

A SURVEY OF THE EFFECTS OF HEALTH AND SCIENCE ON THE SUPERSTITIOUS BELIEFS OF THE GRADES 5, 6 AND 7 PUPILS OF CENTRAL PHILIPPINE UNIVERSITY ELEMENTARY TRAINING SCHOOL

*By Cecilia S. Chan**

1.0 *Statement of the Problem.* This study attempted to do the following:

1. To discover the common superstitious beliefs of pupils.
2. To find the probable factors for superstitiousness among pupils.
3. To find out to what extent the teaching of science can eradicate, counteract, or reduce the superstitious beliefs of pupils.

2.0 *Methods of Procedure*

2.1 *Obtaining the Data.* For reasons that will be explained in subsequent discussions wherever they are pertinent, the basic data for this study were obtained from three different groups of cases with a wide range of variability as to age, experience, educational attainment, and what we may loosely call "social peers."

The core group, or experimental group, whose reactions were followed from the beginning to the end of the study, was made up of ninety pupils from the intermediate division of the elementary training school of Central Philippine University for the school year 1961-62. Thirty-

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eight of these were the Grade Five pupils; thirty-six were the Grade Six class; and sixteen composed the Grade Seven class.

Two comparison groups were provided for this study. The first one was made up of one hundred thirty-five sophomore education students of the University taking up Principles of Education. The other group, twenty-four adults, represented eleven different vocations, all the way from household help to a doctor. Broken down, the group comprised five household helpers, four nurses from Iloilo Mission Hospital, three farmers, a teacher in the College of Agriculture of the University, three Evangelical ministers, one priest, three teachers from the Elementary training department of the University, one teacher from the University High School, one instructor in the University College of Education, a building contractor and teacher, and a doctor.

As we stated above, the group of elementary pupils was the core. It is their superstitious beliefs that were analyzed, and the experimental teaching conducted later was geared to the elimination of these beliefs. The ninety pupils were the total population of the intermediate division of the University in that school year. No attempt was made to enlarge the group because the procedure would have necessitated the use of classes outside of the University, and the employment of another teacher other than the researcher. The effect of these other variables on the study would be difficult to assess. More important was the fact that it actually was a method of attack on questionable attitudes that was being tested, and the standardization of procedure was difficult to achieve when many teachers were to participate. It is admitted that this limitation would produce results that would only be indicative and not conclusive.

2.2 *Making the list of superstitions.* Before the beginning of the school year, the researcher went about looking for adults to interview. Those that she chanced upon are reported as the third group of twenty-four. The objective of the interview was to gather information about, or con-

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fession of the practice of superstitions which relate to different vocations and social groups.

Another collection was taken from the first group. At the beginning of classes in the first semester the teacher of the subject Principles of Teaching was requested to ask the students to submit individual lists of superstitious beliefs which were common in their native towns.

Finally, the subject of superstition was introduced for discussion during the very first day of recitation in Health and Science in the elementary school. After the motivating discussion, the pupils were asked to make a list of superstitious beliefs which they had heard about. This procedure was followed for all the three classes in the elementary department. In order to help the pupils organize their thinking and possibly facilitate recall, they were told that these beliefs may be about health, supernatural beings, religion, natural phenomena, social conduct, occupations. Of course, this preliminary sorting also helped facilitate later tabulation.

A consolidated list was made from the tallied reports of the pupils. This list was compared with those made from the reports of the sophomore students taken from the College of Education and the reports of the group of adults chanced upon by the interviewer. The comparison was planned as a way of confirming the validity of the children's report and as an indication, therefore, of how much of children's beliefs are a reflection of adult's beliefs,

2.3 *Administering the Questionnaire.* The next step was to make a survey of the actual attitudes of the pupils to the superstitions which they reported. A questionnaire was prepared to be answered by the pupils themselves. As a preliminary precaution, the statement of each superstition was studied for difficulty of language. Each was worded in the simplest possible way so that even Grade Five pupils should not find difficulty in comprehending it. Then the items were arranged in six sections according to the

nature of the subject that gave rise to the superstition: Supernatural, social (phenomena), religion, natural (phenomena), health and occupational. Three possible choices were open: (1) to say that they believe in a superstition; (2) to say that they do not; (3) to say that they do not know anything about it. The format was chosen as the handiest for pupils to answer and the easiest for the teacher to tabulate.

Since it was difficult to anticipate all the word difficulties of the pupils under study, the researcher allowed them to ask for the meaning of any expression which they did not understand before they answered.

2.4 *Recording responses and related data.* The pupil's responses were tallied and sorted. Note was taken of the town or region where each of them came from, and this fact was entered in each pupil's record. Another dimension was added to the analysis. Therefore, at this point, the superstitious beliefs have been studied along the following dimensions:

1. Are these beliefs indigenous among children; that is, thought up by fertile imagination? Or, do they reflect adult attitudes?
2. In what grade level are they most commonly known? Or, are they persistent and widespread?
3. How many of them actively bind pupil thinking in that the pupils believe in them?
4. In what kind of region do superstitions seem to flourish as judged from this limited study?

2.5 *Teaching under the Experimental Plan.* The actual experimentation was the next procedure. The researcher wanted to know how much her teaching could influence the thinking of the pupils as regards superstition. It needs to be said at the outset that the year's teaching did not revolve around superstitions: The Department of Education has prescribed the contents of such subjects as Health and Science, in which context the experiment was to be undertaken. The contents are already divided into units of work

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and study. The option for the teacher was the order of presentation of these units, as well as the way she goes about accomplishing the work to be covered.

The teacher studied beforehand what superstitions could best be explained and discussed under each of the units of study. Then when a unit was taken up, and the discussion could naturally be led to superstitions, the pre-determined ones for this units were brought up. In order to lead children to a more scientific view of the phenomena that give rise to the superstitious beliefs, different approaches were resorted to, aside from class discussions. Wherever practicable, experimentations were conducted. If reference materials regarding them were available, the pupils were sent to look for these in the library.

Some superstitions which could not be logically taken up in Health and Science classes were taken up in Social Studies and Character Education. Unfortunately, for these studies, data could not be had for all the cases under study because the researcher did not teach these subjects at all the three grade levels, and the experiment limited the instruction to that which could be conducted by her alone.

During the class sessions, the researcher observed the reactions of the pupils.

2.6 *Readministering the Questionnaire.* At the end of the year, the same questionnaire was administered to the pupils and their answers were again tabulated. A consolidated list for each grade was made from the data gathered, together with the number of beliefs pupils adhered to before and after the experimental teaching.

3.0 *The Teaching Procedure*

Since the teaching procedure is the key activity in this study, it is given here in detail, to show how the teaching about superstition was integrated with the course of study.

Unit I. Matter and Energy. The unit was devoted to the development of the understanding of the nature of electricity and its safe utilization in the home and the community. The period of study was divided among six specific topics. The first, "Static Electricity and Current Electricity," included studies on the cause of electrical phenomena, lighting, and the comparative usefulness of the two kinds of electricity. The second study centered on man-made electricity as exemplified by dry cells. The composition of a dry cell was studied and some of its uses were made clear. The third phase of the study made the pupils understand how a new basic tool like an electromagnet can be derived from a simpler unit like a dry cell. The last four studies concentrated on the uses of electricity in the home, the care one takes in its use, and the conservation of electric power.

The topics were given to the class for study. The class discussed the topics with the teacher as moderator. Whenever it was necessary to prod the class to participate actively, the teacher directly asked questions.

One experiment was performed by the class, the aim of which was to find out which of the following materials are good or bad conductors of electricity: an iron rod, a wooden pole, a rubber sheet or a piece of wire. (See page 64 hereof.) The experiment showed the students that the rubber sheet and wood are not good conductors of electricity, but the iron rod and the wire are.

Whenever it was appropriate to channel the discussion to superstitions, the researcher did so. These were three superstitions that needed to be explained away here. First: "Coconut trees attract lightning." Second, "Do not iron when there is lightning because you will be struck dead." Third, "Cover the mirror when there is lightning because it attracts the lightning."

After the study and the experimentation, the pupils themselves made the following conclusions:

1. Coconut trees do not attract lightning just because

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they are not coconut trees. Since they tend to grow taller than other trees around them they get struck sooner and more often than most other trees, for lightning tends to strike the tallest objects in its path.

2. Since the flatiron is made of iron which is a good conductor of electricity, the person holding the flatiron is in greater danger of being struck by lightning than one who is not using one.

3. The mirror simply reflects what happens outside, including the flashing of lightning. The mirror, then, when covered does not reflect the flashes.

A LESSON PLAN IN HEALTH AND SCIENCE

LABORATORY TECHNIQUE

(Used with Unit I)

Aims:

1. To develop the attitude of scientific investigation to understand the cause and effect of things.
2. To develop the ability to observe and draw conclusions during experimentations.
3. To know the different conductors and non-conductors of electricity.

Subject Matter:

Conductors and non-conductors of electricity.

Procedure:

1. Motivation: I have read from the newspaper of persons who were electric shocked and a child electrocuted while wading in the water during a flood in Manila.
2. Problem: What do you think caused the shock and the electrocution? This is what we are going to find out so that we will not meet the same experience as those people.
3. Presentation: There are objects that are good con-

ductors of electricity and those that are bad conductors of electricity.

- a. Conductors of electricity are those objects wherein electricity passes through easily.
- b. Non-conductors of electricity are those objects wherein electricity cannot pass through easily.

4. Experimentation:

Experiment Guide:

- a. What to find out:

To know the objects that are good or bad conductors of electricity.

- b. What we need:

Dry cells, electric wire, wooden pole, wire, iron rod, rubber sheet.

- c. What to do:

Attach the electric wires around the positive and negative terminals of a big dry cell. Touch the two ends of the electric wire to the wooden pole, then to the rubber sheet. (Teacher asks pupils to touch the wood and rubber sheet) What did you feel? Touch the two ends of electric wire to the iron rod, and wire. (Pupils touch the object) What did you feel?

- d. What we found out:

What objects are good conductors of electricity? What are non-conductors of electricity?

5. Application:

- a. What are conductors of electricity? Name some common objects that are good conductors of electricity.

- b. What are non-conductors of electricity? Name some objects that are poor conductors of electricity.

Unit IV. Our Water Supply. The unit was to develop

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understanding of the water cycle, the importance of water to all living things especially men, the utilization of water for personal use and industry. The study was also to develop appreciation for the importance of water to the existence of all forms of life, and for the government's effort to conserve water and make it safe for people's use.

The period of study was divided among seven specific topics. The first topic included studies of sources of water in general and in the community in particular. The second topic was about the importance of water to living things, particularly the safe utilization of water by man and his industries. The third centered on the water cycle and the process of evaporation and condensation that water undergoes. The fourth is about the effect of running water as an agent in soil erosion and the means by which potable water becomes polluted and unsafe for human consumption. The fifth is about the different ways of making water safe to drink through sedimentation, chlorination, filtration, aeration, distillation and boiling. The sixth is about the different ways of conserving water for home use. The seventh is about what the government does to provide us with water for our use, and the work of the NAWASA to supply the people in the cities with water for human consumption.

The topics were given to the class for study. The class discussed the topics, with the teacher as the interrogator.

One experiment was performed by the class, the aim of which was to show how mud can be removed from water through filtration. The procedure followed is given in Appendix A. The experiment showed that, with the use of layers of small gravel and sand, mud can be filtered from muddy water.

The researcher brought up the superstitious beliefs about water, that had to be explained. First, "When getting water from the spring for the first time, make the

sign of the cross on the water, then make a knot from the grass growing near the spring so that nothing ill will happen to you. If you do not do that, the spirit of the woods will talk ill about you and you will become sick." Second, "When there is a drought, immerse the image of St. John the Baptist in the river and rain will fall." Third, "The first rain in May is holy." Fourth, "When frogs croak, they ask for rain."

After the study, discussions, and experimentation on the unit and the discussion on the superstitions, the pupils made the following observations:

1. Some pupils who themselves had gone to fetch water had not made crosses on the water nor tied some grasses into a knot near a spring, yet nothing ill happened to them.

2. Rain will fall if water in the cloud has reached the stage of heavy condensation. The image of any saint has no power to make rain.

3. The Roman Catholic priests are using the first rain in May for blessing in church and have taught the people that this rain is holy. Yet when other people catch this first rain in May it is not considered holy.

4. Frogs croak because it is frog language and their way of making sound.

Appendix A (Continued)

A LESSON PLAN IN HEALTH AND SCIENCE

LABORATORY TECHNIQUE

(Used with Unit VI)

Aims:

1. To appreciate the works of nature.
2. To develop the powers of observation.
3. To develop skill in handling things during an experimentation.
4. To develop the ability to draw conclusions from the experiments.

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Subject Matter:

Making water safe to drink.

Procedure:

1. Preparation: What are the uses of water? Can water be our enemy? How? What are the different sources of water? In your community where do people get their drinking water? If our drinking water is not safe to drink, what will result?

2. Problem: How can we remove the mud from water and make it safe to drink?

3. Experimentation:

Experiment Guide

a. What to find out:

To know how to get mud out of muddy water.

b. What we need:

Muddy water, cheese cloth, rubber band, lamp chimney, coarse sand, gravel, fine sand, container.

c. What to do:

Invert the lamp chimney upside down and wrap the smaller end with a cheese cloth and tie firmly with rubber bands. Put a layer of fine sand, a layer of coarse sand, and gravel two inches thick for each. Put the lamp chimney over a glass container and slowly pour the muddy water into it.

Observe.

d. What we found out:

What kind of water dripped into the glass container?

4. Application:

Not all clear water is safe to drink. If your supply of drinking water is muddy, in order that it would be

safe to drink, filter the water first to remove the mud, then boil it to kill the germs or drop one drop of iodine, or drop halazons tablets and let it stand for at least 30 minutes before drinking it.

4.0 Findings

4.1 *Summary of methods of procedure.* Eight tasks were undertaken to complete this project: Gathering items of superstitions, integrating those with the course of study, administering a questionnaire, teaching, gathering data on factors suspected to influence superstitiousness, readministering the questionnaire, analyzing and interpreting the data, and drawing up recommendations.

4.2 *Correlation studies.* The relationship of non-superstitiousness to several factors can be summarized thus:

1. With age the relationship was low, the highest r_t being 0.470
2. With sex the correlation was negligible, the r_t being 0.003
3. With religion the r_t was 0.000 which, in this investigation, means that the Roman Catholics and the Evangelicals were just as superstitious as each other.
4. With Health and Science, the relationship was low. In Grade IV, the r was 0.28
5. The relationship was markedly significant in Grades V and VI where the r 's obtained were 0.67 and 0.40 respectively. These are to be considered still unsatisfactory.
6. The relationship with Language Arts was low, the highest r being 0.36
7. The relationship with general average was highest in Grade V where the r was 0.63. There was low correlation in Grades VI and VII where the r 's were 0.48 and 0.32 respectively.
8. The relationship with residence was low, the r_t being 0.24.

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4.3 *Summary of Studies of Teaching Results.* The effectiveness of the teaching can be measured in terms of the level of significance of the difference between the means of superstitious held before and after the teaching.

1. In general, the teaching was effective beyond the 0.01 level of significance.
2. The teaching was effective with the boys beyond the 0.01 level of significance.
3. For the girls, it was effective beyond the 0.01 level of significance in Grades V and VI but failed in Grade VII.
4. The teaching was effective with Roman Catholics in all grades beyond the 0.01 level of significance.
5. For the Evangelical pupils of Grades V and VI, the teaching was effective beyond the 0.01 level, with the Grade VII Evangelical pupils the teaching was effective only at the 0.05 level.
6. Among the pupils who lived in the City, the teaching was significant only at the 0.05 level among the residents on the campus who were enrolled in Grades V and VI. But the teaching was significant beyond the 0.01 level among the pupils who lived in the suburbs and province.

5.0 *Conclusions.* The foregoing investigation justifies six conclusions.

First, in order to materially reduce superstitiousness, it must be directly attacked in formal instruction connected with units in Health and Science.

Second, a study of all the factors with the scope of this study, which were suspected to have influence on the superstitiousness of the child, has shown the pervasiveness of superstitiousness. Both young and older children can be equally superstitious. Probably this is so because the old people influence the attitudes of the young in all

aspects of their lives. Elders teach the young prejudices, taboos and superstitions as well as skill and knowledges. The sex of a person is no guarantee against superstitiousness, either, nor his ability to achieve high grades in school subjects. It can be added here that the related studies show that even an intelligent person, who may not accept that he is superstitious, may unknowingly demonstrate his superstitiousness in his unguarded moments.

Third, a rural child seems more easily persuaded to give up his superstition after direct teaching than the urban child is. Probably, a child from the province, who is inclined to be naive and simple, when confronted with the truth after investigations and experiments, is more ready to accept a change. However, a sophisticated city child, exposed to a cultured environment, would tend to develop a resistant attitude because his superstitions which are mixed with his more advanced ideas tend to take on the semblance of a scientific belief. It is as though the child said, "If my parents who are educated can believe in it, it must be true."

Fourth, it is easier to eradicate superstitiousness in younger children than in older ones. In young children superstitiousness is not yet deeply rooted in the minds. They always look up to their teacher as somebody authoritative in instruction so that what the teacher says they readily believe. When these young children see, hear, taste, and feel the cause and effect of things, they cannot help shedding off their superstitions. Therefore teachers should be careful about the kind of facts they are teaching the children.

Fifth, the superstitions that appeal to the senses are easier to eradicate than the intangible and the supernatural. Children are easier to teach through the senses. Since they are young, it is hard for them to understand the logic or the rationalization of facts, but they are rather easily convinced by actual evidence.

Sixth, a well-achieved child of college-trained parents, living in the city, with positive leanings toward Evange-

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lical Christianity, tends to be less superstitious.

6.0 *Recommendations.* In view of the pervasiveness of superstitiousness among the Pilipino people and its inhibiting destructive effects on the child in particular and on the whole country in general, the researcher is encouraged to suggest the following recommendations:

1. A systematic study of the common superstitions of the people should be integrated with the units in Health and Science, Social Studies, Character Education and Language Arts.

2. The Elementary curriculum should be restudied to the end that it may accomodate a more vitalized instruction covering superstitions so as to make the learning more meaningful to the children in all the above-mentioned subjects.

3. Studies of the teaching of superstitions should be included in Science offerings for students in college taking up education courses, to give future teachers some idea of the scope of the work and to reduce their own superstitions so that they would not carry over into the classrooms their own superstitiousness and make more fixed the wrong attitudes of children.

4. Formal teaching about the falsity of superstitions should start as early as Grade Five and be carried through all the elementary grades and high school, a period of time when the children are in their most impressionable years.

5. This program should be intensively undertaken by the Department of Education because this governmental agency has charge of the education of most of the young citizens of the country.

6. Other institutions and agencies in the country like the churches, hospitals, PACD (Presidential Arm on Community Development), Department of Agriculture and Natural Resources, National Science Development Board, Bureau of Science, Bureau of Health, civic societies like

the Rotary Clubs, Lion's Club, the Y.W.C.A., the Y.M.C.A., the Y-Teens, Adult Education and the like, should be encouraged to include in their meetings a broadminded discussion of the beliefs common in their area and the country as a whole, in order to minimize superstitions among the adults.

7. Further researches like this one should be undertaken in other schools in order that more conclusive findings can be gleaned from wide sampling.

8. It is further recommended that in the making of a similar questionnaire, the word "superstitions" or any of its derived form should be avoided since their inclusion may influence the pupil's mental set when they are answering the instrument. A bias will then be introduced in the results, since the pupils may tend to suppress any sign of superstitiousness on their part in order to appear well before their teachers or superiors.

The real power of the universe is not the shattering power of the atom but the power of love, the love which our Creator has for us and should have for Him. And in terms of these new visions of science we see hope for bringing in this new world of peace, goodwill, and abundant living for all mankind...

— DR. DONALD H. ANDREWS