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A Comparative Study of the Effects of Different Types of Media on Selected Fifth Grade Students at Franklin Elementary School, Mattoon, Illinois

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A COMPARATIVE STUDY OF THE EFFECTS OF DIFFERENT
— TYPES OF MEDIA ON SELECTED FIFTH GRADE
STUDENTS AT FRANKLIN ELEMENTARY SCHOOL,
MATTOON, ILLINOIS

(TITLE)

BY

LESTER RAYMOND BURTON

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

Specialist in Education

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

1977

YEAR

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING
THIS PART OF THE GRADUATE DEGREE CITED ABOVE

July 19, 1977
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**A COMPARATIVE STUDY OF THE EFFECTS OF DIFFERENT
TYPES OF MEDIA ON SELECTED FIFTH GRADE
STUDENTS AT FRANKLIN ELEMENTARY SCHOOL,
MATTOON, ILLINOIS**

BY

LESTER RAYMOND BURTON

**B. S. in Ed., Eastern Illinois University, 1965
M. S. in Ed., Eastern Illinois University, 1974**

ABSTRACT OF A FIELD STUDY

**Submitted in partial fulfillment of the requirements
for the degree of Specialist in Education at the Graduate School
of Eastern Illinois University**

**CHARLESTON, ILLINOIS
1977**

Instructional media is usually used as a supplement to verbal and printed instruction. It is used for the purpose of illustration, exemplification, motivation, and for clarification. Filmstrips, 16mm films, charts, maps, and still pictures, library books, and resource units help students understand their social world.

No one teaching tool reaches the set goals in Social Studies classes. A comparison of different types of media effectiveness in improving student interest, in stimulating class discussion, and in helping to fix vocabulary is the goal of this study.

Identification of the media which produce the best student success provided the Social Studies with a basis for changing and improving the instructional unit in whatever subject areas are chosen for study.

After dividing thirty-seven students into six groups and giving each group a different media to use as they studied the unit on Alaska, (one of the six groups was given no additional media) a comparison is then drawn between the various types of media to see which group scored highest on the post test.

The group using 16mm films integrated with text and lecture material had the best performance on the post test. The effectiveness of the media based upon the mean percentage ranks the groups numerically as follows: First, 16mm films; second, resource unit; third, textbook and lecture; fourth, additional readings in library books; fifth, filmstrips,

and sixth, maps, charts, and still pictures.

After consideration of the findings of the study, various recommendations and conclusions are offered.

The following is recommended:

1. That elementary teachers, when teaching about Alaska, give prime consideration to the use of 16mm films.
2. If a study of this nature is done again, it is recommended that larger groups of students be employed for each group.
3. It is recommended that a study similar to this one be done in other subject areas.
4. It is recommended that in a future study, the lecture and use of the textbook be eliminated.

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INTRODUCTION

Accessible instructional media in today's school permits the educator to employ many methods of teaching. Leader and Null suggest that:

As educators continue to search for educational alternatives and for improved methodologies for learning, they need to consider the increased use of mediated instruction that is so extensively supported by educational research.¹

When teachers do experiment with various techniques in the classroom, they usually do not consider it a research project. Instead they usually are merely searching for the method which will help students improve their academic performance. As a result, teachers are chided for not documenting their techniques for the benefit of other educators in other classrooms.

Instructional media is usually used as a supplement to verbal and printed instruction. In other words, it is "for the purpose of illustration, exemplification, motivation, and clarification."² Filmstrips, 16mm films, charts, maps, and still pictures, library books, and resource units help

¹Harry O. Leader and Eldon J. Null, "What Kind of Teachers Use Instructional Films?" Audiovisual Instruction, February 1974, p. 46.

²Dean Hustuft, "Media in Instructional Processes." Educational Technology, December 1973, p. 61.

students understand their social world. Ingraham suggests:

Social Studies teachers at all levels--elementary, secondary, college, or adult--are constantly on the alert for learning materials which can...

attract "turned off" students,
communicate to "slow" students,
challenge "bright" students;

and which can help make...

events "real,"
personalities believable,
issues meaningful;

or can...

stimulate discussion,
promote inquiry and discovery,
encourage decision making,
aid in value clarification,
prompt appropriate social
action.³

No one teaching tool reaches these and other goals in Social Studies classes. A comparison of different types of media effectiveness in improving student interest, in stimulating class discussion, and in helping to fix vocabulary is the goal of this study.

Fifth grade students studying a unit on Alaska use the textbook with lectures prepared by the teachers as part of the basic intermediate curriculum in the Community Unit Number 2 Schools, Mattoon, Illinois.⁴ Following this preparation,

³Leonard W. Ingraham, "The Non-Narrative Film: A Social Studies Resource for K-College." Social Education, May 1976, p. 265.

⁴Merle Prunty, This Favored Land. (New York, MacMillan, 1974), pp. 361-375.

the students, working in groups, used media as an aid to reinforce the textbook materials. And finally, the students were tested over the materials to evaluate their retention. This study required the cooperation of cohorts to determine the actual information to be presented. The composition of the unit included geography and history, economy and industry, and people and natural resources. The teachers previewed the media to be used and appropriate bulletin boards were prepared before actual teaching of the unit began. Media chosen for this study were:

16mm films

35mm filmstrips

maps, posters, still pictures

resource unit

library reference books

The thirty-seven students involved in this study were the two fifth grade classes at Franklin School, Mattoon, Illinois.

Identification of the media which produce the best student success provided the Social Studies teachers with a basis for changing and improving this instructional unit on Alaska. Furthermore, the information gained may be useful to other Social Studies teachers.

PURPOSE OF THIS STUDY

The purpose of this comparative study was to determine the effect of different types of media, i.e., 16mm films, maps and charts, used in a Social Studies unit on Alaska with

selected fifth grade students at Franklin School in Mattoon, Illinois.

QUESTIONS

1. Is there any difference in learning noted as a result of using different types of media to teach a unit?
2. Which group showed the most interest on the basis of questions asked?
3. According to a student poll which method did the students like best?
4. What is the relative preparation and execution time for each method?

LIMITATIONS

1. The questionnaire was untested for reliability of its design.
2. The students' intellectual abilities will not be considered in determining the effectiveness of the media.
3. All students were exposed to twenty minutes of lecture prior to their individual group instruction.

DELIMITATIONS

1. The population sampled consisted of the fifth grade students at Franklin School, Mattoon, Illinois.
2. The Social Studies unit, Alaska, was chosen from the curriculum to be studied.

METHODS

1. Choose the techniques of instruction.
2. Divide the selected students into groups of six students each.
3. Determine the amount of time to spend on the unit of instruction.
4. Gather materials and prepare materials and plans.
5. Write a post test.
6. Write a questionnaire.
7. Make arrangements for facilities.
8. Determine scheduling of each group.
9. Teach the unit; a twenty minute lecture for each student.
10. Administer the post test.
11. Administer the questionnaire.
12. Tabulate the results of post test and questionnaire.
13. Prepare report and tables to show the results of the tabulation.

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Use Instructional Films?" Audiovisual Instruction
19 (February 1974): 42-46.

CHAPTER II

REVIEW OF RELATED LITERATURE

Documentation of research involving the use of instructional media in the Social Studies classroom is almost nonexistent. An ERIC search produced no sources. Thus, it is necessary to look at the research about instructional media in the elementary school without specifying subject area to find research literature.

One of the very scarce reports on research in Social Studies is that of Georgiady. The study involved the use of audio-visual materials to promote vocabulary growth. The findings were that "experimental groups using films, filmstrips, and the opaque projector showed larger gains in unit vocabulary than their control groups."¹ Teachers involved in this project indicated that media was of value in motivating learnings. Students in the project preferred situations using media for better comprehension of subject matter.²

¹Nicholas P. Georgiady, Vocabulary Growth in the Elementary Social Studies as Influenced by the Use of Selected Audio-Visual Materials. (Ph.D. dissertation, University of Wisconsin, 1959). Dissertation Abstracts International, 1959, 20/03, p. 922. (L.C. Card No. Mic 59-3188, 216)

²Ibid.

Another noteworthy study explored Social Studies teaching methods. Over 100 teachers considered outstanding by their administrators responded to a questionnaire and then about half of them were personally interviewed. "The audio-visual activities used most frequently were films, bulletin board displays, map exercises, and pictures."³

Two other experiments using media showed no significant difference in retention of materials. McBeath made a study of "20 sixth-grade classes matched in four groups on four variables" to test various ways of presenting a Social Studies lesson. The media used were: a silent captioned filmstrip, a captioned filmstrip with a recorded narration, a 16mm sound filmograph, and a sound filmstrip with a filmograph sound track.⁴ Stickell reported on the comparison of televised and face to face instruction. "...research has consistently shown no significant difference in achievement scores between students taking classes by

³John Elton Lux, Teaching Methods and Activities Used by Social Studies Teachers Rated as Superior by Their Administrators. (Ed.D. dissertation, The University of Nebraska Teachers College, 1959). Dissertation Abstracts International, 1959, 20/02, p. 604. (L.C. Card No. Mic 59-1882, 257)

⁴Ronald J. McBeath, "A Comparative Study of Effectiveness of the Filmstrip, Sound Filmstrip, and Filmograph for Teaching Facts and Concepts. AV Communications Review 9 (July-August 1961): A24-A25.

television or film and those taking classes by the conventional method."⁵

In contrast to the almost negative view of the use of media just mentioned, from research in the 60's, Moldstad claims that:

1. Significantly greater learning often results when media are integrated into the traditional instructional program.
2. Equal amounts of learning are often accomplished in significantly less time using instructional technology.
3. Multimedia instructional programs based upon a "systems approach" frequently facilitate student learning more effectively than traditional instruction.
4. Multimedia and/or audiotutorial instructional programs are usually preferred by students when compared with traditional instruction.

Moldstad based these statements on research accomplished since 1930.⁶

In a study using communications media in the area of science, John G. Church utilized a wide variety of media from very early in the classroom presentation. The techniques he suggests for use with 16mm films and filmstrips promote learning retention. He found, "students are more responsive

⁵David White Stickell, A Critical Review of the Methodology and Results of Comparing Televised and Face-to-Face Instruction. (Ed.D. dissertation, Pennsylvania State University, 1963). Dissertation Abstracts International, 1963, 24/08, p. 3239.

⁶John H. Moldstad, "Selective Review of Research Studies Showing Media Effectiveness: A Primer of Media Directors," AV Communications Review 22 (Winter 1974): 390.

when they know that you are tailoring instruction for them and not routinely going through a whole filmstrip."⁷

Church discusses media as a means to develop new approaches in teaching.

Review of the limited research literature on use of the instructional media in Social Studies produced this collection of studies. But, further study of the literature indicates that much has been written about methods or techniques for use of media as an aid in the classroom. These techniques have not necessarily been tested but rather are hints based upon the experience of educators. Usually, any method suggested is supported by reasoning. Often teachers report what has worked well for them. This information, too, is valuable as background knowledge.

No matter what the subject the media must be suitable to the scope of the subject matter to be covered. The teacher expects "to illustrate the material, to provide a common group experience or to give some substance to a relatively abstract topic" through his use of media.⁸

⁷John G. Church, "Ways to Increase Learning, The Clearinghouse (December 1972): p.256.

⁸Dean Hustuft, "Media in Instructional Process." Educational Technology 13 (December 1973): 611

In the elementary classroom, children must learn to gather information from textbooks. Filmstrips correlated with the basic text have value in helping the student.⁹ Slides and filmstrips are good media for visualization of abstract relationships in the required readings.¹⁰

An analysis of 16mm film use in Social Studies proposed that its value is unique because it provides many experiences. Among these experiences are four of importance. First, film produces a realistic experience. It records reality as it occurs. Second, it recreates experiences. Film records the past, recreates the past and makes history real, exciting, believable. Third, the child's attitude toward a specific problem or idea can be affected by film. Finally, film heightens the enjoyment of learning by the student giving him an esthetic experience.¹¹

Over and over, charts, and pictures are mentioned as on the most common classroom media besides duplicated materials. Charts should be used mainly to illustrate an

⁹Thomas Daniel Kelley, Utilization of Filmstrip as an Aid in Teaching Beginning Reading. (Ed.D. dissertation, Indiana University, 1961). Dissertation Abstracts International, 1961, 22/03, p. 817. (Order No. 61-3213, 127)

¹⁰Charles B. Klasek, Instructional Media in the Modern School (Lincoln, Nebr.: Professional Educators Publications, Inc., 1972), p. 50.

¹¹Ibid., p. 48.

idea or present new information. Pictures stimulate reading by permitting the student to observe and classify; to compare and contrast ideas. They are useful tools to introduce inquiry and problem solving situations as well as a means of reviewing material and testing learning.¹²

In Social Studies, the unit is an organizational approach. The resource unit is a general unit full of a variety of materials from which the teacher selects specific materials for the teaching unit.¹³

Theoretically, instructional media use in the classroom is part of the assimilation phase of an approach to life situation. It provides the student with sensory experience which is a "prerequisite to all learning."¹⁴

The one sense which all these media act upon is that of sight. Students today have a "decided preference for obtaining information and ideas visually." Most education is associated with the left hemisphere of the brain. Reading, writing, and arithmetic are characterized by linear, logical, and verbal operations. Media is associated with learning performed by the right hemisphere which has intuitive,

¹²Dorothy J. Skeel, The Challenge of Teaching Social Studies in the Elementary School, 2d ed. (Pacific Palisades, Calif.: Goodyear Publishing Co., 1974), pp. 245-246.

¹³Edgar Bruce Wesley and William H. Cartwright, Teaching Social Studies in Elementary Schools, 3d ed. (Boston: D. C. Heath and Co., 1968) pp. 146-147.

¹⁴Ibid., p. 234.

holistic, nonverbal, and visual-spatial operations.¹⁵

Mediated environments result in right-hemisphere use.

Rudolf Arnheim believes that visual education is necessary

because man thinks visually--some ideas can only be

expressed visually.¹⁶ This split-brain concept adds

strength to the argument that instructional media techniques

are valuable in Social Studies.

¹⁵Michael P. Grady, "Students Need Media For a Balanced Brain," Audiovisual Instruction 21 (November 1976), p. 46.

¹⁶Ibid., p. 48.

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CHAPTER III
METHODS AND PROCEDURES

For this study, the following media were chosen to be used: 16mm films, 35mm filmstrips, maps, charts, still pictures, a resource unit, and various library reference books.

After deciding upon the various types of media to be used, the thirty-seven participating fifth grade students were divided into groups of equal number. It was determined that each group would consist of six pupils while Group VI would be made up of seven pupils.

Each group would use the text, This Favored Land by Merle Prunty, as their basic reading material to be completed before actual class time and would have twenty minute lectures on their assignments. Then, the additional media would be divided as follows:

- Group I - Films
- Group II - Filmstrips
- Group III - Maps, Charts, and Still Pictures
- Group IV - A Resource Unit
- Group V - Additional readings in library books
- Group VI - No additional media

It was then necessary to determine the amount of time that the unit of instruction would take. It was decided that

five Social Studies periods would be used for the presentation of this unit. Each period was to be approximately sixty minutes long.

Most of the additional media to be used was acquired from the Community Unit Number 2 library. It was ordered a few days in advance so the participating teachers would have a chance to preview it. The films were ordered from the Area Cooperational Film Library in Charleston, Illinois. Plans for the unit were discussed by the cooperating teachers before the actual teaching of it began.

Group I - Film (16mm) - The following films were shown to this group in Room 10 while all other students were working in Room 9. "Alaska - America's Last Frontier" produced by Standard Oil of California, "Alaska - The 49th State (2d Ed)" produced by Encyclopedia Britannica Educational Corporation of Chicago, "Alaskan Sled Dog" produced by Walt Disney Productions, Burbank, California, "Eskimo Children" produced by Encyclopedia Britannica Films, Inc., Chicago, and "Eskimo Family" produced by Encyclopedia Films, Inc., Chicago, IL.

Group II - 35mm Filmstrips - The following 35mm filmstrips were shown to this group by using a corner of the room as a viewing area. "Alaska - Frontier State - A Series": "Alaska - Commerce and Industry," "Alaska - Discovery and Development," "Alaska, The Land and its Resources" "Alaska, The Land and Its People." The above mentioned filmstrips were all produced by Encyclopedia Britannica Films, Inc., Chicago, Illinois.

Group III - Maps, Charts, and Still Pictures -

A map showing the cities, rivers, and geographic features was used. This was produced by Rand-McNally Co., New York. Posters produced by a university student were used. A series of still pictures showing the salmon industry were used. These pictures were produced by the Society for Visual Education, Inc., Chicago, Illinois.

Group IV - A Resource Unit - This unit was produced by Leon P. Minear, Superintendent of Public Instruction, Salem, Oregon. From its contents, various sections on the geographic concepts and generalizations, cities and towns, and historical highlights were used.

Group V - Additional readings from various library books on Alaska were used.

Group VI - This group had no additional media to use. They were allowed to work on other subject area material while other students were working with the various media mentioned above.

A post test was prepared using the accompanying test from the textbook and a teacher-made test added to it. The test was given on the sixth day of the unit. Students completed the test within 25 to 30 minutes. On the day following the test, the students filled out a questionnaire consisting of four questions prepared by the teachers. The results of the test and questionnaire are presented with tables in the next chapter.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study conducted with instructional media as a supplementary aid documents the effects on student learning compared with conventional instruction not using media at all.

The unit on Alaska was presented on five consecutive class days. The post test was administered the sixth class day followed by a questionnaire on the seventh class day. The results of the post test and the responses to the questionnaire are the foundation for the comparison of the effects of instructional media on the performance of fifth grade elementary students. The findings of this study do not consider such variables as the nature of the learner, learning stimuli and their interactions. They are based solely on the actual test performance and the preference of students on the questionnaire.

Post tests results were low. The range of scores is between 92 and 35. The median score was 62. The bimodal scores were 65 and 62. The mean score for the test was 61.62. Table I--A Summary of Post Test Information--shows the mean percentage on a group basis as well as the raw scores for each group.

TABLE I
SUMMARY OF POST TEST INFORMATION

Group	Scores	Mean Percentage
I. 16mm Films	85, 73, 58, 54 62, 65	66.1
II. 35mm Filmstrips	69, 42, 54, 62 62, 65	59.0
III. Maps, Charts, & Still Pictures	50, 35, 73, 38, 46, 73	52.5
IV. Resource Unit	46, 65, 69, 77, 42, 92	65.1
V. Additional Readings	65, 62, 69, 46, 58, 77	62.8
VI. No Additional	46, 77, 54, 65 62, 58, 92	64.8

Group I using 16mm films integrated with text and lecture material with a mean percentage of 66.1 has the best performance on the test. A significant learning difference appears between this group and Group III which used maps, posters, and still pictures. The effectiveness of the media based upon the mean percentage ranks the groups numerically as follows: First, 16mm films; second, resource unit; third, textbook and lecture; fourth, additional readings in library books; fifth, filmstrips, and sixth, maps, charts, and still pictures.

Next, the results of the questionnaire (See Appendix A) provided information on student preference of media.

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TABLE II
SUMMARY OF YES AND NO QUESTIONNAIRE INFORMATION

Question Number	Question	Response	
		yes	no
1.	Did you learn anything from studying this unit on Alaska?	35	2
2.	Did you enjoy this unit on Alaska?	26	11
3.	Do you think there are better ways to study Alaska than the way your group did it?	24	13
4.	Would you like to try this method for other subject areas?	27	10

From the fifth question on the questionnaire, the media preference of the students is the 16mm films. Twenty-five students indicated films as the media they wanted used in future units in Social Studies. Five students preferred maps, charts, and still pictures, and five students selected filmstrips. Only one student chose library readings, and only one chose nothing extra.

The teachers observed that the group with the most interest judged on the basis of the questions asked in class was the maps, charts, and still pictures group. The teachers noted no major discipline problems occurred during the classtime devoted to the study. A careful record of the preparation and execution time for each method was not maintained by the teachers but it is estimated that each method required about twenty-five minutes to prepare.

The study indicates that instructional media are valuable as supplements to the conventional method. In comparing the media, the students using films and the resource unit did slightly better on the post test. The maps, charts, and still pictures appeared to have the least value in the teaching of this unit on Alaska.

RECOMMENDATIONS

Based on the findings of this study the following is recommended:

1. That elementary teachers, when teaching about Alaska, give prime consideration to the use of 16mm films.
2. If a study of this nature is done again, it is recommended that larger groups of students be employed for each group.
3. It is recommended that a study similar to this one be done in other subject areas.
4. It is recommended that in a future study, the lecture and use of the textbook be eliminated.

APPENDIX

A.

QUESTIONNAIRE

1. Did you learn anything from studying this unit on Alaska?
2. Did you enjoy this unit on Alaska?
3. Do you think there are better ways to study Alaska than the way your group did it?
4. Would you like to try this method for other subject areas?
5. Which media would you like to use for future units?
(films, filmstrips, additional readings, maps, charts, and still pictures, or nothing extra)

B.

POST TEST ON ALASKA

Check the correct answers or endings or fill in the blanks.

1. In what important way is the Alaskan frontier different from the frontier during the westward movement?
 - a. It is uneven and ragged rather than a straight line.
 - b. It is not a farming frontier.
 - c. It is moving much faster.

2. Which two of the following are important problems in the development of Alaska?
 - a. The great distance between Alaska and the rest of the U.S.
 - b. Lack of interest in developing Alaska's resources.
 - c. The natural environment of Alaska's interior.
 - d. The hostility of the Eskimos and Indians who live in the outer fringe.

3. In what way does the gold rush to the Yukon in 1896 remind you of that to California in 1849?
 - a. In both places gold mining has continued to be an important industry.
 - b. The Indian natives of the area where gold was found claimed the deposits as theirs.
 - c. The hope of finding gold brought more development than did the gold itself.

4. Closely related to Alaska's chief present-day industry is a skill that the Russians learned from the Indians: how to fish for _____.

5. Alaska's coastal forests provide the raw materials for the state's
 - a. shipbuilding industry.
 - b. pulp and paper industry.
 - c. turpentine and resins industry.

6. The biggest question that was raised by the discovery of oil on the North Slope was:
- a. are the reserves as large as estimated?
 - b. How much sulfur and other chemicals does the oil contain?
 - c. How will we get it to where it can be used?
7. The Alaskan pipeline will bring the oil
- a. to the southern coast of Alaska, where it will be transferred to tankers.
 - b. down across Canada to the central U.S.
 - c. along the Alaskan Panhandle through British Columbia to Seattle.
8. The greatest changes in transportation in Alaska have been brought about by the
- a. Alaska Highway.
 - b. airplane.
 - c. snowmobile.
9. Life in Alaska is easier than it used to be mainly because
- a. people have learned ways to live in the cold climate.
 - b. the climate has become somewhat warmer.
 - c. newcomers now settle in towns or villages, rather than in the open country.

Circle the correct answer:

10. Alaska's state bird is the: Sparrow, Willow Ptarmigan, Robin.
11. Alaska's state flower is the: violet, sunflower, forget-me-not.
12. Alaska's state flag has the (big dipper, little dipper, pine tree) on it.
13. The capital of Alaska is: Anchorage, Juneau, Fairbanks.
14. The largest city in Alaska is: Anchorage, Juneau, Fairbanks.
15. The highest mountain in the United States is in Alaska. It is: Mt. Alaska, Mt. Whitney, Mt. McKinley.
16. In 1959, Alaska became the (48th, 49th, 50th) state.

17. In 1728, Vitus Bering, discovered several islands near the coast of Alaska and claimed the land for (Spain, Russia, Ireland).
18. In 1867, Alaska was sold to the United States. It was considered by most as a (wise, poor, excellent) buy at the time.
19. What was found in the Yukon Valley in 1896 that caused towns to grow up overnight and population to grow rapidly? _____
20. (Lumbering, Fishing, Mining) is Alaska's main industry.
21. (Bass, Salmon, Perch) is Alaska's biggest and most important fishing catch.
22. Today, Alaska is valuable for its (gold mines, oil, scenery).
23. The (sleighs, trains, airplanes,) are the most important vehicle for travel in Alaska.
24. One of the concerns about the Alaska pipeline has been the need to protect the migration route of the (geese, seals, caribou).
25. In 1968 oil was found around (matanuska Valley, Prudhoe Bay, Brooks Range).