map skills?

3. Do your pupils frequently make free-hand maps?
4. Do you find the teaching of map and globe skills more difficult than the teaching of other phases of social studies?
5. Do you consider the study of map skills more important at the next grade level?
6. Do you use questions involving the use of map skills in your "end of the unit" tests?
7. Do your pupils make constant use of a globe?
8. Do you have a set of large wall maps in your classroom?
9. Does your school system use a standardized social studies or geography test or test battery? If so, please indicate below which one.
10. Does your class use commercial or mimeographed outline maps?

Teachers were asked to indicate which grade they taught by circling the number 5 or 6 so that a comparison could be made between the answers of fifth-grade teachers and those of sixth-grade teachers. Comments by teachers were encouraged.

It was decided that a population of one hundred fifth-grade teachers and one hundred sixth-grade teachers would be needed. Letters carrying Dr. W. Linwood Chase's signature were sent to the Superintendents of Schools in seven towns and cities in the Boston area requesting the cooperation of the fifth and sixth-grade teachers in their school systems. All the superintendents agreed to their teachers participating in the study.

An appropriate number of check list-questionnaires were sent to the principals of the schools with directions for their distribution and a stamped envelope for their return. Each separate questionnaire

was in an unsealed envelope which the teacher was to seal after completion. This was done to preserve the anonymity of each teacher. To further insure this, it was requested that no teacher write her name on the questionnaire or the envelope.

The check list-questionnaires were returned by mail and the data tabulated.

CHAPTER IV

ANALYSIS OF DATA

In order to ascertain the relative importance placed upon the teaching of certain map skills by classroom teachers, a check list was submitted to one hundred fifth-grade teachers. These teachers were asked to rate each skill as M-requiring Mastery, E-Essential, S-Significant, U-Unimportant, or I-Inconsequential. The results of this study are shown on Table I.

It will be noted on Table I that a majority of the one hundred fifth-grade teachers felt that only four skills required mastery by every pupil for a good understanding of geographical concepts. These skills were the ability to determine direction from orientation, and the abilities to locate places on maps or globes through the use of standard map symbols, distance and direction, and a key or legend.

TABLE I

NUMBER OF FIFTH-GRADE TEACHERS, IN A GROUP OF ONE HUNDRED,
WHO RATED CERTAIN MAP SKILLS AS MASTERY, ESSENTIAL,
SIGNIFICANT, UNIMPORTANT, AND INCONSEQUENTIAL

Map Skills	M	E	S	U	I	B*
Ability to determine direction:						
1. from orientation.....	52	27	13	5	2	1
2. from parallels.....	12	19	47	15	3	4
3. from meridians.....	8	23	48	16	2	3
4. of river flow or land slope.....	30	28	27	6	5	4
Ability to locate places on maps or globes through the use of:						
5. standard map symbols.....	73	20	3	0	0	4
6. distance and direction.....	51	38	10	0	0	1
7. latitude.....	20	28	36	12	1	3
8. longitude.....	17	30	38	10	1	4
9. a key or legend.....	68	26	3	2	0	1
Ability to determine distance:						
10. on a road map.....	26	37	29	6	1	1
11. by using a scale of miles.....	49	38	13	0	0	0
12. on a globe.....	22	39	24	8	5	2
13. by comparing distances.....	25	45	23	4	3	0
Develop the ability to:						
14. determine or trace routes of travel.....	35	41	20	3	0	1
15. visualize landscape features.....	35	47	9	6	0	3
16. infer man's way of life from physical detail.....	31	41	21	5	1	1
17. recognize differences in seasons and hours of daylight in different latitudes.....	15	44	30	9	1	1
18. determine differences in time zones.....	20	25	40	11	0	4
19. read and interpret facts from a pattern or tool map, or combina- tion of pattern maps.....	21	21	35	20	3	0
20. convert degrees of latitude to miles.....	1	8	29	41	21	0
Totals	611	625	498	179	49	38

*Blanks

An analysis of Table I reveals that Mastery ratings were given by 52 teachers to skill number one, 73 teachers to skill number five, 51 teachers to skill number six, and 68 teachers to skill number nine. It was noted that the latter three are all skills concerned with the ability to locate places on maps or globes.

At the same time, nine or almost one half of the skills listed were rated Mastery by less than 25 teachers. Specifically, the Mastery rating was checked by only 12 teachers for the ability to determine direction from parallels, by only 8 teachers for ability to determine direction from meridians, by 20 teachers for ability to locate places on maps and globes through the use of latitude and by 17 teachers for this same skill through the use of longitude, by 22 teachers for ability to determine distance on a globe, by 15 teachers for ability to recognize differences in seasons and hours of daylight in different latitudes, by 20 teachers for ability to determine differences in time zones, by 21 for the ability to interpret facts from a pattern or tool map, and by only 1 teacher for the ability to convert degrees of latitude to miles.

A range of 8 to 47 teachers rated individual skills to be Essential, highly significant in the understanding of geographical concepts, but not requiring mastery of every pupil. Five skills were rated by 40 or more teachers as Essential; 47 teachers gave this rating to skill number fifteen, 44 to skill number seventeen, 41 each to skills fourteen and sixteen, and 45 teachers to skill number thirteen.

Conversely, five skills were rated by less than 25 out of 100

teachers as Essential. Nineteen evaluators gave this rating to skill two, 23 to skill three, 20 to skill five, 21 to skill nineteen, and 8 to skill twenty.

The three skills rated as Significant by 40 or more teachers were skills two, three, and eighteen. Forty-seven raters gave this evaluation to skill two, 48 to skill three, and 40 to skill eighteen.

The ten skills which less than 25 teachers rated as Significant were skills one, five, six, nine, eleven, twelve, thirteen, fourteen, fifteen, and sixteen. In each instance these skills had been previously rated as Mastery or Essential by 60 or more teachers.

The skill receiving the highest number of ratings of Unimportant was the ability to convert degrees of latitude to miles. Forty-one teachers rated this skill as Unimportant, whereas this skill received only 1 Mastery, 8 Essential, and 29 Significant ratings. Three other skills were rated Unimportant by 15 to 20 teachers. Skill two received 15, skill three 16, and skill nineteen 20 ratings of Unimportant. Skills five, six, and eleven were distinguished by receiving no Unimportant or Inconsequential ratings.

The skill of converting degrees of latitude to miles received the highest number of Inconsequential ratings. Twenty-one teachers judged this as a skill not necessary at all for an understanding of geographical concepts. All the other skills were given this lowest rating by only 5 or less raters.

Since there was no way of ascertaining the reasons why a teacher occasionally did not rate some of the skills, no interpretation was

placed upon the number of blanks credited to any skill on this table or on any other table in this study. The blanks are tabulated only for purposes of accuracy.

In examining the totals of the ratings of fifth-grade teachers, it was noted that the aggregate Mastery ratings numbered 611, the Essential ratings numbered 625, the Significant ratings totaled 498, the Unimportant 179, and the Inconsequential 49. It was interesting to note that the total number of Mastery ratings differed by only 14 from the total number of Essential ratings.

The same check list which was used to determine the relative importance placed by fifth-grade teachers upon teaching map skills was submitted to one hundred sixth-grade classroom teachers to survey their viewpoints. The results of this study are shown in Table II.

It was noted that 50 teachers or more rated three skills as requiring Mastery. This highest rating was given by 60 raters to the ability to locate places on maps or globes through the use of standard map symbols, by 64 teachers to the ability to locate places on maps or globes through the use of a key or legend, and by 51 teachers to ability to determine distance by using a scale of miles.

On the other hand, eight skills were rated by less than 25 out of 100 teachers as requiring Mastery. More specifically, Mastery ratings were given by 24 teachers to skill two, by 20 teachers to skill three, by only 12 teachers to skill four, by 19 teachers to skill twelve, by 22 teachers to skill thirteen, by 17 teachers to skill eighteen, by 14 teachers to skill nineteen, and by only 3 teachers to skill twenty.

TABLE II

NUMBER OF SIXTH-GRADE TEACHERS, IN A GROUP OF ONE HUNDRED,
WHO RATED CERTAIN MAP SKILLS AS MASTERY, ESSENTIAL,
SIGNIFICANT, UNIMPORTANT, AND INCONSEQUENTIAL

Map Skills	M	E	S	U	I	B*
Ability to determine direction:						
1. from orientation.....	48	29	15	4	0	4
2. from parallels.....	24	35	27	9	0	5
3. from meridians.....	20	30	31	13	1	5
4. of river flow or land slope.....	12	46	23	11	4	4
Ability to locate places on maps or globes through the use of:						
5. standard map symbols.....	60	32	8	0	0	0
6. distance and direction.....	46	35	17	0	0	2
7. latitude.....	26	45	18	7	0	4
8. longitude.....	26	43	18	9	0	4
9. a key or legend.....	64	25	6	0	3	2
Ability to determine distance:						
10. on a road map.....	35	26	25	8	3	3
11. by using a scale of miles.....	51	32	15	0	1	1
12. on a globe.....	19	44	31	5	0	1
13. by comparing distances.....	22	42	31	3	0	2
Develop the ability to:						
14. determine or trace routes of travel.....	39	34	23	3	0	1
15. visualize landscape features.....	29	43	21	4	1	2
16. infer man's way of life from physical detail.....	29	36	29	4	1	1
17. recognize differences in seasons and hours of daylight in different latitudes.....	25	38	28	8	1	0
18. determine differences in time zones	17	34	31	15	2	1
19. read and interpret facts from a pattern or tool map, or combina- tion of pattern maps.....	14	24	38	17	7	0
20. convert degrees of latitude to miles.....	3	7	22	49	19	0
Totals	609	680	457	169	43	42

*Blanks

In comparing Mastery ratings given by sixth-grade teachers in Table II with ratings given by fifth-grade teachers in Table I, it was noted that approximately the same number of Mastery ratings were given to each skill, with seven exceptions. In four cases there was an increase in the number of Mastery ratings given by sixth-grade teachers over the number given by fifth-grade teachers. Precisely, skill two, the ability to determine direction from parallels, had twice as many Mastery ratings, 24, by sixth-grade teachers as by fifth-grade teachers, who gave it a Mastery rating 12 times. The same was true of skill three. Twenty sixth-grade teachers rated this as Mastery as against 8 fifth-grade raters. Thirty-five sixth-grade teachers gave skill ten the highest rating, as opposed to 26 fifth-grade raters; 25 higher grade teachers rated skill seventeen thusly, while only 15 of the lower grade teachers did likewise.

Conversely, only 12 rated skill four as Mastery among sixth-grade raters, while 30 rated it so among the other grade teachers. Also, 14 rated skill nineteen as Mastery in Table II, and 21 rated it the highest in Table I.

Six skills were judged Essential by 40 or more sixth-grade instructors. These skills were number four with 46 ratings, number seven with 45 ratings, number eight with 43 ratings, number twelve with 44 ratings, number thirteen with 42 ratings, and number fifteen with 43 ratings.

Whereas five skills were rated as Essential by less than one quarter or twenty-five of the fifth grade teachers as shown in Table I,

only two skills of the former five were so rated by sixth-grade teachers. These two were number nineteen with 24 ratings and number twenty with 7 Essential ratings.

In all cases the number of Essential ratings given by sixth-grade teachers increased or remained approximately the same, except in the instances of skills ten and fourteen. The fifth-grade Essential rating of 37 fell to 26 in the sixth-grade rating in the case of skill ten. In skill fourteen the fifth-grade rating of 41 fell to 34 Essential ratings in the sixth-grade teachers' ratings.

The skill receiving the highest number of Unimportant ratings was the ability to convert degrees of latitude to miles. This was rated as Unimportant by 49 sixth-grade teachers, whereas only 3 rated it as Mastery, 7 as Essential, and 22 as Significant. This sharply parallels the judgments of fifth-grade teachers. Basically, the Unimportant ratings of the two groups of teachers were similar. Two of the skills, numbers five and six, received no Unimportant or Inconsequential ratings by either rating group, and skill eleven, which received no such ratings by fifth-grade teachers, was given only 1 Inconsequential rating by a sixth-grade teacher. As in Table I, the skill having the highest number of Inconsequential ratings was number twenty. The other lowest ratings were closely aligned with Table I.

In examining the rating totals of Table II, it was noted that the aggregate Mastery ratings numbered 609, only 2 less than the fifth-grade totals of 611. The Essential ratings totaled 680, showing a sizeable increase over 625 ratings given by fifth-grade teachers. To

offset this, the Significant ratings were totaled at 457, as compared with 498 in the fifth-grade group. The sixth-grade teachers' Unimportant ratings totaled 169 and the Inconsequential 43, as compared with 179 and 49, respectively, in the lower grade ratings.

In order to obtain a more composite picture of the ratings, Table III shows the total ratings of fifth and sixth-grade teachers combined for each skill.

It was noted that four skills received a rating of Mastery by one hundred or more of the total group of teachers. Precisely, mastery ratings were given to the ability to determine direction for orientation by 100 teachers, to the ability to locate places using standard map symbols by 133 teachers, to the ability to locate places using a key or legend by 132 teachers, and to the ability to determine distance by using a scale of miles by 100 teachers. Only two skills received less than thirty-five mastery totals by the total group of raters. Skill three had a total of 28 Mastery ratings; skill twenty had only 4 such ratings.

The skills with the highest number of Essential ratings were the ability to visualize landscape features with 90 ratings, and the ability to determine distance by comparing distances with 87 Essential ratings.

The skill judged overwhelmingly to be the most Unimportant and Inconsequential was skill twenty, with 90 and 40 ratings, respectively. The next lowest skill in these categories was skill nineteen, with 37 Unimportant and 10 Inconsequential ratings.

TABLE III

TOTAL NUMBER OF FIFTH AND SIXTH-GRADE TEACHERS,
IN A GROUP OF TWO HUNDRED,
WHO RATED CERTAIN MAP SKILLS AS MASTERY, ESSENTIAL,
SIGNIFICANT, UNIMPORTANT, AND INCONSEQUENTIAL

Map Skills	M	E	S	U	I	B*
Ability to determine direction:						
1. from orientation.....	100	56	28	9	2	5
2. from parallels.....	36	54	74	24	3	9
3. from meridians.....	28	56	79	29	3	8
4. of river flow or land slope.....	42	74	50	17	9	8
Ability to locate places on maps or globes through the use of:						
5. standard map symbols.....	133	52	11	0	0	4
6. distance and direction.....	97	73	27	0	0	3
7. latitude.....	46	73	54	19	1	7
8. longitude.....	43	73	56	19	1	8
9. a key or legend.....	132	51	9	2	3	3
Ability to determine distance:						
10. on a road map.....	61	63	54	14	4	4
11. by using a scale of miles.....	100	70	28	0	1	1
12. on a globe.....	41	83	55	13	5	3
13. by comparing distances.....	47	87	54	7	3	2
Develop the ability to:						
14. determine or trace routes of travel.....	74	75	43	6	0	2
15. visualize landscape features.....	64	90	30	10	1	5
16. infer man's way of life from physical detail.....	60	77	50	9	2	2
17. recognize differences in seasons and hours of daylight in differ- ent latitudes.....	40	82	58	17	2	1
18. determine differences in time zones.....	37	59	71	26	2	5
19. read and interpret facts from a pattern or tool map, or combina- tion of pattern maps.....	35	45	73	37	10	0
20. convert degrees of latitude to miles.....	4	15	51	90	40	0
Totals	1220	1305	955	348	92	80

*Blanks

The totals for the combined fifth and sixth-grade teachers, as shown in Table III, were 1220 Mastery, 1305 Essential, 955 Significant, 348 Unimportant, and 92 Inconsequential.

Percentages for the combined ratings of fifth and sixth-grade teachers are shown in Table IV. Analysis showed that the two skills which received the greatest per cent of the Mastery ratings were skill five, with 66.5 per cent, and skill nine, with 66 per cent. It was noted that both of these skills were concerned with the ability to locate places on maps or globes. Fifty per cent of the teachers gave Mastery ratings to skill one and skill eleven. Fourteen skills were rated as requiring this highest level of proficiency by less than 33 per cent of the total group of teachers.

It was noted, concerning the Essential ratings, that no skill was awarded this rating by more than 45 per cent of the total group of raters. All the skills were rated by between 22.5 per cent and 45 per cent of the teachers as Essential, with the one exception of skill twenty, whose Essential ratings totaled only 7.5 per cent. It was significant to note that this skill was given the higher rating of Mastery by only 2 per cent of the teachers.

The skills rated Essential by the greatest percentage of teachers were skill fifteen, with 45 per cent, and skill thirteen, with 43.5 per cent.

TABLE IV
 PERCENTAGE OF FIFTH AND SIXTH-GRADE TEACHERS,
 IN A GROUP OF TWO HUNDRED,
 WHO RATED CERTAIN MAP SKILLS AS MASTERY, ESSENTIAL,
 SIGNIFICANT, UNIMPORTANT, AND INCONSEQUENTIAL

Map Skills	M	E	S	U	I	B*
Ability to determine direction:						
1. from orientation.....	50.0	28.0	14.0	4.5	1.0	2.5
2. from parallels.....	18.0	27.0	37.0	12.0	1.5	4.5
3. from meridians.....	14.0	28.0	39.5	14.5	1.5	4.0
4. of river flow or land slope...	21.0	37.0	25.0	8.5	4.5	4.0
Ability to locate places on maps or globes through use of:						
5. standard map symbols.....	66.5	26.0	5.5	0.0	0.0	2.0
6. distance and direction.....	48.5	36.5	13.5	0.0	0.0	1.5
7. latitude.....	23.0	36.5	27.0	9.5	0.5	3.5
8. longitude.....	21.5	36.5	28.0	9.5	0.5	4.0
9. a key or legend.....	66.0	25.5	4.5	1.0	1.5	1.5
Ability to determine distance:						
10. on a road map.....	30.5	31.5	27.0	7.0	2.0	2.0
11. by using a scale of miles.....	50.0	35.0	14.0	0.0	0.5	0.5
12. on a globe.....	20.5	41.5	27.5	6.5	2.5	1.5
13. by comparing distances.....	23.5	43.5	27.0	3.5	1.5	1.0
Develop the ability to:						
14. determine or trace routes of travel.....	37.0	37.5	21.5	3.0	0.0	1.0
15. visualize landscape features..	32.0	45.0	15.0	5.0	0.5	2.5
16. infer man's way of life from physical detail.....	30.0	38.5	25.0	4.5	1.0	1.0
17. recognize differences in seasons and daylight hours in different latitudes.....	20.0	41.0	29.0	8.5	1.0	0.5
18. determine differences in time zones.....	18.5	29.5	35.5	13.0	1.0	2.5
19. read and interpret facts from a pattern or tool map, or com- bination of pattern maps.....	17.5	22.5	36.5	18.5	5.0	0.0
20. convert degrees of latitude to miles.....	2.0	7.5	25.5	45.0	20.0	0.0

*Blanks

The highest percentages of Significant ratings were earned by skill three, with 39.5 per cent; skill two, with 37 per cent; skill nineteen, with 36.5 per cent; and skill eighteen, with 35.5 per cent. All of these skills received combined Mastery and Essential ratings of less than 50 per cent, which partially accounted for the larger percentages here.

The two skills which had the lowest number of Significant ratings were those which received the highest combined Mastery-Essential ratings.

The analysis of Table IV revealed that five skills received ratings of Unimportant from 12 per cent or more of the teachers. Specifically, skill two received 12 per cent, skill eighteen received 13 per cent, skill three received 14.5 per cent, skill nineteen received 18.5 per cent, and significantly, skill twenty received Unimportant ratings by 45 per cent of the raters.

The analysis further showed that all the skills, with one exception, were rated as Inconsequential by five or less per cent of the teachers. Again, skill twenty was given this lowest rating by 20 per cent of the raters. Sixty-five per cent rated this skill as either Unimportant or Inconsequential.

In order to determine the rank of the map skills as to their over-all importance, the totals of the teachers' ratings were weighted, as seen in Tables V through VIII. Every Mastery rating was given a weight of 4, every Essential rating a weight of 3, every Significant rating a weight of 2, every Unimportant rating a weight of 1, and every

Inconsequential rating a negative weight of 0. As in previous tables, the number of blanks was ignored, as no just and accurate interpretation could be made of them. The results of this weighting of the fifth-grade teachers' ratings are shown in Table V.

TABLE V
WEIGHTED TOTALS AND RANK OF MAP SKILLS
AS RATED BY ONE HUNDRED FIFTH-GRADE TEACHERS

Map Skills	M-4	E-3	S-2	U-1	I-0	Totals	Rank
5	292	60	6	0	0	358	1
9	272	78	6	2	0	358	1
6	204	114	20	0	0	338	3
11	196	114	26	0	0	336	4
1	208	81	26	5	0	321	5
14	140	123	40	3	0	306	6
15	140	141	18	6	0	305	7
16	124	123	42	5	0	294	8
13	100	135	46	4	0	285	9
10	104	111	58	6	0	279	10
4	120	84	54	6	0	264	11
12	88	117	48	8	0	261	12
17	60	132	60	9	0	261	12
7	80	84	72	12	0	248	14
18	80	75	80	11	0	246	15
8	68	90	76	10	0	244	16
19	84	63	70	20	0	237	17
2	48	57	94	15	0	214	18
3	32	69	96	16	0	213	19
20	4	24	58	41	0	127	20

It was noted on this table that skill five, the ability to locate places on a map or globe through the use of standard map symbols, and skill nine, the ability to perform the aforementioned skill through the use of a key or legend, were tied for first place with the largest weighted scores. It was assumed that these two skills were considered

the most over-all important by this sampling of fifth-grade teachers.

The ability to locate places on maps or globes through use of distance and direction, skill six, fell into the third ranking position of importance. The ability to determine distance by using a scale of miles missed this third rank by a narrow margin, but fell into fourth place.

The ability to determine direction from orientation, skill one, fell into the fifth position of importance.

The skills which vied for the sixth position were the ability to determine or trace routes of travel, skill fourteen, and the ability to visualize landscape features, skill fifteen. In the analysis skill fourteen fell into sixth position and skill fifteen into seventh position.

The skills given the lowest rankings were skill two in eighteenth position, skill three in nineteenth position, and, far apart from the others, skill twenty in the lowest or twentieth position.

The ratings of the sixth-grade teachers were weighted in the same manner as the fifth-grade teachers' ratings in Table V. The results of this weighting appear in Table VI.

The ability to locate places on a map or globe through the use of standard map symbols, skill five, fell in first place after the tabulation of the weighted scores of sixth-grade teachers.

Second place was earned by skill nine, the ability to locate places using a key or legend.

TABLE VI

WEIGHTED TOTALS AND RANK OF MAP SKILLS
AS RATED BY ONE HUNDRED SIXTH-GRADE TEACHERS

Map Skills	M-4	E-3	S-2	U-1	I-0	Totals	Rank
5	240	96	16	0	0	352	1
9	256	75	12	0	0	343	2
11	204	96	30	0	0	330	3
6	184	105	34	0	0	323	4
1	192	87	30	4	0	313	5
14	156	102	46	3	0	307	6
15	116	129	42	4	0	291	7
16	116	108	58	4	0	286	8
7	104	135	36	7	0	282	9
13	88	126	62	3	0	279	10
8	104	129	36	9	0	278	11
17	100	114	56	8	0	278	11
10	140	78	50	8	0	276	13
12	76	132	62	5	0	275	14
2	96	115	54	9	0	274	15
18	68	102	62	15	0	247	16
3	80	90	62	13	0	245	17
4	48	138	46	11	0	243	18
19	56	72	76	17	0	221	19
20	12	21	44	49	0	166	20

Skill eleven, the ability to determine distance by using a scale of miles, had a weighted rank of third place, skill six was fourth, and skill one was fifth.

It was noted that the two lowest ranking skills fell considerably below the others in weighted totals. Skill nineteen, the ability to read and interpret facts from a pattern or tool map, was nineteenth; skill twenty, ability to convert degrees of latitude to miles, with a very low weighted total, was twentieth.

In order to ascertain the consensus of opinion of the total teacher population on the rank of the importance of the different map skills as derived from weighted totals, this information was tabulated in Table VII.

TABLE VII
WEIGHTED TOTALS AND RANKS OF MAP SKILLS
AS RATED BY TWO HUNDRED FIFTH AND SIXTH-GRADE TEACHERS

Map Skills	M-4	E-3	S-2	U-1	I-0	Totals	Rank
5	532	156	22	0	0	710	1
9	528	153	18	2	0	701	2
11	400	210	56	0	0	666	3
6	388	219	54	0	0	661	4
1	400	168	56	9	0	633	5
14	296	225	86	6	0	613	6
15	256	270	60	10	0	596	7
16	240	231	100	9	0	580	8
13	188	261	108	7	0	564	9
10	244	189	108	14	0	555	10
17	160	246	116	17	0	539	11
12	164	249	110	13	0	536	12
7	184	219	108	19	0	530	13
8	172	219	112	19	0	522	14
4	168	222	100	17	0	507	15
18	148	177	142	26	0	493	16
2	144	172	148	24	0	488	17
19	140	135	146	37	0	458	18
3	112	159	158	29	0	458	18
20	16	45	102	90	0	253	20

The combined group of two hundred teachers rated map skill five, the ability to locate places on maps and globes through the use of standard map symbols, as having the first rank of importance. Skill nine followed closely behind as the second ranking skill in over-all importance; skill eleven was third.

After a considerable drop in the weighted totals, skill six was fourth and skill one was fifth.

The next twelve ranks, sixth through seventeenth, were spread fairly equidistantly from each other according to the weighted totals. The difference between any two consecutive ranks was no greater than twenty points.

After a large gap in the weighted totals, skills nineteen and three tied for eighteenth; after a drop of approximately two hundred points, skill twenty was twentieth.

For the purpose of comparing the weighted total ranks of fifth-grade teachers with those of sixth-grade teachers, and again with the ranks of all the teachers considered together, the necessary figures were tabulated in Table VIII.

An analysis of this table revealed that in general the evaluations of the groups were similar in regard to the relative importance placed upon the teaching of certain map skills.

Both groups of raters agreed that skill five, the ability to locate places on maps or globes through the use of standard map symbols, had the most over-all importance.

It was noted that there was agreement that skill nine, ability to use a key or legend, fell into first or second rank as the fifth-grade teachers ranked it as tying for first place, while the sixth-grade teachers ranked it second. The composite ranking for this skill was second.

TABLE VIII
 COMPARISON OF THE RANKS OF MAP SKILLS
 RESULTING FROM WEIGHTING THE RATINGS

<u>Map Skills</u> Fifth-grade Teachers	<u>Map Skills</u> Sixth-grade Teachers	<u>Map Skills</u> Total Group of Teachers	Rank of Importance
5	5	5	1
9			
	9	9	2
6	11	11	3
11	6	6	4
1	1	1	5
14	14	14	6
15	15	15	7
16	16	16	8
13	7	13	9
10	13	10	10
4	8	17	11
	17		
12		12	12
17			
	10	7	13
7	12	8	14
18	2	4	15
8	18	18	16
19	3	2	17
2	4	19	18
		3	
3	19		19
20	20	20	20

Sixth-grade teachers said that skill eleven, ability to determine distance by using a scale of miles, was third in over-all importance, and fifth-grade teachers ranked it fourth.

Skill six was ranked as third by the fifth-grade teachers and fourth by the other grade teachers. Analysis showed, however, that it was placed fourth by the composite group.

Skill four, ability to determine direction of river flow or land slope, was curiously ranked eleventh, and therefore higher, by fifth-grade teachers than by sixth-grade teachers, who ranked it eighteenth.

It was significant to note that sixth-grade teachers considered skill seven more important than did fifth-grade teachers, who ranked it as fourteenth, while the former raters ranked it ninth.

It was noted that there was slightly more importance placed upon skill nineteen by fifth-grade teachers, who rated it as seventeenth, than by sixth-grade teachers, who rated it as nineteenth. However, the total group rating was eighteenth.

There was mutual agreement that skill twenty was the least important skill, with skills three and nineteen also considered much less important than the other skills.

In order to obtain certain general information concerning the use of different methods and materials in the teaching of map and globe skills, ten questions were submitted to the same one hundred fifth-grade teachers and one hundred sixth-grade teachers who rated the skills. Teachers were requested to answer these questions by checking in the appropriate column under "Yes" or "No"; any comments by these teachers were welcomed.

The tabulation of the answers given by the one hundred fifth-grade teachers is given in Table IX.

TABLE IX

NUMBER OF FIFTH-GRADE TEACHERS WHO ANSWERED "YES" OR "NO"
TO QUESTIONS CONCERNING THE USE OF DIFFERENT METHODS AND MATERIALS
IN THE TEACHING OF MAP AND GLOBE SKILLS

Questions	YES	NO	BLANKS
1. Does your class use a social studies workbook for map exercises?.....	38	62	0
2. Do you think such a workbook would improve the learning of map skills?..	90	9	1
3. Do your pupils frequently make free-hand maps?.....	57	43	0
4. Do you find the teaching of map and globe skills more difficult than the teaching of other phases of social studies?.....	29	71	0
5. Do you consider the study of map skills <u>more important</u> at the <u>next grade level</u> ?.....	15	85	0
6. Do you use questions involving the use of map skills in your "end of the unit" tests?.....	82	18	0
7. Do your pupils make constant use of a globe?.....	56	42	2
8. Do you have a set of large wall maps in your classroom?.....	78	21	1
9. Does your school system use a standardized social studies, geography test or test battery?.....	21	77	2
10. Does your class use commercial or mimeographed outline maps.....	87	13	0

An analysis of Table IX showed that 38 teachers answered "Yes" to question one, "Does your class use a social studies workbook for map exercises?", while 62 teachers answered negatively.

In spite of the relatively few people using such a workbook, 90 teachers answered question two affirmatively. This overwhelming majority of teachers said they thought such a workbook would improve the learning of map skills.

Table IX showed that a slight majority, 57, of the teachers answered "Yes" to question three, "Do your pupils frequently make free-hand maps?" The remainder of the teachers, 43, answered "No" to this question.

Twenty-nine fifth-grade teachers answered "Yes" to question four, "Do you find the teaching of map and globe skills more difficult than the teaching of other phases of social studies?", with 71 teachers answering "No."

A very small minority of the teachers, 15, answered "Yes" to question five, "Do you consider the study of map skills more important at the next grade level?" Eighty-five teachers answered "No."

Eighty-two teachers affirmatively answered question six and eighteen negatively answered it.

Fifth-grade teachers were quite equally divided on question seven. Fifty-six answered "Yes" to the question, "Do your pupils make constant use of a globe?" Forty-two answered "No" and two did not answer the question.

Seventy-eight answered "Yes" to the question numbered eight, indicating that they had a set of large wall maps in their classrooms. The negative answered numbered 21.

Only 21 teachers responded affirmatively to question nine concerning their school system's use of standardized tests in this curriculum area. Seventy-seven teachers answered "No" and two failed to make any answer.

An analysis of the answers to question ten indicated that 87 of the teachers used commercial or mimeographed outline maps. Thirteen teachers answered "No" here.

In order to obtain further information concerning the use of different methods and materials used in the teaching of map and globe skills, the same list of ten questions was submitted to one hundred sixth-grade teachers. The results are contained in Table X.

It was noted that 26 teachers answered "Yes" to question one concerning the use of social studies workbooks for map exercises. The negative answers numbered 74.

Eighty-three teachers indicated by their affirmative answers to question two that they thought such a workbook would improve the learning of map skills. The negative answers numbered 15.

The 60 affirmative answers to question three indicated that slightly over a majority of the one hundred sixth-grade teachers had their pupils make free-hand maps. The negative answers numbered 40.

TABLE X

NUMBER OF SIXTH-GRADE TEACHERS WHO ANSWERED "YES" OR "NO"
TO QUESTIONS CONCERNING THE USE OF DIFFERENT METHODS AND MATERIALS
IN THE TEACHING OF MAP AND GLOBE SKILLS

Questions	YES	NO	BLANKS
1. Does your class use a social studies workbook for map exercises?.....	26	74	0
2. Do you think such a workbook would improve the learning of map skills?..	83	15	2
3. Do your pupils frequently make free-hand maps?.....	60	40	0
4. Do you find the teaching of map and globe skills more difficult than the teaching of other phases of social studies?.....	29	70	1
5. Do you consider the study of map skills <u>more important</u> at the <u>next grade level</u> ?.....	14	85	1
6. Do you use questions involving the use of map skills in your "end of the unit" tests?.....	84	13	3
7. Do your pupils make constant use of a globe?.....	66	33	1
8. Do you have a set of large wall maps in your classroom?.....	90	10	0
9. Does your school system use a standardized social studies, geography test or test battery?.....	25	71	4
10. Does your class use commercial or mimeographed outline maps?.....	79	20	1

The identical number of sixth and fifth-grade teachers answered "Yes" to question four. Specifically, 29 in both grades found the teaching of map and globe skills more difficult than other phases of social studies. Seventy sixth-grade teachers answered "No" to this question, with one teacher leaving the question blank.

Fourteen teachers answered "Yes" to question five, with 85 teachers answering "No," indicating that most felt that map skill study was important at their grade level.

Eighty-four teachers answered "Yes" to question six; thirteen answered "No" and 3 made no answer.

Sixty-six teachers answered "Yes" to question seven, indicating that two thirds of the teachers had their pupils make constant use of a globe. Thirty-three answered "No."

Ninety teachers answered "Yes" to question eight, indicating they have a set of large wall maps in their classrooms. The remainder of the teachers answered "No."

One fourth of the teachers, 25, answered "Yes" to question nine, "Does your school system use a standardized social studies test or test battery?" Seventy-one answered "No" and 4 made no answer.

Seventy-nine teachers answered "Yes" to question ten, indicating their classes used commercial or mimeographed outline maps and twenty answered "No" with one teacher leaving the question blank.

A comparison of Tables IX and X showed that the answers of the one hundred fifth-grade teachers were very similar to those of the one hundred sixth-grade teachers, with several exceptions. Approximately

the same number of affirmative and negative answers were given by both groups of teachers to questions two, three, four, five, six, and nine.

An analysis of the answers to question one showed that more fifth-grade teachers, 38, used a social studies workbook than sixth-grade teachers, 26.

A comparison of the responses made by the two groups of teachers to question seven indicated that ten more sixth-grade teachers had pupils make constant use of a globe than did fifth-grade teachers. Specifically, 66 sixth-grade teachers answered "Yes," while 56 of the lower grade teachers answered "Yes."

A comparison of the answers to question eight showed that more sixth-grade teachers than fifth-grade teachers have the use of large wall maps in their classrooms. Precisely, 90 sixth-grade teachers answered affirmatively, as opposed to 78 fifth-grade teachers.

An analysis of the answers to question ten showed a slightly greater use of commercial and mimeographed outline maps by fifth-grade teachers than by sixth-grade teachers. Specifically, 79 sixth-grade teachers answered "Yes" to this question and 87 fifth-grade teachers answered "Yes."

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to ascertain the relative importance placed on the teaching of certain map skills by classroom teachers. As a means to this end a check list was given to one hundred fifth-grade teachers and one hundred sixth-grade teachers. These teachers were asked to rate each of the twenty skills as Mastery, Essential, Significant, Unimportant, or Inconsequential. The following conclusions were made from their ratings:

The ratings of the one hundred fifth-grade teachers showed the following:

1. The two skills that the most fifth-grade teachers thought should be learned by every pupil during the upper middle grades for a good understanding of geographical concepts were the ability to locate places on a map or globe through the use of standard map symbols, and the ability to do the same thing through use of a key or legend.
2. Relatively few teachers thought any of the skills were not necessary at all for an understanding of geographical concepts.
3. The skill that was considered the most unimportant and inconsequential was the ability to convert degrees of latitude to miles.

4. Approximately half of these teachers said that the ability to determine direction from parallels or meridians was only fairly significant and should be included in most educational programs.

The ratings of the one hundred sixth-grade teachers showed the following:

1. The two skills that the most sixth-grade teachers said should be learned by every pupil during the upper middle grades for a good understanding of geographical concepts were the ability to locate places on a map or globe through the use of standardized map symbols, and the ability to do the same thing through the use of a key or legend.
2. Relatively few sixth-grade teachers said any of the skills were not necessary at all for an understanding of geographical concepts.
3. The skill which was considered the most unimportant and inconsequential was the ability to convert degrees of latitude to miles.

The combined ratings of the fifth and sixth-grade teachers led to the following conclusions:

1. A majority of the teachers said that four map skills should be learned by every pupil during the upper middle grades for a good understanding of geographical concepts. In order of their importance the skills were:
 - a. the ability to locate places on maps or globes through the

- use of standard map symbols
 - b. the ability to locate places on maps or globes through the use of a key or legend
 - c. the ability to determine direction from orientation
 - d. the ability to determine distance by using a scale of miles.
2. More teachers gave the middle rating, Significant, to the abilities to determine direction from parallels and from meridians saying that these skills were fairly significant and should be included in most educational programs.
3. The following skills were rated as being comparatively unimportant or unnecessary at middle grade level by more teachers than any other skills:
- a. the ability to convert degrees of latitude to miles
 - b. the ability to read and interpret facts from a pattern or tool map, or combination of pattern maps
 - c. the ability to determine direction from meridians
 - d. the ability to determine differences in time zones
 - e. the ability to determine direction from parallels.
4. The following skills were rated as not necessary at all for an understanding of geographical concepts by more teachers than any other skill:
- a. the ability to convert degrees of latitude to miles
 - b. the ability to read and interpret facts from a pattern or tool map, or a combination of pattern maps
 - c. the ability to determine direction of river flow or land slope.

The two hundred teachers' ratings were then weighted and totaled in order to ascertain their rank of over-all importance. Mastery ratings were given a weight of 4, Essential ratings a weight of 3, Significant a weight of 2, Unimportant a weight of 1, and Inconsequential ratings a weight of 0. The total group ranked the over-all relative importance of the twenty map skills as follows:

The ability to:

1. locate places on a map or globe through the use of standard map symbols
2. locate places on a map or globe through the use of a key or legend
3. determine distance by using a scale of miles
4. locate places on a map or globe through the use of distance and direction
5. determine direction from orientation
6. determine or trace routes of travel
7. visualize landscape features
8. infer man's way of life from physical detail
9. determine distance by comparing distances
10. determine distance on a road map
11. recognize differences in seasons and hours of daylight in different latitudes
12. determine distance on a globe
13. locate places on a map or globe through the use of latitude
14. locate places on a map or globe through the use of longitude

15. determine direction of river flow or land slope
16. determine differences in time zones
17. determine direction from parallels
18. determine direction from meridians
19. read and interpret facts from a pattern or tool map, or combination of pattern maps
20. convert degrees of latitude to miles.

A separate ranking of the over-all relative importance of the map and globe skills by fifth-grade teachers was compared with a similar ranking by sixth-grade teachers. The following conclusions were drawn:

1. In general, there was a great similarity between the ranks given to the map and globe skills by fifth-grade teachers and those given by sixth-grade teachers. The few exceptions to this are listed below.
2. Fifth-grade teachers ranked the ability to determine direction of river flow or land slope as eleventh, which was much more important than the eighteenth rank given to it by sixth-grade teachers.
3. Fifth-grade teachers ranked the ability to determine distance on a road map as tenth, and therefore more important than sixth-grade teachers, who ranked it thirteenth.
4. Fifth-grade teachers ranked the ability to determine differences in time zones, and the ability to read and interpret facts from a pattern or tool map, as slightly more important than sixth-grade teachers.

5. The ability to locate places on a map or globe through the use of latitude was ranked as fourteenth by fifth-grade teachers, which was less important than by sixth-grade teachers, who ranked it ninth.
6. The ability to locate places on a map or globe through the use of longitude was ranked as sixteenth by fifth-grade teachers, which was less important than by sixth-grade teachers, who ranked it eleventh.

Materials and methods check lists. In order to obtain some general information concerning current materials and methods being used in the teaching of map and globe skills, a list of ten questions was given to the two hundred teachers who participated in the rating of the skills. The number of "Yes" and "No" answers to these questions led to the following conclusions:

1. In general, there was considerable agreement as to methods and materials used by both fifth and sixth-grade teachers in the teaching of map and globe skills.
2. Only about one third of the teachers used social studies workbooks for map exercises.
3. Such workbooks were used more by fifth-grade teachers than by sixth.
4. All but a few teachers thought that a social studies workbook would improve the learning of map skills.
5. A slight majority of all the teachers had their pupils make free-hand maps.

6. The identical number of teachers in both grades found the teaching of map and globe skills more difficult than the teaching of other phases of social studies. However, this group encompassed less than one third of all the teachers.
7. Only 15 per cent of the total population considered the study of map skills more important at the next grade level.
8. A great majority of the teachers in both grades used questions involving the use of map skills on their end of the unit tests.
9. About 60 per cent had their pupils make constant use of a globe.
10. A large majority of the teachers had a set of large wall maps in their classrooms. However, more sixth-grade teachers had this material than did fifth.
11. Only about 25 per cent of the teachers taught in a school system where a standardized social studies test or test battery was used.
12. Where such a standardized test was used, it was usually the Iowa Test of Basic Skills, and occasionally the Stanford Achievement Test.
13. A large majority of the teachers employed commercial or mimeographed outline maps in their classes. However, more fifth-grade teachers used these than did sixth. Perhaps this could be due, in part, to less wall maps being present in fifth-grade classrooms than in sixth.

Thus, in conclusion, it may be said that fifth and sixth-grade

teachers generally agree on the relative importance of teaching certain map and globe skills. A few inconsistencies were noted.

Fifth-grade teachers placed varying degrees of greater stress on the abilities to determine the direction of river flow or land slope, to determine distance on a road map, to determine differences in time zones, and to read and interpret facts from pattern or tool maps than sixth-grade teachers did.

Conversely, sixth-grade teachers placed varying degrees of greater emphasis on the abilities to locate places on maps and globes through the use of latitude and longitude than did fifth-grade teachers.

The five skills rated as being the most important by the total group of teachers were:

1. locate places on a map or globe through the use of standard map symbols
2. locate places on a map or globe through the use of a key or legend
3. determine distance by using a scale of miles
4. locate places on a map or globe through the use of distance and direction
5. determine direction from orientation.

The five skills rated as least important by the total group of teachers were:

1. determine differences in time zones
2. determine direction from parallels
3. determine direction from meridians

4. read and interpret facts from a pattern map or tool map, or combination of pattern maps
5. convert degrees of latitude to miles.

In general, fifth and sixth-grade teachers utilized the same methods and materials to teach map and globe skills. Few teachers used a social studies workbook, but many more would like to use them. A majority of the teachers had their pupils make few hand maps, and make constant use of a globe. Many teachers used questions involving the use of map skills in their end-of-the-unit tests, and used commercial or mimeographed outline maps. The study showed that most teachers had a set of large wall maps in their classrooms.

Few teachers found the teaching of map and globe skills more difficult than teaching other phases of social studies, and only a minority considered this study to be more important at the next grade level. This would tend to indicate that the majority of teachers are not de-emphasizing the study of these skills in their grade because they feel they are more important in the next grade or in junior high school.

The most popularly used standardized test in this area was the Iowa Test of Basic Skills. The Stanford Achievement Test was used also, but very seldom. Standardized tests were used by only about 25 per cent of the teachers.

It was concluded that most teachers of the upper intermediate grades felt that their students should possess, with varying degrees of proficiency, a variety of map and globe skills. It may be assumed that the feelings of teachers regarding the importance of these skills have

influenced their teaching in this area of the curriculum. Therefore, a minority of teachers are not developing some of these geography skills to the degree advocated by most of the authorities consulted during the compiling of the list of skills. However, skills ranked lowest in over-all importance were rated by some teachers as Unimportant, which could mean they felt these were unnecessary at middle grade level, and should be presented in a higher grade.

This thesis is an attempt to show only the relative importance placed upon the teaching of certain map and globe skills by one hundred fifth-grade teachers and one hundred sixth-grade teachers. It does not presume or assume that their expressed opinions determine the real importance of these skills, since all of the skills listed on the check list were considered important by one or more experts in the social studies.

SUGGESTIONS FOR FURTHER RESEARCH

1. Research could determine what map and globe skills are tested by standardized tests, and if these skills are the ones upon which teachers place the most importance in their classroom teaching.
2. A study could be made to determine what map and globe skills are possessed by fifth and sixth-grade pupils, and with what degree of proficiency they are able to use them.
3. A comprehensive study could be made to determine what methods

and materials are the most useful to facilitate the teaching of map and globe skills.

A P P E N D I X

COMMENTS BY TEACHERS

The teachers participating in the study were asked to make any comments they wished on any portion of the questionnaire. Their remarks are listed below exactly as written. The number in parenthesis refers to the grade taught by the teacher making the remark.

Remarks on the Rating of Map Skills

1. Ability to determine direction from orientation and from parallels are extremely difficult for a sixth grade. (6)
2. Developing the ability to infer man's way of life from physical features is most important. (6)

Remarks on Methods and Use of Materials

1. Does your class use a social studies workbook for map exercises?
 - a. I have used the Weekly Reader Map Book, but did not find it good enough. (5)
 - b. Just the top group (5)
 - c. Teacher has bought some, but more are needed. (5)
 - d. We use the Weekly Reader Maps and Map Skills. (6)
2. Do you think such a workbook would improve the learning of map skills?
 - a. I would like to have a workbook for map work in social studies. It would improve their skills greatly. (5)
 - b. Not very much the way we use it. (6)
 - c. definitely (6)
3. Do your pupils frequently make free-hand maps?
 - a. Don't feel it is an accurate representation to make free hand boundary lines. Boundary lines are facts not approximations. (5)
 - b. Children enjoy making their own maps. (5)
 - c. just a few (5)
 - d. a bad practice (6)

4. Do you find the teaching of map and globe skills more difficult than the teaching of other phases of social studies?
 - a. Not too difficult to teach, but difficult to get children to understand. (5)
 - b. enjoy it (5)
 - c. It's more concrete than other phases. (6)
5. Do you consider the study of map skills more important at the next grade level?
 - a. Important at every grade level. (5)
6. Do you use questions involving the use of map skills in your "end of the unit" tests?
 - a. I don't necessarily use end of the unit tests. (6)
7. Do your pupils make constant use of a globe?
 - a. When it can be used with material studied. (5)
 - b. I haven't one. (5)
 - c. Not as much as I would like to have them. (6)
 - d. I have no globe at present. (6)
 - e. No, of maps. (6)
 - f. More use is made of wall maps than the globe.
Reason wall maps are more easily seen in a class of many students. Use of the globe could and would be increased if a large globe could be obtained. (6)
 - g. A plain unmarked globe is found invaluable. (5)
8. Do you have a set of large wall maps in your classroom?
 - a. But not too recent. (5)
 - b. Only U.S.--2. (5)
 - c. 3 of them. (6)
 - d. not complete (6)
 - e. One technique employed with great interest and enthusiasm is an old map first mounted on flannel, then cut up. We call it "The World in Pieces". We use this as a means of learning locations and in orientation on a flannel board. (5)
 - f. Another good technique is: A black-out map shielded by an overlay of black paper--it is amazing how it clears up the false concept of discovery and exploration, i.e., most children assume that with Columbus' discovery of a few small islands etc. the whole new world automatically unfolded. I should like to see this worked out commercially as the one used is pretty crude--but effective. (5)

10. Does your class use commercial or mimeographed outline maps?

- a. We use plain, unmarked masters for many kinds of work-- they are invaluable to show rainfall, population, geographical features, political divisions, products, river routes etc.. (5)
- b. Yes, when I can get any which is seldom. (5)
- c. For test purposes. (5)
- d. Used on occasion--usually for testing. Sometimes we use a freehand map for topography and a mimeographed one for cities or vice versa. (5)
- e. Some of the U.S. (5)

Since comments were made by relatively few teachers, no attempt was made to analyze or interpret them.

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