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A STUDY TO DETERMINE THE EXTENT CONSERVATION IS BEING TAUGHT IN THE BUTTE ELEMENTARY SCHOOLS

by

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of

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ABSTRACT

The purpose of the study was to determine if conservation was being taught in the elementary schools in Butte, Montana.

By means of a semi-structured interview, a random sampling of thirty-five out of a total population of 212 elementary classroom teachers were interviewed. Music teachers, remedial reading teachers, and other special teachers were not included. A table of randomized numbers was used to select the teachers to be interviewed.

Questions ranged from "do you teach conservation in your room" to "do you teach the conservation and/or pollution of water, air, land, forests, and wildlife?" Teachers interviewed were also questioned as to the specific things they taught in each area listed above in the questions. Interviewed teachers were asked to respond to any particular area of conservation which they taught but about which they were not specifically questioned. The teachers were also asked what media they used in teaching conservation. The last question asked what they would like to see being done to improve the teaching of conservation.

Among media which was mentioned as being used to teach conservation were science textbooks, discussions, films, resource persons, newspapers, and pamphlets. Specific areas in which teachers taught conservation were listed. These are too great to enumerate, but briefly include items taught in the areas of teaching conservation of water, air, land, forests, and wildlife. Responses to what the teachers would like to see being done to improve teaching conservation were involvement by the teacher and student, a course of study, more field trips, a city-wide resource center, conservation kits, and preparing an idea book of things to do about teaching conservation.

Ninety-four per cent of the teachers interviewed stated that they taught conservation. The conclusions were that conservation was being taught and also being taught in correlation with other subjects which complies with Montana Law. However, there was a lack of uniformity of media used and specific areas covered in the teaching of conservation. Recommendations were made to implement a program of teaching conservation.

Chapter 1

INTRODUCTION

During the past several years, new conservation words have entered our vocabulary. Such esoteric terms as population explosion, ecology, and environment are now spoken by laymen quite readily.

Book titles such as The Population Bomb, The Hungry Planet, and Famine 1975 are just a few trying to convey the point that mankind is in trouble. Maybe the authors of these books are doomsday prophets. Should we or should we not study conservation to find out if we really are in trouble and what we can do about it?

In Montana, the answer to the previous question must be answered in the affirmative. School Laws of Montana (13:181) section 75-2013 states that after September, 1951, conservation education is to be taught in the public elementary and secondary schools of the State.

Statement of the Problem

The problem was to determine the extent conservation was being taught in the Butte elementary schools.

The problem of this study was threefold:

1. To determine if teachers were teaching conservation in the elementary schools at Butte, Montana.

2. To determine what was being taught in the field of conservation.

3. Is there a uniform set of curricular materials being used?

Purpose of the Study

Montana Law requires that conservation be taught in the public school system. This study was important not only in determining the extent to which conservation was being taught, but it also made recommendations of the areas in which the teaching of conservation was deficient and what could be done to improve the instructional methods in these areas.

General Questions to be Answered

The questions answered in this study were:

1. Was conservation being taught in the elementary schools in Butte, Montana?
2. What was being taught in the field of conservation?
3. Is there a uniform set of curricular materials being used?

General Procedure

A survey instrument was prepared and submitted to a selected group of teachers in the elementary schools at Butte, Montana. The survey was conducted through the use of personal interviews. Information obtained from the interviews was tabulated and percentages of positive responses to the questions asked in the interviews were made. Questions were asked as to what specific things were being taught in conservation. These questions asked what was being taught with regards to the conservation and/or pollution of water, air, land, forests, and

wildlife. One question asked what media the teacher used in teaching conservation. The last question asked what the teacher would like to see be done to improve the teaching of conservation. Information from these questions was recorded and recommendations were made.

Limitations

The study was limited to gathering information concerning the teaching of conservation in the elementary schools, grades one through six. The study was further limited to the problems involved in teaching conservation at Butte, Montana. Due to the fact that the study of conservation was made from one city, no recommendations nor implications were made on a state-wide basis.

Definition of Terms

Conservation. The wise care or use of our natural resources.

Ecology. A branch of biology which deals with the mutual relations among organisms and between them and their environment.

Environment. The aggregate of all the external conditions and influences affecting the life and development of an organism. The surrounding conditions, influences, or forces, which influence or tend to modify.

Motivated Need. A feeling which permits a person to recognize

those values which cannot be proven on a cost-benefit basis but which are so vital to human emotional development and well being.

Summary

The importance of conservation of the curriculum is demonstrated in the fact that Montana State Law requires that it be taught in the elementary schools.

The study was primarily concerned with the manner in which conservation was being taught and the extent to which the subject was being pursued in the elementary schools in Butte, Montana.

Chapter 2

REVIEW OF LITERATURE

Introduction

The author was unable to locate any research that dealt directly with the problem of whether or not conservation is being taught in the public schools. Literature relating to the population problem, pollution of our water, pollution of air, pollution of land, and the role education should play in teaching conservation is presented in this chapter.

The Population Problem

Ehrlich (6:18) reports the present doubling time of the world's population is every thirty-five years.

In the year 1966, as quoted by Ehrlich (6:38) each person in the world had two per cent less to eat with the distribution not being uniform. It was interesting to note that all of the countries of the world during that same year only ten countries grew more food than they consumed. Those countries were the United States, Canada, Australia, Argentina, France, New Zealand, Burma, Thailand, Rumania, and South Africa. The United States produced more than half of the surplus with Canada and Australia most of the rest. China, India, and Russia were not included in the list.

The Paddock brothers (11:39) report that the economist Thomas

Malthus explained the increase in food production is an arithmetical progression; i.e., 1, 2, 3, 4; whereas population increase is a geometrical progression; i.e., 1, 2, 4, 8. One hundred seventy-five years ago this theory was brought into focus. The theory still stands; however, increased technology was not a consideration of the proposed disastrous course.

If for no other reason, the population explosion could be a problem due to the pollution of land and the oceans. It has been theorized by Ehrlich (6:18) that if the present rate of population increase were to continue the population of the entire earth's surface including land and ocean would be 100 persons per square yard in 900 years.

Pollution of Our Water

Moss (8:51) reports that more than a century and a quarter ago Henry David Thoreau and his brother spent a week rowing on the Concord and Merrimack Rivers above Lowell, Massachusetts. Even in that day these rivers had excess amounts of wastes from factories located along their banks and excess amounts of human wastes.

Wright (15:98) cited that a group of scientists in 1964 tested Lake Erie and found in a series of studies that the lake was to be termed dead due to the lack of oxygen which is necessary to sustain marine life in the lake.

Moss (8:123) reports that pollution has rendered swimming in the Potomac River both unpleasant and hazardous. Diseases may be contacted from the spray of the water below St. Louis on the Mississippi rendering swimming and canoeing on this section of the river impossible.

DDT was used to spray a beach greatly infested with flies. Naturally, some of the DDT was sprayed into the waters by the beach. A week later another plea was received. An epidemic had littered the beach again with this time tons of fish. Flies were attracted from the mainland. This is how it was learned that DDT kills fish (Toynbee, 4:23).

Commoner (4:125) states that large amounts of mineral fertilizers in which phosphate and nitrates are major components are not entirely absorbed by the crops. The remainder runs off into streams and lakes. In an attempt to nourish our crops and raise agricultural production, we help kill our lakes and our rivers.

Water is used to a very large extent here in the United States. About 100,000 gallons of water go into the manufacture of each automobile. Wright (15:5) reports that the sad truth is that the United States is running out of usable water not slowly but rapidly. Borgstrom (3:414) stated that the consumption of water per person per day is 1,500-2,000 gallons in the United States.

Pollution of Air

Strong words of warning are given by Dr. Barry Commoner. In

the opinion of Dr. Commoner, (4:122), the people of earth have reached a turning point in the habitation of this planet. The environment is a complex but yet subtly balanced system. The total effects of pollutants and their interaction can be fatal to the biosphere.

Commoner (4:11-12) reports that lead as an additive to fuel has contaminated the earth's surface. It is found in surface water, crops, and in human blood in which some areas may be approaching toxic levels.

Commoner (4:11) also states that with the burning of fossil fuels the atmosphere has excess amounts of heat due to carbon dioxide. If the Antarctic ice cap were to melt, with different time allowances given of 400 years to 4,000 years, the sea level would raise by 400 feet. This would result in catastrophe for much of the world's inhabited land and many of its major cities lie within 400 feet of the present sea level.

Pollution of Land

Pollution of land takes many forms. One form of pollution most unsightly and obvious is that of refuse. It is noted that the average American family throws away about 750 cans per year according to Packard (10:170). The Gross National Garbage includes not only a small amount of household trash and industrial waste, but it includes larger amounts of agriculture and crop waste, mineral wastes, and

animal wastes. Trash put in garbage cans represents only a small fraction of the total waste. Cities will continue to have the problem of cars being abandoned on streets. This is over a ton of pollution. They are hauled to the dump or to a car graveyard. At the graveyard, a fence is built around them so they are not seen. These cars should be hauled away and scraped.

Osborn (9:52) states that erosion comes about by exposure of the land through wrong use or by denying it the proper water supply it must have. Sir Albert Howard (7:139) mentions that the most widely spread disease of soil may be that of soil erosion. Humus is organic matter decaying by the action of soil life upon it. Soil rich in humus has the ability to hold its own particular weight of water. Chemical fertilizers do not increase the humus in the soil. If heavy rains occur and the soil does not contain sufficient amounts of humus, soil erosion is the result.

The Role Education Plays in Conservation

Toynbee (14:3) states that education is a handing on of a way of life from each generation to its successor. Only animals have instincts; humans must learn what which we know. Education presents the problem and solution to mankind.

Zirzow (5:17) believes our generation must endow those who come after us with a motivated need of values of our natural resources.

The need must be strong enough to perpetuate itself from generation to generation. This motivational need comes through education. But it is advocated one step further than the part of the curriculum during the regular school year. The motivational need is advocated through formal summer school sessions.

Selke (5:7) cites that most State Extension Services employ specialists in the area of soil and water conservation. It is the duty of this specialist to assist county extension workers in handling soil and water conservation education. He is not just a soil and water expert.

Floyd (5:162) believes through school and university teaching a rich appreciation of conservation can be developed.

Arthur (2:214) reports that the need for an appreciation of how and where man fits into his environment, and, regarding the increasing complexity of the ecosystem, the study of human ecology should become an integral part of the education of all. Public information and education about air and water pollution are essential to effectively control environmental corruption.

The American Association of School Administrators (1:271-272) has predicted that by 1976, 76 per cent of all boys and girls will be born and will live in urban areas. This means that an increasing number of children will have less of a chance to learn of the out-of-doors. Along with technological development comes an increase

of tension and pressures of society. Educators will be pressed to develop instructional programs which deal with these tensions. Outdoor education is one means of giving one's thoughts to the origin of food, clothing, and shelter to man's relationship to the physical universe. The American Association of School Administrators believe that the conservation of this nation's resources is the responsibility of administrators, teachers, and children in the classroom. People are turning to research and programs of education to meet problems of conservation.

Summary

Problems of conservation and pollution were shown in several areas. Literature citing a need for an awareness was presented. Hopefully, education of the masses will solve the problems of pollution.

Chapter 3

PROCEDURES

Introduction

The general problem of the study was to determine the extent to which the elementary teachers of the public schools in Butte, Montana, were teaching conservation in the curriculum. Questions were asked on the instrument to obtain answers to how many teachers were teaching conservation and what specific things of conservation were being taught. How conservation could be taught more effectively was also asked.

This chapter explains how the investigator defined and sampled the population. It gives the questions used on the survey instrument. The information obtained in the interview was tabulated for analysis.

Population Description and Sampling Procedure

The total population of 212 elementary classroom teachers were used for the study. Music teachers, remedial reading teachers, and other special teachers were not used. The elementary schools were placed on a list in alphabetical order. Under each school were listed the names of the first through sixth grade teachers assigned to that particular school. Each teacher was assigned a number. The entire population was assigned numbers ranging from one through 212.

A page of twenty-five hundred, five-place digits which were

randomly assorted was used to determine the initial number corresponding to the person who would be interviewed first. Thirty-five persons were picked for interviews using this random table.

Method of Collecting Data

A semi-structured interview was used to collect the data for this study. This interview method of collecting data was used due to four reasons. Sax (12:202) states the following as reasons for use of this method. The interview is flexible in that the interviewer may change the mode of questioning. The respondent has the opportunity to ask for further information if a certain point is not clear. A third advantage is that it collects personal information and attitudes. If additional information is needed, it can be easily obtained. A fourth reason was that rapport between the interviewer and respondent opens the interview to a non-threatening situation. The respondent is more likely to be open with the interviewer. This method of collecting data adds to the validity of the interview.

The questions asked in the interview were:

1. Do you teach conservation in your room?

2. If the answer to this question is no, does the science teacher or someone else teach it?

3. Do you teach conservation as a separate subject or in

correlation with science, health, or some other subject?

4. Do you teach conservation of and/or the pollution of water? What specifically do you teach?

5. Do you teach pollution of our air? What specifics do you teach?

6. Do you teach conservation of and/or the pollution of land, forests, and wildlife? What specifics do you teach?

7. Do you teach other concepts of conservation or pollution about which I have not directly questioned you? Specify what you teach.

8. What media do you use in teaching conservation?

9. What would you like to see done to improve the teaching of conservation?

Method of Organizing Data

Since this study was descriptive in nature, the percentage of affirmative responses to each question or a description of the response or both percentage and description were tabulated.

Analysis of Data

From the findings, conclusions and recommendations were made concerning the areas where conservation could be more effectively taught.

Precautions Taken for Accuracy

Calculation of percentages were done by hand. Percentages were rounded off to the nearest tenth of a per cent.

Summary of Chapter

A total random sample of thirty-five elementary teachers were selected from a population of 212 elementary teachers to determine the extent to which conservation was being taught in Butte, Montana. A semi-structured interview was used to determine percentages. Recommendations relative to how conservation could be more effectively taught was also drawn from the responses obtained by the survey instrument.

Chapter 4

FINDINGS AND INTERPRETATIONS

Introduction

Thirty-five interviews with elementary teachers in the Butte School System showed that conservation was a part of the curriculum in thirty-three interviews. Conservation was taught in correlation with other subjects such as science, health, social studies, and other subjects. In all but two cases during interviews, question number two was deleted from the interview because it did not apply. This question asked if some teacher other than the homeroom teacher instructed conservation.

Findings in the Interviews

The first question of the interview was: Do you teach conservation in your room?

Thirty-three of the thirty-five (94.3 per cent) teachers interviewed answered in the affirmative. Two respondents had a negative response to this question. This information is given on Table 1, page 19, as well as the other questions of the interview.

The second question was: If the answer to the first question is no, does the science teacher or someone else teach it?

The two respondents who had a negative response for question number one also stated that conservation was not taught by another

teacher. A third respondent stated that conservation was taught in the subjects she taught as well as by the other teacher with whom she exchanged classes. No attempt to interview this person was made because conservation was being taught by the homeroom teacher.

Since two persons interviewed stated that they did not teach conservation, the number of interviews stands at thirty-three. This number remains until question number nine when all thirty-five teachers interviewed again answered this question. No percentage was calculated for question number two.

The third question of the interview was: Do you teach conservation as a separate subject or in correlation with science, health, or some other subject? This question was asked because Montana Law (section 75-2015) states that conservation is to be taught in correlation with other subjects and not as a separate subject.

Thirty-one of thirty-three (93.9 per cent) responded that they taught conservation in correlation with other subjects. Two respondents stated that they taught conservation as a separate subject.

Part of the fourth question was: Do you teach conservation of and/or the pollution of water? A second part of this question is discussed later on in this chapter. That question was: What specifically do you teach about conservation or pollution of water?

Thirty-one of thirty-three (93.9 per cent) stated that they did teach conservation or pollution of water. Two respondents stated that

they did not teach conservation or pollution of water.

The fifth question was: Do you teach pollution of air? The results of another part of this question are included later in the chapter. This question asked: What specifics of air pollution do you teach?

Thirty-one of thirty-three (93.9 per cent) responded that they did teach the pollution of air. Two responded that they did not teach pollution of air.

The sixth question of the interview was: Do you teach conservation of and/or the pollution of land, forests, and wildlife? The second part of this question was: What specifics do you teach? This question is discussed later in this chapter.

Thirty-one of thirty-three (93.9 per cent) respondents stated an affirmative answer to question six.

The seventh question of the interview was: Do you teach other concepts about conservation or pollution we have not talked about in the previous questions of the interview? The second part of the question was: What do you teach? This part of the question will be reported on later in this chapter.

Fifteen of thirty-three (45.5 per cent) stated that they did teach other things regarding conservation. Eighteen of thirty-three (54.5 per cent) responded that they did not teach anything else.

The eighth question was: What media do you use in teaching

conservation? A detailed discussion of question eight and nine is found on pages 24 and 25.

The last question was: What would you like to see being done to improve the teaching of conservation?

Thirty of thirty-five (85.7 per cent) had comments to make on the implementing of a better program. The comments are found on pages 25 and 26.

Table 1

Percentage of Affirmative Responses in the Personal Interview

No.	Question	Percentage
1.	Do you teach conservation?	94.3
2.	If answer is no, does another teacher teach it?	No percentage taken
3.	Do you teach conservation in correlation with other subjects?	93.9
4.	Do you teach conservation or pollution of water?	93.9
5.	Do you teach pollution of air?	93.9
6.	Do you teach conservation or pollution of land, forests, and wildlife?	93.9
7.	Do you teach other concepts we have not talked about?	45.5
8.	What media do you use in teaching conservation?	No percentage taken
9.	Could you name some ways to improve teaching conservation?	85.7

Findings of Question Four

The first part of this question was reported on pages 17 and 18. Reported here are the results to the second question on this part of the interview. The question was: What specifically do you teach about conservation of and/or the pollution of water? A summary of the responses to question four is shown in Table 2.

Table 2

Percentage of Responses About Specific Things Taught About Water Pollution

Subject Covered About Water Conservation	Percentage of Times Mentioned in Interviews
What pollution does to swimming	9.1
What oil spills do	18.2
What pollution does to fishing and boating	27.3
What industrial pollution does	27.3
What detergents do	9.1
Do not throw things into water	36.4
Repair water faucets which leak	3.0
Do not let water run while washing hands	6.1
What happens to wildlife	9.1

These responses were made in answer to question number four. What pollution does to water sports, such as swimming, was reported by the teachers 9.1 per cent of the time in the interviews, what it does to fishing and boating by 27.3 per cent, industrial pollution by 27.3 per cent, oil spills by 18.2 per cent, detergents by 9.1 per cent, and do not throw things into the water by 36.4 per cent of the teachers.

Among other responses mentioned in regard to pollution or conservation were: repairing faucets which leak, not letting water run while washing hands, and what happens to wildlife because of pollution.

Findings of Question Five

The results of the second part of question five are reported in Table 3. What specifics do you teach about pollution of air? The teaching of pollution of our air and how it affects our environment was mentioned in 21.1 per cent of the interviews, car exhaust by 36.4 per cent, smoke from factories by 45.2 per cent, filters should be put on stacks of factories by 6.1 per cent, dust particles in the air by 21.2 per cent, and why it would be better not to use combustible engines in 21.2 per cent of the interviews. Why one should not burn garbage was mentioned by 24.2 per cent.

Table 3

Percentage of Responses About Specific Things Taught About Air Pollution

Subject Covered About Air Pollution	Percentage of Times Mentioned in Interviews
How polluted air affects our environment	21.2
Car exhaust	36.4
Smoke from factories	45.2
Filters should be put on stacks of factories	6.1
Dust particles in the air	21.2
Why it would be better not to use combustile engines	21.2
Burning garbage	24.2

Findings of Question Six

The first part of this interview question was reported on page 18 with the findings. Answers to the question, "What specifics do you teach about conservation or pollution of lands, forests, and wildlife?" are listed in Table 4.

Table 4

Percentage of Responses About Specific Things Taught About Conservation of Land, Forests, and Wildlife

Subject Covered About Land, Forests, and Wildlife Conservation	Percentage of Times Mentioned in Interviews
Littering	18.2
Make sure camp fire is out when leaving camp	18.2
Effects of forest fires on wildlife and timber	30.3
Why there should be hunting seasons	15.2
How chain of life is maintained by not killing birds	6.1
Recycling beer cans	6.1
Soil erosion	36.4
Advantages of land fill dumps	3.0

Littering was listed during 18.2 per cent of the interviews, make sure the camp fire is out when leaving camp by 18.2 per cent, effects of forest fires on wildlife and timber by 30.3 per cent, why game animals have to be thinned by hunting seasons by 15.2 per cent, and how soil erosion pollutes our lands by 36.4 per cent. Other responses included: how the chain of life is maintained by not killing birds, picking up beer cans to be recycled, and advantages of land filled dumps.

Findings of Question Seven

Responses to the first question of this part of the interview were reported on page 18. Here are the results of the second question of this part of the interview. The question was: What specifics do you teach about in conservation that we have not already talked about? A summary of the answers to question seven is shown in Table 5.

Table 5

Percentage of Responses About Different Things Taught About Conservation

Subject Covered About Conservation	Percentage of Times Listed in Interviews
Do not waste food	3.0
Noise pollution	6.1
Keeping clothes clean	6.1
Super sonic transport	6.1
Recycling	3.0
Smoking	3.0
The use of chemicals	3.0
Killing Beavers for making hats	3.0
Taking care of textbooks	3.0
Conserve paper in school	3.0

The answers listed included: Do not waste food, noise pollution, keeping clothing clean so parents do not have to buy new clothing, the super sonic transport, recycling, smoking, the use of chemicals and how it destroys wildlife, and the greed of man for killing beavers for making hats. Conservation of paper used in school and children should take care of textbooks because their parents pay for them through taxes

were each mentioned.

Findings of Question Eight

Question eight was: What media do you use in teaching conservation? Table 6 lists the responses given by teachers to question eight.

Table 6

Media Used in Teaching of Conservation

Media	Percentage of Teachers Who Used Media
Textbooks	24.2
Discussions	27.3
Art	12.1
Films	30.3
Resource persons	9.1
Weekly Readers	36.4
Ranger Rick	6.1
Magazines	12.1
Experimental boxes	3.0
Bulletin boards	15.2
Oral reports and compositions	6.1
Newspapers	21.2
Pamphlets	18.2
Library books	9.1
Simple experiments	3.0
Overhead projectors	6.1
Field trips	6.1
Writing letters to officials	3.0
Actual involvement	3.0

Among media of teaching conservation, textbooks were mentioned by 24.2 per cent, discussions by 27.3 per cent, art by 12.1 per cent,

films by 30.3 per cent, and resource persons by 9.1 per cent. Weekly Readers were mentioned by 36.4 per cent of the teachers, Ranger Rick (a magazine), magazines, experimental boxes, and bulletin boards were other devices used. Oral reports and compositions, newspapers, pamphlets, library books, simple experiments, overhead projectors, field trips, writing letters to governmental officials, and actual involvement were also approahces to teaching conservation.

Findings of Question Nine

Question number nine was: What would you like to see being done to improve the teaching of conservation? A complete tabulation of the responses to question nine is shown in Table 7.

Table 7

Ways to Improve Conservation Teaching

Ways to Improve Conservation Teaching	Percentage of Times Listed in Interviews
More involvement by teacher and student	8.6
A course study or guideline	5.7
An organized program	5.7
More field trips	11.1
Resource people	20.0
A city-wide resource center	2.9
Ranger Rick magazine in primary grades	2.9
Conservation kits	2.9
More pamphlets	8.6
Teachers could do more about conserving supplies	2.9
An idea book	2.9
More teacher training	2.9

Involvement by teacher and student was mentioned along with a course of study or guidelines, an organized program, more field trips, and resource people to give lectures at the understanding level of the students. A city-wide resource center was mentioned, having Ranger Rick magazine in primary grades, having conservation kits, more pamphlets available, teachers setting the example by conserving supplies, an idea book, and more teacher training in the area of conservation were among the ideas listed for program improvement.

Summary

Percentages of affirmative answers to questions asked during personal interviews were taken. Responses to specific questions as to what was being taught were also recorded. Recommendations to what should be included in a better teacher-learning situation were made on pages 28 and 29.

Chapter V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The problems of this study were to determine if conservation was being taught and to determine what was being taught. A survey instrument was prepared and personal interviews were given to teachers in the elementary schools to determine answers to the problem.

Questions and Summary of Findings

The questions of the study were:

1. Was conservation being taught in the elementary schools in Butte, Montana?

2. What was being taught in the field of conservation?

3. Is there a uniform set of curriculum materials being used?

The findings in answer to these questions were that conservation was being taught in the elementary schools. Table 1 on page 19 shows that conservation was being taught by 94.3 per cent of the teachers interviewed.

Tables 2 through 5, pages 20 through 23, respectively, show that there was a diverse area of subject matter being taught in conservation.

Conclusions

It was found that there was a high percentage of teachers

interviewed who were teaching conservation. The study showed that there was a lack of uniformity of specific areas covered in the teaching of conservation. There was also a lack of uniformity in the use of media to teach conservation.

Recommendations to Implement a Better Teaching-Learning Situation

Any and/or all of the following would implement a better teaching-learning situation. The investigator made the following recommendations based upon findings of the interviews and conclusions of the study. It must be noted that the following list does not represent any hierarchy of needs. The following recommendations are made:

1. A course of study or guidelines for the teaching of conservation be constructed.

2. A city-wide resource center which contains films, conservation kits, magazines, and other teaching aids to facilitate the teaching of conservation be developed.

3. An idea book which contains how to demonstrate different concepts should be written.

4. That more lectures by resource people knowledgeable in the field of conservation who can communicate with the students be arranged.

5. Conservation booklets or magazines should be made available at all grade levels.

6. There should be more field trips.

7. It was recommended by teachers interviewed that classes should have more actual involvement rather than reading about conservation.

Summary

This paper was prepared to show that there is a problem of pollution and a need for conservation. Hopefully, education is a means to solving problems of this nature. It is hoped that this paper serves to show there is a present and continued need for the teaching of conservation. This paper would serve a greater value if the administration would also see the need of a united effort in teaching conservation in the Butte Public School System and implement some of the recommendations made.

APPENDIX

QUESTIONS ASKED BUTTE TEACHERS DURING PERSONAL INTERVIEW

1. Do you teach conservation in your room?

2. If the answer to this question is no, does the science teacher or someone else teach it?

3. Do you teach conservation as a separate subject or in correlation with science, health, or some other subject?

4. Do you teach conservation of and/or the pollution of water? What specifically do you teach?

5. Do you teach pollution of our air? What specifics do you teach?

6. Do you teach conservation of and/or the pollution of land, forests, and wildlife? What specifics do you teach?

7. Do you teach other concepts of conservation or pollution about which I have not directly questioned you? Specify what you teach.

8. What media do you use in teaching conservation?

9. What would you like to see done to improve the teaching of conservation?

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