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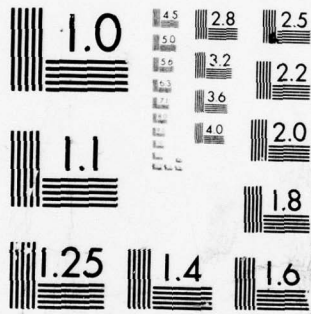
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scrutiny of many published sources that no reports could be found of the planned use of the dog as an aid in therapy with disturbed children".¹⁶ This writer's search of the literature would seem to bear out this point, particularly as it regards

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THE ROLE OF ANIMALS IN ELEMENTARY EDUCATION:
A PILOT STUDY.

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A PLAN B PROJECT

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Submitted in Partial Fulfillment of
the Requirements for the Degree of
Master of Public Health

19 Master's thesis

by

10 DANIEL A. DENOON DVM, MPH

11 1978

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ADVISOR

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SUMMARY

Interviews with twenty teachers in elementary schools indicated thirteen had used animals in their classrooms. Hampsters, gerbils, and fish were the most frequently used species. Seven teachers kept animals primarily for observation and pleasure. Other uses included teaching responsibility, sex education, and biological experiments. Three teachers had drawn on published background information for educational uses of animals, and five had consulted animal care books for care and feeding. Potential zoonotic disease transmission was considered by two teachers. Non-use of animals was attributed to the lack of published teacher guides, the potential for increased personal liability due to animal bites and zoonotic disease transmission, the lack of knowledge for care and feeding, mess/odor, and the problem of animal care during holidays.

THE ROLE OF ANIMALS IN ELEMENTARY EDUCATION:

A PILOT STUDY

The role of animals in elementary education is at present largely limited to the study of traditional subjects such as science and nature.^{9,21} Teachers want their students to learn about animals' lives, where they live, and how they interact.^{11,24,30,31} In many cases animals are used in the classroom for studying nutrition, behavior, anatomy, and physiology.

Some educators have found non-traditional uses for animals as well. In one classroom the death of an animal is described as serving as the impetus for a discussion of human death.¹³ In another classroom animals are used as models for discussions about family life, human sexuality, and reproduction.²⁵ Some innovators have developed art programs utilizing animals as subjects for the child to express creativity in art.²⁰

Unfortunately, there are few publications to be found in the current literature describing sound data based uses of animals in the elementary classroom, or data reports of major research studies undertaken to explore the subject. It is the purpose of this report to describe a pilot study initiated to establish preliminary data that may be of use to individuals interested in planning further research in this subject area.

MATERIALS AND METHODS

Twenty elementary school teachers representing three separate schools were selected after referral from their individual school principals. Since this was a pilot study, no attempt was made at obtaining a statistically valid sample; however, efforts were made to interview an equal number of teachers with varying lengths of teaching experience from each school. Equal numbers were also selected from each grade level, first through sixth grade. Both users of animals in the classroom as well as non-users were interviewed. Teachers were interviewed individually.

Interviews were conducted utilizing an interview format consisting of a series of questions dealing with demography of the teachers, species of animals used, source information for animal use, perceived educational benefits of animal use in the classroom, animal care, and zoonotic disease considerations. Participants were encouraged to respond objectively first, and then to add any subjective comments they felt appropriate. Interviews were purposely held to a maximum of thirty minutes to lessen the potential for boredom and/or antagonism.

RESULTS

Teaching experience in years for the teachers interviewed ranged from one year to twenty-eight years with a median level of 6.5 years. One of the twenty teachers held a masters degree, and the other nineteen were working on some kind of postgraduate program. No correlation between experience and/or educational level was detected with the use or non-use of animals in the classroom.

An educational use of animals at some time during their teaching careers was indicated by thirteen of the twenty teachers interviewed. Hampsters were used by six teachers, gerbils by six, fish by six, rats by three, snakes by two, baby chicks by two, guinea pigs by one, mice by one, a rabbit by one, and a dog by one. Multiple species utilization was indicated by seven teachers. The primary purpose of having animals in the classroom, as perceived by seven teachers, was for observation and pleasure. Two teachers used the hatching of baby chicks and two other teachers used the birth process of gerbils or hampsters as supplementary material for sex education. Two individuals said they were trying to teach responsibility by having the children feed and care for the animals. Ten teachers expressed secondary purposes with responsibility, sex education, observation/pleasure,

and biological experiments being closely grouped together by numbers of responses. Two of the thirteen users of animals had prepared formal lesson plans.

All thirteen teachers with affirmed uses of animals stated that they had used their own innovation in determining their particular applications of animals, and three had drawn on published background information for assistance. Nineteen of the twenty teachers interviewed, indicated that published teachers guides, program plans, or curricula guides for non-biological or non-scientific uses of animals in the classroom were lacking in the teaching profession. Ninety percent; however, said they would use publications concerned with non-biological or non-scientific educational animal uses if developed and made available.

In assessing the benefits derived by their students from scholastic animal uses, twelve of the thirteen users of animals felt the practice kept their students occupied during free time and, therefore, out of mischief. Nine felt the children "liked" the animals. Four teachers were unsure of any benefits derived, but felt that since some children never had the opportunity to own animals of their own, an appreciation for animals' rights was gained by observing the animals in the classroom.

All seven teachers who had not used animals in the classroom, cited the non-availability to the teaching profession of published

teachers guides, program plans, or curricula guides as the primary reason for their non-use. Five were also concerned that they might be held personally liable should one of their students be bitten or contract a zoonotic disease from an animal kept in the classroom. Lack of knowledge of animals as related by three teachers, the dislike of animals by one teacher, the distaste for mess/odors by one teacher, and the difficulty in arranging for feeding and care during holidays by two teachers were cited as additional reasons for not keeping animals in the classroom.

From a veterinary medical standpoint, sixty percent of the teachers stated they had very little knowledge in caring for and feeding animals. All thirteen users of animals indicated they relied primarily on their own knowledge and background for care and feeding. Five teachers stated they had read animal care books for supplemental knowledge. Additional animal care sources included the seeking of advice from a pet shop by one teacher, from a contemporary by two teachers, from a veterinarian by one teacher, and from their own students who owned particular subject animals by three teachers. Seven users of animals indicated they had no knowledge of the potential for zoonotic disease transmission. Two teachers had considered the potential and had obtained from pet shops what they believed to be "disease free" animals for use in their classrooms.

DISCUSSION

Owing to the small number of non-statistically sampled teachers interviewed, one should be careful in generalizing from this pilot study. It is fair to say that educational uses of animals by the twenty teachers interviewed was at best haphazard. For the most part, these teachers did not appear to have adequate background knowledge concerning educational animal use, but at the same time they expressed interest in gaining more knowledge about the subject. As a group, the teachers were aware of their students' interest in animals, but unfortunately had little knowledge of how animals could be used effectively to take advantage of their students interest. More important perhaps, is the fact that ninety percent indicated they would use animals in their classrooms as teaching aids if adequate and appropriate published information were available.

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4. Nickelson AL, Slesnick IL: Science Teachers are Going to the Dogs. Science and Children. 7: 21-24, 1973.
5. Scott JP, Fuller JF: Genetics and the Social Behavior of the Dog. Chicago, University of Chicago Press, 1965.
6. Singleton CP: The World Inside Out - Interdisciplinary Learning. Theory into Practice. 12: 229-233, 1973.
7. King DC: Conflict Part A, K-3. New York. Center for Global Perspectives, 1976.
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A P P E N D I X A

L I T E R A T U R E R E V I E W

The review of the literature concerning this broad subject area was in general most unproductive. After moderate perusal on my own, a computerized search was initiated which produced a total of only seventy-seven citations. Each citation was reviewed personally, along with a partial review of references cited by published material. In addition, some material was reviewed concerning animal uses for the mentally disadvantaged in hopes of providing data that might be adaptable to classroom animal use.

In analyzing the literature concerning animal uses in the classroom, one must keep in mind what group of students the researcher is zeroing in on. Since the elementary classroom use of animals was chosen for this project, middle and secondary grades (seventh and above) have largely been ignored. It is interesting to note; however, that animals are used much more in the higher grades for science experiments and the teaching of biology.^{33,34}

Even in the lower grades (K-6), animal use in the classroom is directed primarily towards science and biology. Source books similar to those books used in the higher grades are in use in the lower grades as well.^{9,21} These books support the teacher in developing experiments in nutrition, physiology, anatomy and many other subjects. Although these publications seem to have scientific bases, they are cited infrequently as references for professional teaching publications. Perhaps the teaching community is unaware of the availability of such source books.

Many publications deal with the care and feeding of animals in the classroom. One such publication is written as a source book for the care and feeding of gerbils, mice, turtles, hamsters, and parakeets.¹⁹ Most publications reviewed are very straight forward descriptions of housing, handling, care, and feeding of small caged animals. Although not going into adequate depth, most of these publications seem to have at least broken the surface towards teaching responsibility of caring for animals.^{5,4,6,8,11,14,22,24,28,30,31} The reader interested in additional information regarding this more traditional aspect of animal use in the classroom is encouraged to review the bibliographies of the above cited references.

Having explored the more traditional approaches, it is interesting to examine some psychological considerations and other non-traditional uses of animals in education. For years psychologists and teachers have been aware that, especially for children, animals may play a special role in their growth and development.³ Howe and Johnson claim that children should have "first hand experiences with the natural world in order to help them form concepts of living and non-living, of identity, and of causality".¹⁰ They go on to explain, "that children understand cause-and-effect relationships for things with which they are familiar (animals)". Levinson describes the advantages in the use of animals in the therapy of mentally disadvantaged school aged children,¹⁵ but "was surprised to find upon careful

scrutiny of many published sources that no reports could be found of the planned use of the dog as an aid in therapy with disturbed children".¹⁶ This writer's search of the literature would seem to bear out this point, particularly as it regards the use of animals for educational endeavors in the normal classroom. A few exceptions were found, however.

In her article "Do Animals have Belly Buttons", a social worker describes how she set up a curriculum on sex education by using animals as learning models for human sexuality.²⁵ Ms. Quin's step by step approach relies heavily on observation of animals throughout the reproductive cycle. Children are encouraged to ask questions and express their ideas. She is particularly adamant in her opinion that "information and misinformation about sex begins to be transmitted in early childhood. . . . that fifth grade is too late in which to begin comprehensive sex education".²⁵ Lobenz also addresses this subject and further adds fuel for its initiation into schools in the form of planned curricula.¹⁸ Unfortunately, these are the only two published articles that showed an actual use of animals for sex education. Both showed much foresight and planning.

At the other end of the spectrum of life, this writer was surprised to find the subject of death education addressed. Both Perkes²³ and Koocher¹³ in their separate articles describe the death of an animal as an excellent opportunity to teach children the concept of dying. Although both authors suggest

the untimely death of a classroom animal as the impetus for a discussion on death, they both are quick to point out that teachers must be adequately prepared for these discussions. An understanding of the child's conception of death, plus guidelines to deal with the unexpected are necessary.²

Some educators are aware of the potential uses of animals and have taken steps towards better utilization. King, in the first of his rather lengthy series of "Global Perspectives" for curriculum development, gets into the area of social studies.¹² In a very effective manner, he offers lesson plans utilizing the observation of animal behavior as a model for family, group, neighborhood, and community conflict analysis. The reasons for conflict and the consequences are subjects for discussion. This writer finds this a particularly interesting publication.

Although science oriented, Doughty and Richiger have developed a series of lesson plans utilizing animals as objects from which students may visualize and feel various artistic components such as shape, texture, and color.⁵ It is felt that animals allow for more creative imagery when dealing with art forms. Another author takes a similar approach in drawing on student imagination with art forms. Along with animals, a background of the environmental influences affecting animals is stimulated by observing animals in their habitat and allowing the students to conceptualize their impressions through art forms.²⁰

A similar approach to studying ecology was also demonstrated

by two different authors.^{7,27} In both articles "nature's way" is demonstrated by observing how various ecosystems affect the lives of animals. The attempt is made to also demonstrate how we as humans may fit into these ecosystems. Good data based material would certainly add to this most interesting use of animals.

This writer found it quite interesting that a teachers' guide had been prepared that utilized animals as an aid to teaching English composition.³² By animal observation students are stimulated to verbalize both orally and in written form. This is accomplished by asking the children a series of questions concerning what they observed by watching a specific animal. The students in turn use their own imaginations to write a composition. It is thought that the process of seeing and writing is better than listening and writing.

Describing the literature thus far has seemed rather hit and miss regarding subject matter. This is to be expected when so broad a subject is investigated. What does all this mean? This writer feels that the uses of animals in the classroom is a wide open subject. There appears to be a few individuals willing to attempt novel approaches. Some are good, but most lack sound scientifically based research. The teachers themselves agree when they call for "interdisciplinary learning".²⁹ Others are concerned that too many future teachers are learning antiquated techniques and call for research studies to determine

more appropriate teaching methods.¹ It appears that the use of animals may prove to be one of several approaches lending to better education.

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A P P E N D I X C

I N T E R V I E W F O R M A T

I. DEMOGRAPHIC INFORMATION

School Name?
Grade Interviewee Teaches?
Length of Teaching Experience?
Length of Teaching Experience at Present School?
College Degrees Held?

II. ESTABLISHMENT OF ANIMAL USEAGE

Do you now use or have you in the past used animals in your classroom for educational purposes?
What kind of animals did you use?
Can you explain the purpose or purposes in their use?
Did you use a formal lesson plan?

III. SOURCE OF INFORMATION FOR ANIMAL USEAGE

What source gave you the idea to use animals as an educational experience?
Was this a published source and can you recall the title or author?
Was some other source used I.E.: program plan, teachers guide, another teacher's use of animals?
If using animals was strictly your own personal idea, did you draw on any published sources for background information?

IV. EDUCATIONAL BENEFIT OF ANIMAL USEAGE

What were your students positive and negative reactions to your use of animals in the classroom?
In what ways do you feel your students either benefited or did not benefit from you use of animals in the classroom?

V. ANIMAL CARE

In your use of animals in the classroom what guidelines did you use for their care and feeding?

VI. ZOOBOTIC DISEASE CONSIDERATIONS

Do you know if your school or school district has any guidelines concerning the use of animals in the classroom?
Are you aware of any disease transmitted from animals to human beings?
Did you take into account disease or injury potential in using animals in your classroom?
Have any of your students ever had a zoonotic disease problem?

VII. NON TEACHER PRESENTED PROGRAMS INVOLVING ANIMALS

Has a Veterinarian, humane society officer, pet shop owner, or animal trainer ever presented a program for your students?
Do you have any value judgements concerning these programs?
Are you aware of any such programs being presented to other classes or schools?

A P P E N D I X D

SUMMARY OF DATA COLLECTED

<u>TEACHER NO.</u>	<u>YEARS EXPERIENCE</u>	<u>GRADE TAUGHT</u>	<u>ADVANCED DEGREE</u>
1	9	3-4	No
2	9	3-4	No
3	10	4-5	No
4	6	5-6	No
5	6	Art K-6	No
6	7	Spec Ed. K-1	No
7	11	3-4	Yes
8	5	4	No
9	17	2	No
10	11	1	No
11	28	2	No
12	9	1	No
13	6	4	No
14	10	5	No
15	6	6	No
16	1	6	No
17	6	2	No
18	4	3	No
19	2	1	No
20	1	3	No

TEACHER NO.SPECIES USED

1	None
2	Rats, snakes, gerbils, fish, mice
3	Hampsters, rats, snakes, gerbils, fish
4	Gerbils
5	Dog
6	None
7	None
8	Fish, rabbit, rats, hampsters
9	Hampsters
10	Hampsters
11	Turtles, fish, hatch hen's eggs, hampsters
12	Gerbils
13	Hatch hen's eggs
14	None
15	Fish, hampsters
16	None
17	None
18	Guinea pig, gerbil, fish
19	Gerbil, hampsters
20	None

<u>TEACHER NO.</u>	<u>PRIMARY PURPOSE FOR ANIMAL USE</u>	<u>SECONDARY PURPOSE FOR ANIMAL USE</u>	<u>LESSON PLAN</u>
1			
2	Observation/pleasure	Biology experiments	Yes
3	Observation/pleasure	Sex education	No
4	Observation/pleasure	Biology experiments	No
5	Observation/pleasure		No
6			
7			
8	Observation/pleasure	Teach responsibility	No
9	Sex Education		No
10	Teach Responsibility	Observation/pleasure	No
11	Sex Education	Biology experiments	Yes
12	Sex Education	Observation/pleasure	No
13	Sex Education		No
14			
15	Teach Responsibility	Observation/pleasure	No
16			
17			
18	Observation/pleasure	Teach responsibility	No
19	Observation/pleasure	Teach responsibility	No
20			

STATED REASONS FOR NOT USING ANIMALS IN THE CLASSROOM

No published teacher guides available	- 7 responses
Personal liability in the case of bites or disease contracted by a student from a classroom animal	- 5 responses
Lack of knowledge	- 3 responses
The problem of care and feeding during holidays	- 2 responses
Mess and odors	- 1 response
Does not like animals	- 1 response

<u>TEACHER NO.</u>	<u>SOURCE OF IDEA FOR CLASSROOM ANIMAL USE</u>	<u>SOURCE OF BACKGROUND INFORMATION FOR CLASSROOM ANIMAL USE</u>
1		
2	Own idea	College professor, zoology book
3	Own idea	None
4	Own idea	None
5	Own idea	None
6		
7		
8	Own idea	None
9	Own idea	None
10	Own idea	None
11	Own idea	Library books, college professor, egg hatchery
12	Own idea	None
13	Own idea	Instructions that came with egg incubator
14		
15	Own idea	None
16		
17		
18	Own idea	None
19	Own idea	None
20		

<u>TEACHER NO.</u>	<u>AWARENESS OF PUBLISHED TEACHERS' GUIDES, PROGRAM PLANS OR CURRICULA GUIDES OR NON-BIOLOGICAL ANIMAL USE</u>	<u>WOULD USE PUBLISHED GUIDES IF AVAILABLE</u>
1	Unaware	No
2	Unaware	Yes
3	Unaware	Yes
4	Unaware	Yes
5	Unaware	Yes
6	Unaware	Yes
7	Unaware	Yes
8	Unaware	Yes
9	Unaware	Yes
10	Unaware	Yes
11	Read a short one on hatching hens' eggs	Yes
12	Unaware	Yes
13	Unaware	Yes
14	Unaware	Yes
15	Unaware	Yes
16	Unaware	No
17	Unaware	Yes
18	Unaware	Yes
19	Unaware	Yes
20	Unaware	Yes

TEACHER NO.

PERCEIVED STUDENT BENEFITS

1	
2	Kept students occupied during free time and student enjoyment
3	Kept students occupied during free time and student enjoyment
4	Kept students occupied during free time and student enjoyment
5	Kept students occupied during free time
6	
7	
8	Kept students occupied during free time
9	Kept students occupied during free time and student enjoyment
10	Kept students occupied during free time
11	Kept students occupied during free time and student enjoyment
12	Kept students occupied during free time and student enjoyment
13	Kept students occupied during free time
14	
15	Kept students occupied during free time and student enjoyment
16	
17	
18	Kept students occupied during free time and student enjoyment
19	Student enjoyment
20	

TEACHER NO.

SOURCE OF INFORMATION FOR CARE AND FEEDING

1	
2	Primarily personal knowledge, animal care books, a contemporary
3	Primarily personal knowledge, animal care books
4	Primarily personal knowledge
5	Primarily personal knowledge
6	
7	
8	Primarily personal knowledge
9	Primarily personal knowledge, a contemporary, a pet shop, a veterinarian
10	Primarily personal knowledge, animal care books
11	Primarily personal knowledge, animal care books
12	Primarily personal knowledge, animal care books
13	Primarily personal knowledge
14	
15	Primarily personal knowledge
16	
17	
18	Primarily personal knowledge
19	Primarily personal knowledge
20	

<u>TEACHER NO.</u>	<u>PERCEIVED KNOWLEDGE FOR CARE AND FEEDING</u>	<u>PERCEIVED KNOWLEDGE OF ZOONOTIC DISEASES</u>	<u>ZOONOSES CONSIDERED BEFORE OBTAINING A CLASSROOM ANIMAL?</u>
1			
2	Moderate	Some	No
3	Moderate	Some	No
4	Little	None	No
5	Little	Some	No
6			
7			
8	Little	None	No
9	Moderate	Some	Yes
10	Little	None	No
11	Moderate	Some	Yes
12	Little	None	No
13	Moderate	Some	No
14			
15	Little	None	No
16			
17			
18	Little	None	No
19	Little	None	No
20			

PROGRAMS PRESENTED BY ANIMAL EXPERTS

	SCHOOL A	SCHOOL B	SCHOOL C
By Veterinarian	No	No	No
By Local Humane Society	Yes	No	No
By Local Zoo	No	Yes	Yes
By a Professional Snake Handler	Yes	No	No

OFFICIAL WRITTEN POLICIES CONCERNING ANIMALS

District	-	None
School A	-	None
School B	-	None
School C	-	None

A P P E N D I X E

OBSERVATIONS AND IMPRESSIONS

The intention of this appendix is to bring to light the impressions and observations of this investigator while interviewing the various teachers. These impressions and observations may or may not be valid but at any rate may serve as potential subject areas for further investigation.

This pilot study was accomplished at three schools in the Mounds View Minnesota Independent School District No. 621. Administrative personnel, as well as the twenty teachers interviewed, were extremely easy to deal with. Cooperation at all levels was high. This positive atmosphere was apparently the result of meetings conducted in person between the investigator and all subjects concerned prior to initiation of the pilot study. At these meetings a copy of the project proposal was distributed to each person, the project further explained orally, and any questions were answered. Although this approach was time consuming, it set the stage for the friendly atmosphere encountered later at the interviews.

This investigator feels fortunate in having had such an easy time in interviewing this group of teachers because as one principal put it, "the schools are surveyed to death". He went on to explain that the vast majority of surveyors have made poor impressions on the educators which in general has resulted in a hesitancy on the teachers' parts to participate in such programs. Future investigators would be well advised to handle this very

busy and suspicious group of individuals with "kid gloves" by following the approach used in this study.

Cooperation by the educators was also obtained through their interest in the subject area. Although one teacher said she did not like animals, the rest expressed a keen interest in a student-animal relationship of some kind. Most really had not given much thought to having animals in their classrooms for anything other than observation and enjoyment. When questioned about new approaches to animal use such as death education or teaching language arts, there was generally a pause in the interview while the interviewee thought about it. After the pause more than fifty percent replied that they really had not thought much about it before, but these new approaches may have merit.

Unfortunately, when asked if they might consider trying new and novel approaches to animal use, negativity was encountered. "Yes, if" was the most frequent response. Lack of published teacher guides was the overwhelming qualifier. As evidenced by the results portion of this report, few teachers felt they had adequate knowledge about animals to deal with novel approaches, unless they were provided with additional information to do so. There was a distinct declaration made by the majority that they would not be willing to take the time on their own to develop new programs, but they would use such programs if developed by someone else. This attitude could prove detrimental towards future interdisciplinary research.

One area of the interview dealing with programs presented by professional animal handlers, pet shop owners, and veterinarians was included as a special interest area. Since it did not actually involve individual teachers' use of animals, it was not reported in the publishable report. It was interesting to note that none of the twenty teachers interviewed could remember any programs by veterinarians on animal care having ever been presented in their schools. Individuals from the local humane society and zoo had presented casual programs on exotic animals at two of the schools, and a professional reptile keeper had visited two of the schools with his collection. All three programs had been presented to the entire student body, and the actual educational benefit derived seemed to be approximately the same as a well guided tour of a zoo. Ninety percent of the teachers felt that individual classroom presentations where questions could be answered would be of more benefit to the students.

A summary of the teachers' perceived needs concerning classroom animal use follows. Animals that are easily handled and docile are desired. The teachers want animals that can be held and petted by the children without fear of biting and/or clawing. It appears that this may go hand in hand with the desire for school and/or district policies (there are none in effect in the subject district) concerning animal use in the classroom. Written legal guidelines making the district rather

than the individual teacher liable for untoward injury of students by animals, was perceived as removing a barrier towards the use of animals in the classroom. It was noted that some teachers who had at one time or another kept animals in their classrooms, did not anymore. Disenchantment was detected, but it was apparent that meaningful programs utilizing animals might bring about renewed interest in the use of animals. The key to animal use seemed to be the ready availability of meaningful published program plans. In fact, the rekindled interest in animals resulting from this pilot study brought about a desire for initiation of district wide curricula involving the use of animals.

Regarding programs presented by extracurricular animal experts, an overwhelming opinion was noted. All teachers said they thought their students enjoyed the few programs that had been presented and wished to see more programs but preferred those taking place in individual classrooms as opposed to those entertaining the entire student body. This writer was requested to present such programs by three teachers. Similar programs were also requested to be presented by veterinarians at teachers' workshops. To this writer, this indicated a desire to learn more about animal care and disease prevention in the classroom.

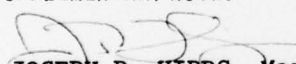
It appears from the results of this pilot study that more research is needed in this broad field. In order to verify the results of the pilot study, a larger study involving a statistical random sample of teachers from a large metropolis

is recommended. Such a study should be expanded to include participation by several disciplines of interest. Educators, psychologists, public health experts, as well as veterinarians and others should be invited to participate. This approach besides providing data would make it possible to evaluate the validity of present animal use more thoroughly.

Once interest is created in the field, and valid data are attained regarding the needs and wants of both teachers and students; it is recommended that further interdisciplinary efforts be instituted to search out new and novel uses for animals in the classroom. It is anticipated that interest will grow in this field, but at regular intervals retrospective studies must be undertaken to evaluate the usefulness and effectiveness of new programs after implementation.

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79-59T

THE ROLE OF ANIMALS IN ELEMENTARY EDUCATION

A PILOT STUDY

I. RATIONAL: Personal observations by this investigator have revealed that a potential may exist for the educational use of animals in the elementary classroom. Being a veterinarian, I have been approached on numerous occasions by teachers with questions on the proper care of animals in the classroom. Upon questioning, these teachers have shown very little knowledge of animal care or more importantly, how these animals might be used to better educate their students. Some teachers have asked how, and unfortunately, I have not had adequate answers.

It is further known that animals have been used to "reach" the mentally disadvantaged youngster, so why can't animals be used to supplement other educational avenues in the "normal" classroom.

II. PURPOSE: Show that a need exists for an interdisciplinary approach to the development of educational plans with scientifically based utilization of animals in the elementary school classroom as aids to improved quality education. It is suggested that there are few, if any, satisfactory methods available at present. Most programs utilizing animals are the result of individual teacher ideas. Although novel, these programs lack scientifically based research by other educators, psychologists, public and mental health specialists, as well as veterinarians and many other experts in allied professions. The need exists ideally for every possible field of expertise to examine the potential uses of animals in the elementary classroom through sound scientifically based research.

III. OBJECTIVE: The objective of this project is to assess the current trends in the classroom utilization of animals for educational purposes by answering the following questions:

1. Are animals in fact being used in the elementary classroom?
2. For what purposes are animals being used in the elementary classroom?
3. What scientific bases are teachers following for the use of animals in the elementary classroom?

78 11 21 00

IV. METHODS: A systematic review of the literature must be accomplished to provide background information regarding the current educational uses of animals. The literature review, although not exhaustive, will include teacher source publications, published professional journal entries, children reference publications, and unpublished teacher guide and lesson plans.

As an approach to getting a "feel" for the subject, field interviews with elementary classroom teachers in the Twin Cities area will be accomplished. These interviews will be of the informal type with the hopes of allowing the teachers to subjectively approach the situation. (See attached interview format and "Consent Form"). It is hoped that this field approach will provide additional data to supplement and enhance the literature review, as well as support or reject the hypothesis that an interdisciplinary research effort involving educational animal useage is needed.

Finally, a summary of the findings will be compiled and offered to the various interdisciplinary communities for review.

V. SIGNIFICANCE: It is acknowledged that the early learning experiences of youngsters are probably the most important processes in one's life and as a result educators are constantly in search of new approaches to learning. It is important although, that what and how children are taught be correct. If in fact animals can be used in the learning process, the benefits are obvious, but they must be used properly. The teaching community if ill equipped to handle this potentially new aspect, must receive guidance from other disciplines of knowledge. Hopefully, by this interdisciplinary approach animals can come to be an important aid in the public elementary education of our youngsters.

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I N T E R V I E W F O R M A T

I. DEMOGRAPHIC INFORMATION

School Name?
Grade Interviewee Teaches?
Length of Teaching Experience?
Length of Teaching Experience at Present School?
College Degrees Held?

II. ESTABLISHMENT OF ANIMAL USAGE

Do you now use or have you in the past used animals in your classroom for educational purposes?
What kind of animals did you use?
Can you explain the purpose or purposes in their use?
Did you use a formal lesson plan?

III. SOURCE OF INFORMATION FOR ANIMAL USAGE

What source gave you the idea to use animals as an educational experience?
Was this a published source and can you recall the title or author?
Was some other source used I.E.: program plan, teachers guide, another teacher's use of animals?
If using animals was strictly your own personal idea, did you draw on any published sources for background information?

IV. EDUCATIONAL BENEFIT OF ANIMAL USAGE

What were your students positive and negative reactions to your use of animals in the classroom?
In what ways do you feel your students either benefited or did not benefit from your use of animals in the classroom?

V. ANIMAL CARE

In your use of animals in the classroom what guidelines did you use for their care and feeding?

VI. ZOOLOGIC DISEASE CONSIDERATIONS

Do you know if your school or school district has any guidelines concerning the use of animals in the classroom?
Are you aware of any disease transmitted from animals to human beings?
Did you take into account disease or injury potential in using animals in your classroom?
Have any of your students ever had a zoonotic disease problem?

VII. NON TEACHER PRESENTED PROGRAMS INVOLVING ANIMALS

Has a Veterinarian, humane society officer, pet shop owner, or animal trainer ever presented a program for your students?
Do you have any value judgements concerning these programs?
Are you aware of any such programs being presented to other classes or schools?

CONSENT FORM

You are invited to participate in a pilot study of the educational aspects of animals in the elementary classroom. We hope to determine the present uses of animals in the classroom with expectations that new programs might be developed to further add to your armamentum of teaching aids. You were selected from the population of elementary teachers in the Twin Cities area as a result of referral by your school principal and/or your superintendent of schools.

If you decide to participate in this study you will be asked to answer several questions concerning if and how you use animals in your classroom, teaching plans involving animals you may be using, and animal care in your classroom. The interview should last no longer than thirty minutes. Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. Your decision whether or not to participate will not prejudice your future relations with your school, school district, or the University of Minnesota. If you decide to participate, you are free to discontinue participation at any time without prejudicing your future relations with your school, school district or the University of Minnesota. If you have any questions, please ask us. If you have any additional questions later, Dr. D. A. DeNoon (786-9744) will be happy to answer them.

You are making a decision whether or not to participate. Your signature indicates that you have read the information above and have decided to participate. You may withdraw at any time. Should you choose not to participate or to discontinue participation in this study after signing this form, you may withdraw at any time without future prejudice from your school, school district, or the University of Minnesota.

SIGNATURE

DATE