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A survey of health education for high school girls with recommendations for a course of study for the Indiana State Training School

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A SURVEY OF HEALTH EDUCATION FOR HIGH SCHOOL GIRLS
WITH RECOMMENDATIONS FOR A COURSE OF STUDY
FOR THE INDIANA STATE TRAINING SCHOOL

by

Mary Fread

Contributions of the Graduate School
Indiana State Teachers College
Number 62

Submitted in Partial Fulfillment
of the Requirements for the
Master of Science Degree
in Education

1932

INDIANA STATE
TEACHERS COLLEGE
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M. Fread

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I. INTRODUCTION

A. Changing Viewpoint In Health Education

No matter how strongly hereditary factors have tended toward physical perfection in any individual, the complex social life of the present makes proper physical development impossible unless the individual has acquired the proper health training to conserve and develop his hereditary endowment. However, it has not been until the twentieth century, with its strong impulse to realize democratic ideals, that we have had powerful educative forces loosened to insure for every child the opportunities and the conditions which permit of the free and fullest individual health development, each according to his inherent potentiality.

Before the World War, schools gave little training in health education, the few courses in hygiene and physiology being largely theoretical. The draft examination showed a large per cent of physically unfit among those who had recently passed through our school systems. Since the World War, a marked interest in health has been shown. The Commission on the Reorganization of Secondary Education lists "Health" as the first of the "Seven Cardinal Principles of Secondary Education."¹ Health is not the end of life or education, but it is an essential condition for the realization of worthy ends, more immediate or ultimate, in the career of the individual.

¹ Report on Cardinal Principles of Secondary Education,

Commission on Reorganization of Secondary Education, United States Bureau of Education Bulletin, No. 35, 1918, Washington: Government Printing Office, 1918, p. 32.

New ideals have been developed in health teaching, new methods of teaching health have been devised, and enthusiasm in this field has been aroused. There has been a change in the instructional emphasis from mastery of abstract knowledge to practical application, in an attempt to equip the child with practical health habits, attitudes, ideals, knowledge, and application. Textbook hygiene and physiology are of the past. The subjects of health education now consist primarily in the development of an intelligent and enthusiastic attitude toward health. A favored definition of health education is "the sum of experience in school and elsewhere, which favorably influences habits, attitudes, and knowledge, relating to individual, community, and racial health." This definition carries health education far beyond the mere acquisition of health knowledge. The mere acquisition of knowledge, no matter how important it may be, is worthless unless it leads to hygienic habits of living, a reserve of energy, mental poise, and all other conditions including happy robust living.

In reviewing the changing viewpoints of health, the contrast between the old ideas and the new are very marked. In the past, the emphasis was on sanitation and environment; in the present, it is on personal hygiene. Environment is only incidental as it affects health. In the past, health education was based largely on superstition and ignorance of facts; now, it is more scientific and based on medical and bacteriological facts. Before, the emphasis was on the cure of disease; now, it is on the prevention of disease.

2

T. R. Wood and H. G. Rowell, Health Supervision and Medical Inspection of Schools, Philadelphia: W. B. Saunders Company, 1927, p. 36.

Before, the emphasis was on the limitations of the body to meet situations; now, the emphasis is on the development of constructive health to develop the health potentialities of the body to meet situations.

B. Review of Previous Studies

There has been some confusion in the change from the older courses of physiology and hygiene to the newer subjects. Numerous investigations have been and are being made of the health education courses. The investigation of courses of study in health education which was made by Harman and Clark revealed the following existing conditions:

1. The importance of health education is appreciated.
2. No standard has been accepted for the preparation of courses in health education; in fact, there is a decided bias toward the fields of the one who prepares the course of study.
3. There exists a marked confusion in the meaning of terms.
4. The scope of the health program varies considerable.
5. The content of the health education programs shows considerable variation in the amount and kind of subject matter.
6. Because of the steady increase in the number of health topics, there is a marked tendency toward overcrowding of subject matter. Unessential details are stressed. Much of the material is not within range of the student's experiences. Scientific content is lacking in many courses.
7. Health examinations and inspection procedures are unstandardized.
8. Physical education is not correlated with other closely

related health activities.

The report of Stetson and Cozens on the organization and administration of health education in secondary schools substantiates the above, plus the following: 1. Traditional courses in hygiene and physiology still persist to the exclusion of a course which shall present facts of real life, of manhood and womanhood, of sex and sex problems. 2. The general program of health education is poorly organized. 3. The organization of the school program to promote the health of the teachers is being neglected, as is also the daily inspection of the school plant.⁴

According to the Commission on the Reorganization of Secondary Education, the secondary school has the following health responsibilities:

Provide health instruction.

Inculcate health habits.

Organize an effective program of physical activities.

Regard health needs in planning work and play.

Cooperate with home and community in safe-guarding and promoting health interests.⁵

3

M. H. Harmen and T. Clark, A Study of Courses in Health Education, United States Public Service Bulletin, No. 152, 1925, Washington: Government Printing Office, 1925, p. 45.

4

F. L. Stetson and F. W. Cozens, The Organization and Administration of Health Education in the Secondary Schools of the United States, University of Oregon Publication, Vol. I, No. 2, Education Series, Eugene, Oregon: University of Oregon, June 1927, p. 108.

5

Report on Cardinal Principles of Secondary Education, Op. cit. p. 32.

C. Purpose Of This Study

The present need is for principles and facts on which specific courses of health education can be built for specific situations. These principles and facts must be educationally sound if health education is to be considered of equal value with other subjects in the curriculum.

The purpose of this study is:

1. To determine what is being done in the field of definite health education;
2. To evaluate the methods, materials, and measurement of instruction now being used in the field;
3. To recommend principles to be followed in making a course of study for the Indiana State Training School.

II. SURVEY OF PRESENT STATUS OF

HEALTH EDUCATION

A. Procedure

What are the schools doing along the line of definite health instruction? To find the answer to this question, a study of various high schools in the United States was made. Unless a school has a definite program of health education, a study of methods, materials, and measurement of instruction can not be made. As health education has not found a place in many high-school curricula, only those schools having health education were studied. These schools were selected at random from each of the states. They represent a high level of interest and effort in health education problems. These are not to be taken as characteristic of all high schools, but of those having a definite program of health education.

A questionnaire covering the field of materials, methods of teaching, physical examination, and measurement of instruction was prepared and sent to the principals of the schools selected. A copy of this questionnaire is found in the appendix, page 77. Accompanying the questionnaire was a personal letter signed by President L. N. Hines. A copy of this letter is found on page 80. Seventy-five questionnaires were mailed to principals and sixty of these were answered and returned. These returned represented thirty-five states.

The data were first checked from the entire group of questionnaires returned. This group was called Group I. The questionnaires were then divided into two groups and checked according to pupil enrollment. The enrollments listed were within the range of

270 to 2400 girls. The average enrollment was 1150. One group contained the schools listing their enrollment above the average. This was called Group II and included twenty-seven schools. The other group contained the schools listing an enrollment below the average. This was called Group III and included twenty-six schools. Those not listing any enrollment were thrown out. There were seven of these.

B. Distribution Of Replies To Questionnaires

According to the plan of classification as explained on pages 6 and 7, the replies were divided into three groups: Group I, all replies received; Group II, all high schools with an enrollment of girls over 1150; Group III, all high schools with an enrollment of girls under 1150. The replies have been placed in fifteen tables. The tables show the three-group arrangement. Under each group are two columns, one for frequency and the other for corresponding per cent or rank.

TABLE I
Person Responsible For The Health
Education Program

	Group I		Group II		Group III	
	Freq.	Rank	Freq.	Rank	Freq.	Rank
Principal	29	6	12	7	15	5
Health Education Teacher	28	7	14	6	14	6
Doctor	34	4	16	5	18	2
Nurse	37	2	19	2	17	3
Health Counselor	8	9	3	9	4	9

TABLE I (Continued)

Dean of Girls	27	8	11	8	13	7
Home Economics Teacher	35	3	18	3	16	4
Physical Education Teacher	51	1	24	1	22	1
Science Teacher	32	5	17	4	12	8
Other person	2		2		-	

Each school was asked to check the one responsible for the health education program. No school checked just one person. From the replies, it seemed that no one person was responsible for the health education program. Some had two people responsible while others had as many as four. Each reply was checked and the number for each person totaled and ranked. From the replies, the physical education teacher ranked first in all three groups, that is, the physical education teacher was the one responsible the greatest number of times. Reasons for this are probably (1) the fact that health is usually considered a part of the physical education program; (2) the physical education teacher is usually better trained to teach health; (3) the physical education teacher comes in contact with more girls than any other person. In Group I, the group containing all sixty replies, the rankings in order were: nurse second, home economics teacher third, doctor fourth, science teacher fifth, principal sixth, health education teacher seventh, dean of girls eighth, and health counselor ninth. In the larger schools, the rankings were: nurse second, home economics teacher third, science teacher fourth, doctor fifth, health education teacher sixth, principal seventh, dean of girls eighth, and health counselor ninth. In the smaller schools, the rankings

were: doctor second, nurse third, home economics teacher fourth, principal, fifth, health education teacher sixth, dean of girls seventh, science teacher eighth, and health counselor ninth. Other persons named besides the ones listed were teacher-nurse and vice-principal.

There is a need for the centralization of responsibility rather than distributing it over several departments. In this age, the high school is an organization of specialists. In such an organization, health needs its own specialist.

TABLE II
Number of Schools Reporting A
Health Education Committee

	Group I		Group II		Group III	
	Freq.	%	Freq.	%	Freq.	%
Yes	21	35.	8	29.6	11	42.3
No	28	46.7	14	51.9	11	42.3
No reply	11	18.3	5	18.5	4	15.4

Table II shows the replies received to the question "Do you have a health education committee acting in your school?" Almost half of the schools reported no committee. Only 35 per cent did have. In comparing Group II and Group III, it was found that a greater per cent of the smaller schools had a health education committee. Over half of the larger schools reported no health education committee.

In reply to the question "Who is on this committee?", a variety of answers was received. The group named most frequently was the physical education teacher, nurse, doctor, and home

economics teacher. Others named as being on some of the committees were the principal, vice-principal, health teacher, nutrition specialist, superintendent of schools, city director of health education, city supervisor of physical education, science teacher, and history teacher. One committee was made up of the physical education teacher and a group of the students. One city had a committee made up of the various health teachers of all the city schools which acted for each school. There seemed to be no uniformity in the personnel of the committees. There was no definite number on the committee. The number varied according to the school situation. Several reported committees but added that these were not very active.

The replies to the question "How long have you had a health education program in your school?", covered a range of time from two years to twenty-two years with the average length about nine years. Eighteen schools did not reply to this question. In some of the answers to this question, physical education was included as health education.

TABLE III

Health Officers In School

	Group I		Group II		Group III	
	Freq.	%	Freq.	%	Freq.	%
School physician	53	88.3	23	88.8	26	100.
School nurse	50	83.3	26	96.2	24	92.3
School dentist	31	51.6	16	59.2	15	57.9
School psychiatrist	28	46.6	13	48.1	14	53.7
Any other	4	6.6				
No reply	2		1		-	

In Table III, the frequency of each officer was found by adding the number of checks each received in the replies. The per cents represent the per cent of schools having that particular health officer. The officers named under the heading "Any other" were supervisor of nutrition, skin specialist, pediatric physician, and psychologist. Many of the officers checked were marked as being part time officers. Since their services were available, the school was given credit for having that health officer. Most of the school psychiatrists were named as being available on request. From the replies, the size of the school did not make much difference in the per cent of health officers available. All of the small schools had a physician's service available.

TABLE IV
Provision For Health Education Used

	Group I		Group II		Group III	
	Freq.	Rank	Freq.	Rank	Freq.	Rank
Health Education Class	33	4	16	4	14	5
Physical Education Class	55	1	27	1	24	1
Health Club	27	6	11	6	15	4
Social Studies Class	31	5	14	5	13	6
Science Class	48	2	24	2	20	3
Home Economics Class	47	3	23	3	23	2
No reply	2					

All the replies except three had more than one class checked. According to Table IV, the physical education class received the greatest number of checks. In the large school group, every one

of the schools provided health education in the physical education class. Several schools list physical education and health education as one subject. Usually the health taught in physical education classes is not the definite instruction type. Definite health education class ranked fourth in Group I and Group II, and fifth in Group III.

The school should be organized so that the health material will be distributed throughout the courses offered in the school, with each segment of knowledge placed in the subject where it logically belongs. Good teaching will provide for the acquisition of skills or knowledge in the department of the specialist best fitted to give it.

TABLE V

Minutes Spent In Health Instruction

	Group I	Group II	Group III
<u>Daily</u>			
Largest number	100	100	60
Smallest number	20	30	20
Average	50	65	48
<u>Days per week</u>			
Largest number	5	5	5
Smallest number	1	1	1
Average	2.5	2.7	2.4
<u>Weeks per year</u>			
Largest number	40	40	40
Smallest number	18	18	20
Average	35	34	36

TABLE V (Continued)

<u>Number of years</u>			
Largest number	4	4	4
Smallest number	.5	.5	2
Average	2.6	2.4	3
No reply	14	7	6

Table V is a summary of the replies to the question "How much time is spent in health instruction?". The average time was found by adding all the various time periods given and dividing by the number of periods listed. The average length of period was 50 minutes, 2.5 days a week for 2.6 school years. The larger schools had a longer class period of instruction than the smaller schools. This was probably due to the program schedule having longer class periods during the day. The smaller school group had a longer period of years of instruction. This is probably due to the difference in length of semesters. The usual procedure was to spend one day of the time allotted to physical education for instruction in health.

TABLE VI

Placement Of Health Education In Student's Course

	Group I		Group II		Group III	
	Required	%	Required	%	Required	%
Freshman	38	63.3	18	66.6	19	73.
Sophomore	36	60.	18	66.6	18	69.2
Junior	35	58.3	16	59.2	17	65.4
Senior	33	55.	14	51.8	15	57.7
No reply	9	15.	2	7.4	3	11.5

TABLE VI (Continued)

	Elective	%	Elective	%	Elective	%
Freshman					4	15.3
Sophomore	18	30.	9	33.3	9	34.6
Junior	24	40.	12	44.5	12	46.1
Senior	24	40.	12	44.5	12	46.1

Eighty-five per cent of the schools replied to the question "Is health education required and in what years is it given?". These replies are listed in Table VI. Over half the schools had health education required all four years. This high per cent is due to the fact that several schools included as required health education, the work that is correlated in other required subjects. For example, one school taught health one day of the physical education period. Physical education was required for all four years, so they checked health education as required for all four years. The smaller schools seemed to have a larger per cent of required health education than the larger schools in all classes. As expected, health education was elective more than required in the later high-school years.

TABLE VII

Help Received From State Department Of Education

		Group I		Group II		Group III	
		Freq.	%	Freq.	%	Freq.	%
A. Do you receive any instructional help?	Yes	25	41.6	14	51.6	10	39.1
	No	22	36.7	9	33.3	9	34.5
	No reply	13	21.7	4	15.1	7	26.4

TABLE VII (Continued)

B. Do you have a state course of study?	Yes	19	31.6	8	29.7	8	30.8
	No	25	41.6	14	51.8	11	42.3
(City courses of study included)	No reply	16	26.8	5	18.5	7	26.9

From Table VII, it was found that about two-fifths of all the schools received instructional help from their State Department of Education. This material included all forms of printed matter. Over one-fifth of the schools did not reply to this question. This probably meant that more than the 36.7 per cent reporting no help did not receive help from their State Department. The State Department of Education should serve as a guide and advisor to local school systems. There is a large field of possible help the State Department can give its schools in health education and one that needs to be developed. The larger group of schools seemed to receive more help than the smaller group of schools.

In replying to the question "Do you have a state course of study?", several reported a city course of study and this course was included in the summary given in Part B of Table VII. Only nineteen of the sixty schools reported any course of study. In many states, health education is such a recent subject that courses of study have not been worked out. Several replied that they were making a course of study. Most schools must use their own judgment as to what to include in this subject.

In reply to the question "By whom is course of study prepared?", several different sources were revealed. The State

courses of study were made out by the State Superintendent or by a committee appointed by him if the state did not have a State Director of Health and Physical Education. If there was a State Director, he was responsible for the state course of study. The city courses of study were made out by the city director or by a committee of teachers. This committee of teachers was made up of health teachers of the schools. One school had two home economics teachers on its committee.

While each situation should have its own course of study, in this new field there should be some guiding principles to follow. There should be a minimum of instruction to assure acceptable behavior and sound information covering the points on which decisions have to be made to affect well-being.

Each of the schools was asked to list the textbooks used in teaching health education. Forty per cent of the schools did not answer this question. Twenty-nine textbooks were named by the thirty-six schools answering. There were only six books named more than once. These six in order were Lynch, American Red Cross, First Aid Manual first, Williams, Healthful Living second, Delano, Home Hygiene and Care Of The Sick third, Williams, Personal Hygiene Applied fourth, and Andress, Aldinger and Goldberger, Health Essentials and Meredith, Health Of Youth fifth. The other twenty-three books were named only once.

Many of the schools replied that no textbook was used. Others replied that books were used merely as references. The textbooks

1

See Appendix, page 81 for complete list of textbooks named.

named were all used in definite health instruction classes. If the health work was correlated with other subjects, texts for it alone would not be used. This probably accounts for the fact that many texts on nutrition and foods and on science were listed, since the home economics and science classes ranked second and third in the provision for health instruction used.

In the questionnaire, twenty-nine different units were listed and the schools were asked to check the units taught in specific health instruction class. With the exception of three units, sex hygiene, industrial hygiene, and education for parenthood, these units listed were checked by all the schools replying. Nine schools did not reply to this. There seemed to be a uniformity among the units of instruction.

TABLE VIII

Supplementary Material Used In Teaching Health Education

	Group I		Group II		Group III	
	Freq.	Rank	Freq.	Rank	Freq.	Rank
Newspaper articles	43	2	22	2	20	1
Magazine articles	49	1	24	1	19	2
Mortality and morbidity statistics	30	7	17	6	12	7
Actual experience with real children	42	3	21	3	18	3
Posters	41	4	20	4	16	5
School drives	27	8	16	7.5	11	8
Physical examination statistics	39	5	19	5	17	4
Absence from school statistics	35	6	16	7.5	15	6
Others	3					
No reply	7		2		4	

From Table VIII, magazine and newspaper articles seemed to be the principal sources of supplementary material. These sources of material are available to all. Actual experience with real children ranked third. This a very practical application of knowledge acquired. Posters ranked fourth in the larger schools, while physical examination statistics ranked fourth in the smaller schools. The differences in frequencies is so small that the ranks are not very significant. Other sources listed were tabulated questions from students, city course of study, and films. From the replies, all schools are using other material than textbooks alone.

TABLE IX

Methods Used In Teaching Health

	Group I		Group II		Group III	
	Freq.	Rank	Freq.	Rank	Freq.	Rank
Lecture and reports	43	2	22	2	15	4.5
Lectures	38	4	20	5	16	3
Group discussion	48	1	24	1	18	1
Projects and activities	39	3	21	3.5	15	4.5
Questions and answer	35	6	21	3.5	14	6
Problem solving	31	7	17	7	12	8
Inspection	37	5	19	6	17	2
Club activity	28	8	13	8	13	7
Others	2		2		-	
No reply	5		2		3	

As in other tables, the differences in frequencies in Table IX are so small that the ranks are not very significant. Although

group discussion ranked first in all groups, there did not seem to be any one "most used" method. All the replies had two or more methods checked. This was expected since there was such a variety in materials taught. Other methods listed were slides, moving pictures, and field trips.

TABLE X

Classes To Whom Physical Examination Is Given

	Group I		Group II		Group III	
	Freq.	%	Freq.	%	Freq.	%
Freshman	51	85.	26	96.2	22	84.6
Sophomore	42	70.	19	70.3	15	57.7
Junior	41	68.3	18	66.6	14	53.8
Senior	44	73.3	20	74.	15	57.7
Specials	25	41.6	9	33.3	12	46.1
No reply	6					

Almost all of the schools provided some type of physical examination. With one exception, all of the large-school group had physical examinations for freshmen. As a whole, the larger schools provided physical examinations to more of their students than the smaller schools did. Several schools gave examinations to freshman and senior girls, the entering and leaving groups of students. Under the specials are listed those who gave examinations to others than the classes listed here. These included physical education classes, under-weights, those whose previous records showed them low, any one requested by principal or teacher, absentees, athletes or those entering sports. Thirty-six of the schools gave an examination to all their students each year.

TABLE XI
Officials Giving Physical Examination

	Group I		Group II		Group III	
	Freq.	%	Freq.	%	Freq.	%
Physician	57	95.	26	96.2	25	96.1
Nurse	37	61.7	21	77.7	16	61.5
Special teacher	34	53.6	18	66.6	13	50.
No reply	3		1		1	

All the schools answering the question "By whom is physical examination given?", had the physical examination given by a physician. The school nurse or special teacher assisted in this examination. The special teacher listed in Table XI included the physical education teacher, the health education teacher, or a teacher-nurse.

The replies to the question on "Amount of time usually spent in giving an individual examination", covered a range of time from one-half minute to sixty minutes with the average time being about thirteen minutes. This range of time indicates the differences in the examinations given. Some merely examined eyes, throat, height, weight, and pulse rate. This could be done in a very short time. Others gave a more thorough examination which required more time. There was no standardized form of procedure. Each one did what they wanted to do.

Another indication of the thoroughness of the physical examination was shown in the replies to the question "Amount of time spent in giving examination to group". Some schools examined

100 per hour; others one class per hour. At such a rate, the examination could not be very thorough. Schools reporting this rate had a nurse and physical education teacher assisting the doctor. Other replies received were two weeks yearly, six weeks a year, three days, six days, and two or three hours. The size of the group to be examined would determine the amount of time required. If freshmen were the only ones examined, the amount of time needed would be less than if the entire student body were to be examined. Thirty-six of the schools did not reply to this.

TABLE XII

Methods Used In Recording Physical Examination Data

	Group I		Group II		Group III	
	Freq.	Rank	Freq.	Rank	Freq.	Rank
Physical examination blank for each student	20	1	12	1	7	1
Permanent record cards of nurse	10	2	6	2	3	4
School record	5	5	4	4	-	-
Teacher's record	4	6	3	5	-	-
Health charts and cards	9	3	5	3	4	3
Cumulative record cards	7	4	2	6	5	2

Twenty-eight different replies to the question "How are records kept?", were received. All those referring to the similar forms were grouped together and tabulated in Table XII. Standard physical examination blanks included those answering "on standard blanks", and "city wide card blanks". Cumulative record cards included those answering "individual record card

which follows student from kindergarden", "on cards started in grammar school", and "yearly additions to freshman records". The most common practice was to have individual blanks for each individual. Better follow-up work could probably be done if these were cumulative records. The smaller schools used cumulative records more than the larger schools. Probably some of the physical examination records checked were cumulative, but they were not marked and could not be grouped as such.

Ten different places were given in reply to the question "Where are the records kept?". These in their order of frequency, were office of school nurse, physical education office, doctor's office, school or principal's office, health office, clinic, City Board of Health Department, administration building, emergency room, and pupil folders. The majority of the schools kept them in nurse's or physical education offices.

Forty-nine out of the sixty schools reported some type of follow-up work. The other eleven did not reply on this point. Fifty per cent of the follow-up work consisted of home notices sent to parents as a result of physical examination. If no response was received from parent, personal interviews were held. Other types of follow-up work included posture work, suggestions to deans on mid-morning meals, rest periods, conferences on diet, corrective work, checks on defects, and re-check by doctors after reasonable period of time.

The person who did the follow-up work was the nurse in fifty-five per cent of the schools. Others who did follow-up work, in order of frequency, were doctor, physical education teacher,

health teacher, advisor teacher, and home economics teacher. The nurse is the logical one to do this work.

TABLE XIII

Schools Attempting To Measure Results

	Group I		Group II		Group III	
	Freq.	%	Freq.	%	Freq.	%
Yes	31	51.7	15	55.5	10	38.5
No	13	21.6	5	18.6	6	23.
No reply	16	26.7	7	25.9	10	38.5

Although measurement of results in health education is in its earliest stages, Table XIII shows that 51.7 per cent of the schools were attempting to do something in this field. More seemed to have been done by the larger schools as they reported 55.5 per cent attempting to measure results as compared to 38.5 per cent of the smaller schools. A larger per cent of smaller schools did not reply to this question.

While sixteen of the schools in Group I did not indicate that they were attempting to measure results, five of these did check various methods used. Therefore, they must be trying to measure results. This is true in Group II and Group III also.

TABLE XIV

Methods Used In Measuring Results

	Group I		Group II		Group III	
	Freq.	Rank	Freq.	Rank	Freq.	Rank
Anatomical and physiological measurement of health	31	4	15	5	13	5

TABLE XIV (Continued)

Written tests of health knowledge	44	1	21	1	20	1
Written tests of health attitudes	30	5	16	4	14	4
Standardized health knowledge tests	26	6	11	7	12	6
Observation of health activities	39	2	20	2	17	2
Self-checking on health practices	37	3	19	3	15	3
Rating by others on health practices	24	7	13	6	11	7
Any other method	4		-		-	
No reply	11		4		6	

Written tests for health knowledge ranked first in all three groups. This is the traditional type of examination. These tests include tests on anatomy and physiology. They are pure information tests. Observation of health activities ranked second. This includes the teacher's judgment of the pupil's behavior. Self-checking on health habit charts kept by the girls ranked third. Anatomical and physiological measurement of health ranked fourth in Group I and fifth in Group II and Group III. This includes measurement based on height, weight, pulse rate, etc. Written tests of health attitudes ranked fifth in Group I and fourth in Group II and Group III. These include written tests on what the girl believes and how she feels about health. Standardized health tests, the most objective type of test we have, ranked sixth and next to the last. These tests are rather expensive. Rating by others was last. Among other methods

listed were health contests, true and false tests as result of health examinations, notebooks, and absences from school.

Teachers seemed to be using several methods of measurement rather than just one type. Measurement of knowledge in health education may be accomplished by the same methods used in other subjects. Measurement of attitudes is still an unsolved problem.

TABLE XV

Statistical Reports Of Results and Follow-up Work

		Group I		Group II		Group III	
		Freq.	%	Freq.	%	Freq.	%
A. Do you have a statistical report of results?	Yes	16	26.7	8	29.6	7	26.9
	No	27	45.	12	44.5	11	42.4
	No reply	17	28.3	7	25.9	8	30.7
B. Do you have a statistical report of follow-up work?	Yes	24	40.	12	44.5	8	30.7
	No	22	36.6	8	29.6	11	42.4
	No reply	14	23.4	7	25.9	7	26.9

Only about one-fourth of the schools made a statistical report of results, while two-fifths made a report on the follow-up work. If reports were printed, more people would know what is being done. Interest needs to be aroused and this is one method of arousing it.

C. Summary of Replies

1. No one person was responsible for the program of health education. In most schools, the physical education teacher was named most often as being one of the persons responsible.

2. Only 35 per cent of the schools had an active health committee. A larger per cent of smaller schools had a committee.

3. In the schools having a health committee, there was little uniformity in the persons making up this group. The group named most frequently was the physical education teacher, nurse, doctor, and home economics teacher.

4. Eighty-eight per cent of the schools had a doctor's service available and eighty-three per cent had a school nurse. About half of them had the services of a dentist and psychiatrist when needed.

5. There was no uniformity in the kind of class provided for health education. Most schools used three or four classes. About half of the schools had definite health education classes. Physical education, science, and home economics were most frequently used for teaching health.

6. The average length of time spent in health instruction was 50 minutes a day, 2.5 days per week, for 2.6 school years.

7. Health education was required of about two-thirds of all the freshmen. A little over half required it of all classes. It was elective for about one-fifth of the sophomores and one-third of all the juniors and seniors.

8. Forty-one per cent of the schools received instructional help from their State Department of Education. Only thirty-one per cent had a course of study to follow in teaching.

9. Out of the 29 textbooks listed as being used in teaching health education, only six were named more than once.

10. All the schools used the units of instruction suggested in the questionnaire in teaching health.

11. Textbooks were not the only source of material used. All the schools used other supplementary material, as newspaper articles, magazine articles, actual experience with real children, etc.

12. There was no one "most used" method of teaching. All the schools replying used two or more methods.

13. Thirty-six of the schools studied gave an annual physical examination to all of their students. Freshmen and seniors were the groups examined by most schools.

14. The physical examination was given by a physician usually assisted by a nurse or a special teacher.

15. The average time spent in examining an individual was 13 minutes. There were no comparable answers to the amount of time spent in group examination. Each school had its own provision for this.

16. The most common practice of keeping records was the use of individual blanks. These were most frequently kept in the office of the school nurse, doctor, or physical education department.

17. The follow-up work, usually consisting of reports to parents of results of physical examination, was reported by all the schools replying. The nurse was the one who did this follow-up work in 55 per cent of the schools.

18. About half the schools were attempting to measure results.

19. Written tests of health knowledge ranked first, observation of health activities ranked second, and self-checking on health practices ranked third as methods used in measuring results.

20. Very few schools make statistical reports of results and of follow-up work.

III. EVALUATION OF METHODS OF TEACHING

HEALTH EDUCATION

A. Objectives

In education, it is necessary to determine what the pupil should learn, that is, the objectives of the school. An objective is that point or purpose toward which activity is directed.

Bobbitt speaks of education "to prepare men and women for the activities of every kind which make up, or which ought to make up, well-rounded adult life."¹ The North Central Association gives the following activities of life:

1. To maintain health and physical fitness;
2. To use leisure time in right ways;
3. To engage successfully in vocation activities;
4. To sustain successfully certain definite relationships, such as domestic, community, civic, and the like.

What are the objectives of definite health instruction? G. T. Stafford has listed, analyzed, and evaluated the list of health objectives as determined from a general review of the health education field and course of study. From his review he found:

1. Objectives are stated in a platitudinous manner;
2. Objectives are stated in terms of teacher activity rather than pupil activity;

¹

Franklin Bobbitt, How to Make A Curriculum, New York: Houghton Mifflin Company, 1924, p. 7.

²

Report on Standards for Reorganization of Secondary School Curricula, 1924, North Central Association for Colleges and Secondary Schools, 1924.

3. Misinterpretation is possible in many objectives;
4. Objectives deal with knowledge alone;
5. Objectives deal with activities which are questionable value.

The aims of Health Education, as stated by the Joint Committee of Health Problems in Education of the National Education Association and American Medical Association are:

1. To instruct children and youth so that they may conserve and improve their own health;
2. To establish in them the habits and principles of living which throughout their school life and in later years, will assure that abundant vigor and vitality which provides the basis for the greatest possible happiness and service in personal, family, and community life;
3. To influence parents, and other adults, through the health education program for children to better habits and attitudes, so that the school may become an effective agency for the promotion of the social aspects of health education for the family and community as well as in the school itself;
4. To improve the individual and community life of the future; to insure a better second generation and a still better third generation; a healthier and fitter nation and race.

³
G. T. Stafford, A Program of Health Education for Secondary Schools, Masters Thesis 1928, Urbana: University of Illinois Library, p. 42.

⁴
Report of Joint Committee on Health Problems in Education of the National Education Association and American Medical Association, Health Education, New York: Wood T. D. 1925, p. 7.

From general reading, it seems that the objectives of health education should:

1. Provide a body of knowledge related to the fundamental principles of healthful living;
2. Develop rational attitudes and scientific methods of thinking about personal health matters;
3. Develop appropriate attitudes and ideals related to personal and social health;
4. Develop a feeling of social responsibility in regard to health;
5. Develop a desire to apply health principles;
6. Develop an appreciation of and willingness to assume responsibility in maintaining a healthful home, school, and community environment;
7. Develop appropriate health habits and skills related to all aspects of health;
8. Provide experiences in finding, evaluating, and using health methods;
9. Develop an awareness of the health qualities of a situation or activity to the extent of desirable action;
10. Help pupils to become self-determining and self-directing in health matters;
11. Develop an intelligent attitude toward health or the ability to think through problems of health, and the ability to make judgments in varying health situations;
12. Help pupils to avoid and to overcome all forms of false health beliefs and practices;
13. Help pupils to evaluate the health aspects of vocations;
14. Promote appreciation of health education in the school,

the home, and the community;

15. Develop an appreciation of the richness of life that may result from the observance of high standards of health behavior.

B. Formation of Health Habits

Establishment of health habits becomes more difficult with each generation. Daily life with its constant demand on nervous and vital energy becomes more complex with each scientific achievement. For the high school girls, there are additional difficulties, chief among them being: the desire to "be in style" at whatever cost; the lack of immediate satisfaction in doing health practices; the fact that health practices are standardized and standards mean nothing to youth. In high school, the development of good habits means also the breaking up of bad ones.

Many of the child's health habits are established by relatively unthinking imitation of the habits of her parents and customs of the family. These may be prejudices which are hard to break.

The same laws of learning govern the formation of health habits that are fundamental for the forming of any other habits. These three steps are:

1. A clear picture of the habit to be established;
2. An opportunity for practice of the habit;
3. The correct habit should bring such results that the girl will feel satisfaction in the doing of it until it becomes second nature to her. If habits are formed by thinking through the health situation, the habits will be both flexible and stable. They will be flexible because, since they are formed by thinking,

there is a basis for reforming them. They are stable, because they are supported by reason.

Monroe states, "Learning exercise is the term used to designate any type of exercise, any request to do, designated to form the basis of learning activity. Learning exercise forms the basis of the mental activity. In psychological language, they furnish the stimulus and the activity is the response. The abilities are the outcomes or products of the activity. This relationship furnishes a basis for predicting either the abilities that will result from the doing of certain learning exercises, or the learning exercises that should be assigned in order that the students may acquire the abilities specified as objectives."⁵

From this, it follows that a learning exercise may be a request from the teacher to the pupil for the pupil to engage in some specific activity rather than a request to learn certain things.

Certain assignments must be made which will result in pupil activity of the type to achieve desirable health habits. Definite rules must govern the selection of the learning exercises.

1. The learning exercise must be interesting to the student. The student may be unaware of this potential interest and it then becomes the teacher's task to stimulate that interest.

2. The exercise should be of practical value to the pupil. He must see the need of doing the exercise. The need will of course differ with different individuals.

3. The learning exercise should be specific. Definite

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W. S. Monroe, Directing Learning in the High School, Garden City, New York: Doubleday, Page and Company, 1927, p. 51.

exercise must be assigned if definite activity is to result.

Page assignments are not enough.

4. The learning exercise should cover the largest possible unit of activity. The activity which satisfies several of the requirements is better than the activity that satisfies but one.

C. Causes of Failure in Teaching Health

Health teaching in the past has not been very successful. There are several causes for this. The principal ones are:

1. Teachers, as a class, have not been prepared to teach health.

2. Few teachers like to teach health and when possible "dodge" it.

3. Health has so recently appeared in the curriculum that its psychology and pedagogy have not been worked out systematically or satisfactorily.

4. Many texts now in use devote too much time to anatomy and physiology.

5. What is taught is too general and abstract and aims at knowledge rather than practical health habits.

6. The instruction is not well organized or standardized which results in too much repetition.

7. Health has been preached too much and referred too little to facts.

D. Methods of Teaching

A great variety and mass of new material, methods, and devices for health teaching have come into vogue which presents a chaotic aggregation of elements to pupils and teachers. In teaching, a

desire and interest in health should be aroused. Induce the girl to want health rather than insisting that she have it. The teacher should know and understand the adolescent, her nature and needs, and these should be the determining factors of what they shall teach and how they shall teach.

The girl should think of health as associated with conduct and not as a subject of instruction. The teacher should keep in mind the relationship between knowledge and conduct. Dr. Symonds lists this relationship in the following principles:

1. Knowledge must serve some drive before it functions in conduct;
2. Knowledge must compete with general community practices and standards in the control of conduct;
3. Knowledge in and of itself does not necessarily influence conduct;
4. Negative instruction seems to be the most immediately effective, but positive instruction is most educative and liberalizing;
5. Knowledge to be functional must be within a person's comprehension;
6. Emotion in and of itself is not effective as a control of conduct.

The tendency to imitate is so strong that the teacher is a constant force in shaping habits of physical and mental health of her students. She should help girls to see that the ultimate reward of health practices can be found in concrete evidences

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P. M. Symonds, Principles and Practices in Health Education, New York: American Child Health Association, 1931, Pp. 275-83.

of health.

Interest in health may be aroused by associating health activities with things in which the girl is already interested. The subjects of personal appearance and beauty are always interesting to the high school girl. Emphasis can be placed on the close relationship of health and beauty. Interest may also be aroused by providing incentives which will make health activity attractive. These incentives should be based on girl's natural tendencies.

Too much teaching has been mere mechanical formulas-- procedures whereby the teachers and pupils pursue specific and detailed instruction on what to do, how to do it, and what to expect. There is no day's order in health teaching. There is no single item of health which can function properly in isolation from all others. Health must become their way of living, not their reaction toward an outline or a unit of study.

Responsibility for developing the activities should be placed with the pupils as far as practical. Girls should be commended for success in personal health improvement. Care should be taken not to hold the girl responsible for improvement of conditions over which she has no control.

No matter what method is used in presenting the material, all subject matter should be presented in relationship to activities or situations in which the value and use of the subject matter will be understood and in which it may be applied. Subject matter presented apart from situations and activities in which it may be used has no bonds of connection by which to stimulate its recall on the appearance of a situation in which

it should function at a later time.

In the schools studied, the group discussion method of teaching ranked first. In this type of instruction, the girls should be encouraged to present the new facts as well as discuss them. Experiences of any individual of the group, whether in or out of school, may come up for class discussion. By this, use is made systematically of everyday incidents of the girl's life. Incidents give a natural and practical method of developing cause and effect relationships of condition and conduct. Variation in situations makes each health discussion interesting. To avoid waste of time, there must be supervision to see that useless material is not discussed. There is also the danger of repetition. The teacher's function is to guide, direct, and assist the girls in acquiring health knowledge and attitudes.

The method ranking second in the schools studied was the lecture and report type. The health program should stress activity but there must be a certain amount of fact knowledge as a basis for the development of a rational set of standards and habits. In choosing topics for reports, the girls should be encouraged to choose topics about which they have little previous knowledge so that the experience will be enriching. The length of the reports will vary. Girls should not feel that the reports are a task required by the teacher but an opportunity for them. Use of visual aids should be made in the lectures and reports when possible. Since so many of the classes only meet once a week, it would be advisable for the students to keep a notebook of the major points covered. This should be merely a reference book for them to recall the points forgotten between days of class meeting.

The method ranking third in the schools studied was the project and activities method. Kilpatrick insists that a project "is a purposeful act with emphasis on the word purpose. It is something projected."⁷ But a thoroughly motivated problem is not necessarily a project. A project requires the completion of some objective piece of work based on a problem or series of problems. Teaching health by projects is an attempt to break away from formalism in hygiene and health so that the pupil can work at real, everyday, life situations and activities. Projects will lead away from the old style textbooks and courses of study that have so many pages taught each day. If class is large enough, several projects may be carried on at the same time, but some one large project should be undertaken by the class as a whole. It is a good plan to provide a list of projects that may be completed and allow the girls to choose the one in which they are most interested.

The method ranking fourth in the schools studied was the lecture type. This type of teaching has received severe criticism. Strayer and Norsworthy criticize it because: 1. it makes of the learner a mere recipient instead of a thinker; 2. the material so gained does not become part of the mental life of the hearers and so it is not so well remembered nor so easily applied as material gained in other ways; 3. the instructor has no means of determining whether his class is getting the right ideas or wholly false ones; 4. the method lacks the interest in

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W. H. Kilpatrick, "The Project Method", Teachers College Bulletin, Series 10, No. 3, 1918, p. 4.

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the majority of cases. Another criticism of this method is that high school girls are not mature enough to keep sustained auditory attention for a long period of time. Considered from these angles, the lecture method would not be a very satisfactory method to use. If the "telling interludes" sometimes used by the teacher are referred to as the lecture type, then it has the advantages of clearness, emphasis, and economy to the learner. The best place to use the lecture method is in giving a clear, concise summary of each lesson. As a single method in teaching health, it is not satisfactory. Health must be acquired through doing, not through listening to someone talk about it.

The method ranking fifth was the method of inspection. This method covers several phases of school life. It may consist of daily inspection of personal habits. It may be a weekly or monthly check of health habits. In this form, health charts are usually used as a check. The principal weakness of this method is that too much emphasis is placed on the showing made on the chart rather than on the health habit. This may lead the girl to make false statements so that she will make a good showing before the class. Another form of this method is the inspecting of the lunches of the girls. If the girls eat at school, this may easily be done. Otherwise, the same difficulties as in habit reports may arise.

The method ranking sixth in the schools studied was the question and answer method. The weakness of this method is the responses that are not always to the point and thus waste

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Strayer and Norsworthy, How To Teach, New York: MacMillan Company, 1924, p. 207.

time; they often introduce irrelevancies; and often introduce erroneous ideas. They may cause digressions which may hide the main issue and entirely miss the point. Questions should be used in stimulating thinking and not as a test for knowledge. Since health is primarily an activities program, this type of method cannot be used to a very great extent.

The method ranking seventh was the problem solving method. This type of method has been closely related to the project method and many teachers used the terms interchangeably. But all problems are not projects. Problem solving may be entirely mental. Projects are always objective. The problems selected must be within the experience of the girls. They should arise from difficulties met in the girl's life. This should be a good method of motivating reading on matters that would otherwise be unnoticed. Girls should be encouraged to keep an open mind and see all sides of the problem. When the problem is presented to the girl, she will then learn the facts. This is the natural procedure in doing anything. Acquisition of knowledge in the hope of someday using it is a reversal of this.

The method ranking eighth and last in the schools was the method of club activity. By this, class meetings are held as club meetings with a student as chairman. Various names are used to designate this type of organization. It may be called Health Association, Health Society, Health Committee, Health League, Department of Health, or similiar titles. The girls should feel that they are responsible for the activity of the club and the teacher is not the "boss". The class discussion is carried on through the reports of the committees and sub-committees. Topics

of interest to the group form the basis of committee investigations. Pupils should be allowed, as far as possible, to select the committee in which subject they are most interested. The purpose of each committee is to study that phase of health assigned them and report their findings to the entire class. Each committee may be held responsible for a given number of class periods. Programs should be planned in advance but submitted to the teacher for approval. This method combines several of the other methods.

There are many devices that can be used to make the teaching more effective. They should be used to stimulate the health program but should not carry the pupil away from the real aim. Such devices include debates on health topics, scrap books, health songs and rhymes, posters, bulletin boards, question boxes, health newspaper, and tags used in "drives".

There is no one method that is the "best" method of teaching health. Each situation studied varies and requires a different method of teaching. As Dr. Symonds states "much experimental work of a basic sort remains to be done before we can give authoritative statement concerning the psychology of health instruction."⁹

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P. M. Symonds, Principles and Practices in Health Education, New York: American Child Health Association, 1931, p. 274.

IV. PHYSICAL EXAMINATIONS

A. Purpose Of The Physical Examination

In the beginning, the purposes of the physical examination were first, the discovery and quarantine of communicable diseases, and second, the discovery of defects and deformities. Both of these purposes were negative in their application and implication. In the light of the concepts of health, the physical examination, whereby the health status of each individual student is determined, is no longer regarded as an end in itself, but only as the first step in the health education program.

In most communities, the examination of the school child stops when she reaches high school. It has been thought if communicable diseases are prevented and defects corrected in the early years of the child's life, there would not be the need of a physical examination in high school. Many have thought that the high school pupil, after being examined for six or seven years by the school physician, would realize the necessity of an annual examination and would go to his own physician for a periodic examination. There is some truth in this belief but the theory has not worked out so well in practices. The high school group shows a large per cent of under-weights and postural defects. It is in this group that the tuberculosis death rate has shown a slight increase as compared to a marked decrease in all other groups. High-school pupils need annual physical examinations.

The purpose of the physical examination should be:

1. To find out the pupil's past health;
2. To estimate her physical fitness and ability to undertake the school program, both scholastic and physical;
3. To find abnormalities, record them, and secure the cor-

rection of remediable defects;

4. To protect students and teachers against communicable diseases;

5. To assist other school agencies in their effort to promote student health, by making accessible to them the knowledge of conditions revealed in the examination.

B. Extent Of The Examination

Practically all of the schools reported some type of examination. These ranged from inspection of eyes, ears, and throat, to a rather complete examination, both mental and physical. There are primarily three methods of examination for pupils. These are:

1. The typical examination in which the physician examines each pupil. This may include a rather complete examination of the head and its organs (hair, eyes, ears, nose, throat, and teeth), of the skin as far as possible, of the lungs, heart, and spine, and physical measurements (height, weight, blood pressure, and pulse rate).

2. The examination type called "screening". By this method, the nurse or teacher previously examines and sorts out the normal pupils. The physician confines his time to those in need of definite medical attention.

3. The method used by several cities in which a group of physicians examines the referred pupils, each physician taking a definite portion of the examination. Thus, one may test eyes, another heart, etc. This system provides the most expert service since it is possible to refer the pupil to the specialist suitable

for her case. Naturally, this is a very costly method.

The school physician is becoming more and more a medical consultant. Cases that required definite medical attention are referred to him. His time is used in this way to secure the best possible results from his medical training. The school nurse has a professional background and can perform most of the duties formerly in the hand of the doctor-inspector, thus leaving the doctor's time for examination of a more expert and extensive nature. The physical education teacher, through her training, should be able to recognize certain deviations from normal and assist in the examinations.

The thoroughness of the examination depends on the amount of time spent in giving, as well as the person giving it. From the wide range of time spent in giving the examination to individuals and to groups in the schools studied (see page 21), the lack and need of standardization is apparent with respect to thoroughness.

C. Records

The purpose of records is to give a living picture of the whole girl--physical, mental, emotional, and social. Records should be a composite of all the data accumulated in the various departments of the school. Otherwise, only fragments of the girl's life will be shown and fragments tend to distort the picture. Records should be cumulative so that the present status may be compared with the past record of development or to influences contributing to it. They should be as inclusive of opinions and findings as thought feasible. Large size cards

permit more detailed information, but they require more filing space. All records should be filed.

The personal history of the girl should be clearly provided for. This should include home conditions, sleeping habits, frequency of eating, amount of fluid drunk daily, types and amount of exercise, hobbies, recreation, use of leisure time, emotional stability, past illnesses, present minor or severe illnesses, serum and vaccination treatments, accidents and operations, health status of parents, and individual's evaluation of her own health.

The records should be kept in a place where they will be available to any one wanting to use them. The physical examination is not just for the doctor or nurse. Other teachers need this information about the student to guide them in assigning work and in forming their attitudes toward the student. They need to know more than the report sent to the parents. It is a function and duty of the health officers to make the complete records available to those concerned with adjusting the balance between individual students and their environment. The use of a code system of recording the findings will reduce the amount of time needed to give the examination, but it may render the findings unintelligible to the average person. The teachers need interpretations of the findings. To insure the full and adequate use of the findings by teachers and advisors, it is essential that the interpretation of the data be the responsibility of one person prepared for this type of work.

D. Use Of The Physical Examination

A physical examination is only an inquiry into a condition. Such an inquiry or survey implies a second step toward maintaining or improving that condition, based on the findings of the examination. It is this second step, the follow-up, that gives value to the first step. Otherwise, the time spent in giving examinations may be considered wasted. Health records facilitate the use of physical examinations in follow-up work.

There are a variety of uses of the findings of the physical examination. These include:

1. Report to parents of defects found;
2. Conferences with parents on the need of correcting pupil's defects;
3. Report of results to those in charge of the adjustments of the individual;
4. Basis for assignment to special classes;
5. Foundation for material taught in health education class;
6. Choice of students for motor activities and for teams.

As a general statement, it may be said that the chief use of the findings is that of making individual adjustments according to individual needs. Provisions should be made for the correction of defects. Many defects revealed are not considered of serious importance to the parents, and worth the cost necessary to correct them. It may be hard to convince the parent that a small expenditure now will save money and suffering in later years. There is need for parent education as well as pupil education along this line.

V. MATERIAL FOR HEALTH INSTRUCTION

A. Specific Health Instruction vs Correlated Instruction

Should definite and specific instruction of health be given a place within the school program? Many want health taught with other subject matter rather than taught in a specific class. There is little doubt that health should permeate through the entire curriculum. There is a wealth of material that can be taught in science, home economics, civics, and other subjects. But there are limits to its instruction in other courses. The other subjects have an abundance of material to teach and much of it does not yield gracefully to a correlation with health. If health comes in naturally in compatibility with the best interests of the course, then it should be taught. But forced or strained correlations are damaging to both interests. Why should health be correlated entirely? Doesn't English correlate with science? Yet we have instruction in both. Is health instruction less important than either of these?

The old methods of teaching hygiene are in dispute. This has resulted in the course and everything pertaining to it being thrown overboard. The idea of correlation has been substituted for this. The weakness of the old course was primarily in the subject matter taught. Much hygiene was taught as other subject matter was taught. The pupil was assigned so much in the textbook and then tested on this. A lot of meaningless and dry outlines of anatomy and physiology were strung together in a course and offered as "a scientific background for the solution of health problems". It was an easy way out for no one knew what the health problems were. Recent research in the field of

student's interests and other sources of health problems has revealed a wealth of raw material that can be used in hygiene courses. Adult empirical judgment should not be used as the basis for the selection of subject matter in health instruction. A different approach will change the subject matter and changed subject matter will produce different results.

B. Selection of Material for Instruction

There are a few guiding principles to be observed in the selection of material for instruction. These include:

1. The material should conform to acceptable standards of education in other fields.

2. Material should be pertinent, essential, and accurate.

3. Material should be within the range of comprehension of the pupil who is to use it. It should be difficult enough to challenge and easy enough to insure some degree of success.

4. The material should be positive rather than negative in character.

5. It should be up-to-date and conform to recent scientific findings.

6. It should encourage healthful living.

7. It should provide many kinds of activities so as to provide for individual differences.

8. It should be practical under given school conditions.

9. It should coordinate with the material taught in the natural and social sciences and other subjects in the same year, as much as possible.

10. Essential material should be placed in the lower levels

so as to serve the girls who will drop out of school in the earlier years of the high school.

C. Subject Matter

What should be included in the subject matter of the material taught? It should be concerned with real life problems and pupil needs. By pupil needs is meant the actual problems of living, those problems appearing every day in the pupil's lives, about which pupils have a natural curiosity and desire for information, or which teachers may anticipate and so fore-arm the pupils against an adverse environment. These problems should be ascertained by investigation supported as far as possible by facts rather than opinions. A committee, headed by Delbert Oberteuffer of Ohio, has made a research in the field of pupil needs. Pupils were asked to list any and all health problems or questions they had. These were summarized and compared to problems found in other research studies, popular and textbook literature, health examinations, adult judgment, and vital statistics. All of these sources were checked and worked into a course of study for Ohio.¹ Lerrigo has analyzed the health problems found in sources dealing with health and listed these problems. 116 groups of problems were listed and classified into 10 divisions. These were ranked according to frequency of mention in the sources analyzed. These ranks were control of infection first, personal hygiene second, community hygiene

¹ Health and Physical Education Series of the State of Ohio, Department of Education Vol. I-III, Columbus, Ohio: Department of Education, 1932.

third, racial hygiene fourth, mental and nervous hygiene fifth, professional health service sixth, degenerative diseases seventh, temperance education eighth, safety education ninth, and interpretative material tenth. The frequency of mention is not an adequate basis for judging that the importance of each problem is indicated by the exact order in which it is ranked."² Strang made a analysis of courses of study and textbooks and listed the marked variations in number, kind, grade placement, inaccuracies, and lack of psychological organization of the statements found in these. She found "definite agreement in the importance of food problems based on their frequency of mention. Twenty-one per cent of the total frequency of mention was given to food facts. Cleanliness and disease received the next highest frequency of mention. Other than this, there was definite disagreement concerning the largest proportion of the statements. Eighty-one per cent were mentioned less than five times and fifty-one per cent were mentioned only once. 4227 statements were listed."³

In selecting subject matter for high school, the mental level of the pupils should be kept in mind. Many courses now offered to high-school pupils are of an infantile character. Health habits should be established before the girl reaches high school

²

M. O. Lerrigo, Health Problems Source, New York: Teachers College, Columbia University, Contribution to Education #224, 1926, p. 133.

³

Ruth Strang, Subject Matter in Health Education, New York: Teachers College, Columbia University, Contributions to Education #222, 1926, p. 101.

but unfortunately this is seldom the case. Effort must be spent to establish and correct health habits all the time.

Health subject matter should be arranged by life functions rather than by systems of the body. The approach should not be through unrelated details of anatomy. The study of life should begin with life's functions and not the body parts. It should deal with functional things first and use the structural as explanatory matter.

The Florida course of study suggests that the theme of study for each high-school class be the "national, state, and local community health, with personal application and practices. It is suggested the sophomores study national health, juniors, state health, and seniors, local or county and city health. It is suggested that seniors study health of local community because of their more mature minds, and of smaller classes to make surveys and studies of the local conditions. Because of the undeveloped health machinery in most communities, a knowledge of national and state public health practices will have to be used as a basis for judging local standards. Sources of information are confined to publications of the national, state, and local organizations of health and to state adopted textbooks."⁴ It further suggests that activity in the class be carried on through pupil committees on communicable disease, public health nursing, child welfare, sanitary engineering, vital statistics, diagnostic laboratories, education and publicity, sports and

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State Syllabus, Health and Physical Education Senior High Schools, Tallahassee, Florida: State Department of Public Instruction, 1926, p. 32.

recreation, and industrial health.

Another plan of study is to present a large unit each semester. For example, one semester study personal hygiene. This should include the meaning of health, personal appearance, skin and its care, hygiene of the mouth, hygiene of the eyes, ears, nose, and throat, posture, care of the feet, cleanliness, physiology, exercise and rest, elimination of body wastes, body defects, and personal health habits. Another semester, study may be on nutrition. This should include the food needs of the body, process of digestion and assimilation, various types of food, diets, eating and drinking habits, and over-weight and under-weight. Another semester, study may be on community hygiene. Include in this the public health agencies, federal, state, and local, sanitation, water supply, industrial hygiene, recreational facilities, and personal habits in relation to community. Another semester, study may be on first aid. Include in this a study of the field of first aid, common emergencies, shocks, bandaging, splints, and carrying, bruises, sprains, strains, fractures, dislocations, wounds and disinfectants, hemorrhages, injuries due to heat or cold, suffocation and artificial respiration, unconsciousness, and safety rules. Another semester, study may be on mental and social hygiene. Include in this social problems of today, biological concept of reproduction in animals and plants, heredity and environment, sex hygiene, control of emotions, transmission and control of communicable disease, education for parenthood, home and family relationship, and child welfare.

In choosing subject matter for health education, one is apt

to become an extremist. Health has so many important aspects and it necessitates so many practices vital to fullest efficiency in life, that one finds difficulty in seeking a balance between them. Some say that nutrition is the most important part of life; others contend that if nothing more is done, there should be built into the lives of the pupils, the practice of taking daily exercise. Each phase of healthful living has its advocates who urge that health be gained through the cultivation of a single item. There is also the task of determining whether education should prepare the pupil to live in the present or whether it should train for the future. Each pupil lives now in relation to the future. Subject matter should be chosen to meet the ends of the present as well as the ends of the future.

D. Course of Study in Health Instruction

One of the functions of the State Department of Education is to provide a course of study for the local school systems. Very few states have a course of study for health education. Several report courses in the making. The material in the course of study should meet the local need. Thus the state course must be very elastic. It should consider the problem of pupil interest and pupil need. In addition, it should consider the problems related to materials provided by the teacher and school district. The resourcefulness of the teacher is rather limited when it comes to obtaining critical evaluation.

The course of study should determine the needs of each year; should work out the habits, knowledge, and attitudes necessary to meet these needs; and should suggest some of the school situations

in which this subject matter may be taught. It should embody comprehensive instruction on the use of devices and methods in health teaching that are appropriate for arousing interests.

Fifty-five county and city courses of study were studied and the twenty leading topics listed and ranked. These topics in their order of rank were: "personal hygiene first, nutrition second, correct breathing third, posture fourth, exercise fifth, rest and sleep sixth, hygiene of environment seventh, alcohol, tobacco and drugs eighth, pure water ninth, rules of health tenth, first aid eleventh, digestion twelfth, communicable diseases thirteenth, the skeleton fourteenth, respiratory system fifteenth, elimination of waste sixteenth, circulatory system seventeenth, nervous system eighteenth, safety nineteenth, and insect carriers of disease twentieth."⁵

The most common defects in content of the courses of study analyzed were:

1. Overcrowding of subject matter;
2. Including information not within the range of the pupil's experience;
3. Including unessential and impractical information;
4. Misinterpreting scientific facts;
5. Emphasizing symptoms and causes of disease and not prevention of diseases.

The following principles should be used as guides in preparing a course of study:

⁵

Almack and Terman, Hygiene of the School Child, New York: Houghton Mifflin Company, 1929, p. 476.

1. The subject material must be scientifically accurate throughout and in thorough accord with the best available knowledge in the biological sciences.

2. The course should be on an activity basis, giving constant opportunity for healthful practice, and aimed more at the development of health conduct than at the acquisition of knowledge.

3. It should be built in response to data from student life concerning needs, interests, and capacities, and not set up solely in terms of what course-makers believe should be included.

4. It should include only those offerings which will be profitable to the learners in a personal sense and profitable to their future cooperators, including the state, in a social sense.

5. It should foster the conception of health as a qualitative result of the interdependence of all the vital systems, involving the mental and social aspects of living as well as the physical.

6. It should constantly interpret health from a social point of view, explaining health in terms of social use.

7. There should be definite continuity of subject matter, so as to preclude any idea that health results from the development of any one or unrelated systems.

8. The specific and intrinsic needs and interests of secondary-school students should receive full treatment, sacrificing if ever necessary, deferred values for immediate satisfactions.

9. The course should not assume that health can be made an academic subject to the extent that it can be subjected to

the usual order of assignments, topics, examinations, and grading schemes. The course of study in health, therefore, should be elastic, capable of change with the interest and needs of the class.

10. There should be an abundance of material of varying difficulty so as to admit of choice suited to the needs of the individuals differing in capacity and experience.

11. The units of work within the course of study should be progressively graded so as to provide for continuous growth in the subject.

12. The subject matter should be selected, arranged, and written in accordance with the best available knowledge regarding the learning process and the accepted principles and objectives of secondary education.

13. The course should provide frequent and specific opportunity for correlation with other subjects in the secondary curriculum, and with other parts of the health education program.

14. The drill material provided should be selected with regard for relative values; it should be suggestive rather than exhaustive, meeting the varying capacities, interests, and needs of the pupils. It should stimulate self-testing.

15. The general tone of the course with respect to all controversial issues should be one of discreet judgment, free from prejudicial or inaccurate statements. The learnings should never be colored with emotional bias for want of scientific data.

16. Active cooperation of the home and community should be sought through the activities of the course.

17. The technique of thought presentation should be from

the particular to the general, each new abstraction, principle, or generalization being developed through intimate, concrete, individual experience before reaching its final form.

18. Frequent periods for review should be interspersed throughout the course, and questions, topics for reference, reading suggestions, and other devices should be freely used to assist the learner.

19. The use of available educational tests should be encouraged in the course of study, ample time being allotted to such purposes.

20. There should be provided, in connection with each major thought division, an up-to-date series of standard and reliable references, so arranged as to stimulate in the student a desire for a widening of his interests and knowledge.

21. There should be a complete topical bibliography for the use of teachers, appended to the course of study.

22. Questions relative to text or discussion should precede the chapter material.

23. The course of study should require the mastery of a minimum of scientific terminology, sufficient to designate the ordinary health processes intelligently.

24. The course of study should be understood to be, and so labelled, a "tentative" course of study until such a time as sufficient data from student and adult life are incorporated into it for it to become adequate to answer the needs of the group for which the course is intended."⁶

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Delbert Oberteuffer, School Health Progress, New York: American Child Health Association, 1930, Pp. 225-27.

E. Textbooks

Most teachers are textbook teachers. This is the result of an American practice which has become a tradition. Nearly all teachers begin their teaching by almost exclusive use of the textbook; some never advance any farther. If the use of textbook methods is so universal, why change? Not because the textbook is used, but because it is used as it is—formally, thoughtlessly. The objection is to the method used in using the textbooks, namely, recitation on the book for the purpose of testing the pupil's preparation on a formal assignment of certain pages. The textbook should be explained, interpreted, and discussed in class. It should give a background for other supplementary material.

Health textbooks, the same as other textbooks, have changed in the matter of content in the last few years. In previous years, much space was given to anatomy and physiology. Now, other topics claim more space. R. S. Chambers made an analysis of 16 textbooks covering the period of 1890 to 1925, on the distribution of space among major topics. His findings are shown in the following table:⁷

Topic	1890	1900	1910	2 most
	1900	1910	1925	recent books
	%	%	%	%
Physiology and anatomy	65.8	36.3	22.5	5.0
Alcohol and tobacco	13.2	9.7	6.2	9.3

⁷

R. S. Chambers, Needs and Practices in Health Instruction, M. A. Thesis, Stanford University, 1926, p. 77.

Common Diseases	0.0	24.4	21.2	13.8
Exercise and posture	3.2	5.7	8.4	8.0
Sanitation	2.9	5.1	11.7	31.0
Rules of health	1.4	7.1	11.4	9.0
Miscellaneous	13.5	11.4	18.4	23.8

The merit of books should be considered on a basis of content and method. Textbooks used should meet the following criteria:

1. The subject material must be scientifically accurate throughout, in thorough accord with the best available knowledge in the biological sciences. In situations in which there is a lack of evidence, the most widely accepted view should be given but not stated as scientific fact. Personal prejudices or exaggerations of the author should be kept at a minimum.

2. The subject material should be chosen after an analysis has been made of the needs, curiosities, and interests of the age group for which the book is intended. The specific and intrinsic health needs of secondary-school students should be met.

3. The subject material should consist largely of a succession of experiences, calling for action, and aimed more at the modification and development of conduct than at the acquisition of knowledge.

4. The technique of thought presentation should be from the particular to the general, explaining a function first and the reasons and structure related to it later. The general tone of the text should emphasize the improvement of living, rather than anatomical structure or physiological function; and the approach to the latter should always be through concrete problems of life.

5. The text must meet the social needs of the community and of the various groups within the community.

6. The concept of health as a qualitative result of the interdependence of all the systems of the body, involving the mental and social aspects of living as well as physical, should be developed in the text.

7. The text should present health from a social point of view and should explain health in terms of productive social use, rather than personal acquisition of strength and power.

8. Regarding points of definite controversy, the text should include briefs of all sides, encouraging and permitting the student to seek further enlightenment but, above all, to make up his own mind, in response to truthfully given statements.

9. There should be an abundance of material of varying difficulty so as to admit of choice suited to the needs of the individuals differing in capacity and experience.

10. There should be definite continuity of subject matter so as to preclude any idea that health results from the development of any one or unrelated systems.

11. The point of view that normal development, rather than prevention or cure, is predominantly pertinent to the secondary age group should be clearly held in the text.

12. The subject matter should be selected, arranged, and written in accordance with the best available knowledge regarding the learning process and the accepted principles and objectives of secondary education.

13. There should be a reference list of supplementary reading at the end of each chapter, and all quotations and

citations of evidence should be plainly marked as footnotes in the text. References should be made to books usually found in school libraries or those easily procurable.

14. The text should be written to include no more than the optimum civil use of technical terms. In passages where technical vocabulary must be used, the words should be defined at that place in the text and thereafter used frequently in the content. A pronouncing glossary should be included in the book.

15. Specific instruction should be given in the development of normal mental life, emphasis being placed on the attainment of normal intelligent control over the processes of life rather than upon the prevention of neuroses and psychoses.

16. The style of writing should be clear, sincere, vigorous, graphic, and adapted to the mental and social levels of the pupils.

17. The copyright should be recent in proportion to the development in the field.

18. The material should be gathered around a few main topics rather than around many.

19. The teacher's preface, preferably the teacher's manual, should give the author's point of view of the aims of the subject and specific objectives and varied suggestions for use of the text in meeting the difficulties within the field.

20. The introduction should be so related to the previous experiences of the child and should so arouse his curiosity and interest that he will proceed with a favorable attitude toward the text. This can be attained by an intimate and suggestive explanation of the plans and purposes of the text and of what

may be gained through its study.

21. The table of contents should give a definite idea of the scope and outline of the subjects as presented, including titles of chapters and important subdivisions.

22. The textbook should have a comprehensive index, with multiple references to each given topic in clear type.

23. The appendix should contain a usable selection of all needed tables, charts, graphs, lists of formulae, supplementary drill material, and suggestive topics and problems to permit further work of local interest.

24. Summaries should cover only those things to be remembered; give a new view of the subject matter; show the main points of the topics; stimulate to reorganization and further study; suggest problems for pupils to solve--problems fitting their needs and interests in life situations.

25. Illustrations, maps, and sketches should be authentic, up-to-date, in keeping with the subject, educative, and artistically attractive. They should be properly explained by a descriptive title with further discussion in the text.

26. Study helps should consist of problems, questions, and topics suggestive of life situations for various individuals of the group; definite directions for method of attacking the tasks set. They should be of such variety that pupils may search independently for their material, and so arranged as to establish good study habits. As a result of such aids, the pupil should find himself becoming increasingly independent.

27. General reviews should be so organized that, with due regard for economy of learning, they will stimulate thought

through a new outlook and give an opportunity for reorganization of subject matter.

28. The drill material provided should be selected with regard for relative values; it should be suggestive rather than exhaustive, meeting the varying capacities, interests, and needs of the pupils. It should stimulate self-testing.

29. The binding should be durable and flexible enough to withstand careless handling and should be pleasing in color and design.

30. The paper should have gloss sufficient to take attractive cuts but not enough to cause eye strain by producing lights of discomforting intensity.

31. The size of type and the spacing between words and lines should aim to make reading easy.

32. The material should be arranged with a suitable margin (allowing for notes) and with proper change of type and spacing to denote relative importance of topic, with due regard to proper balance and finished appearance of the page.

F. Supplementary Materials

Besides courses of study and textbooks, there are other sources of material that may be used in teaching health. Included in this are newspaper and magazine articles, posters, films, mortality and morbidity statistics, actual experience with real children, school "drives", physical examination statistics, absence from school statistics, and tabulated lists of questions from students.

In the schools studied, supplementary materials used most frequently were newspaper and magazine articles. These are available to everyone, everywhere. Most newspapers carry articles on health and run health columns. News notes on health may be found which will add interest to the health class. Scrap books, containing news items, sketches and pictures cut out from magazines, are useful in establishing habits. Hygeia and the Nation's Health are two magazines rich in material for class discussion. A word of caution should be given against the unscrupulous use of the almost limitless amount of advertising articles on health. Articles should not be used unless the authenticity of the material has been proven.

About twenty years ago, an exhibit was held in New York City of all the helpful procedures to be used in teaching. It was largely made up of the portrayal of posters. Since that time, posters have been used to a greater extent. A good poster does not create a habit, but it can suggest the desirability of the habit and arouse an emotional response. It can serve as a constant reminder in the necessary practices of right habits.

A successful poster is a simple one. It expresses one clear thought so plainly that it can be understood at a glance. It should attract instant attention, arouse interest, remain in the memory and bring a definite response. Ideas should be associated, right action suggested, and an appeal made to the will.

Posters may be purchased or may be made by the pupils as part of their health work. Organizations from which posters may be obtained are listed in the Appendix, page 83. If pupils make posters, they should keep in mind that quality of line, contrast,

and color are the means of attracting and holding attention. The art department should be enlisted to assist in this field.

There is a definite place in the health program for the use of visual aids. These include health films and slides. In the Appendix, page 86 is a list of sources of films and slides. In selecting these aids, there are certain things to keep in mind:

1. They should be scientifically accurate.
2. They should not stress one aspect of the subject and neglect others. This is especially noticeable in films and slides put out by commercial concerns.
3. They should be educational. They may be accurate but from the educational viewpoint, they may not be worth the time spent in showing them.
4. They should be conducive to wholesome attitudes. They should not over-emphasize disease or tend to arouse fear.
5. They should be adapted to the age and interests of high-school girls.
6. They should be used as a basis for some real teaching. They should teach a lesson and not merely entertain. The class should be prepared, before seeing the film, to observe certain phases.

Vital statistics prove an index to the health of a community and indicate out-standing health problems. A study of local statistics may be made and the problems located. These problems may be worked on for further class study. State statistics may be studied and compared with other states. Teaching from vital statistics should emphasize positive rather than negative attitudes and prevention rather than cure of illnesses.

One of the most practical sources of material is the actual experiences with real children. This may be carried on in various ways. One way is the study of babies. They may be brought to school and measured and weighed by the class, habits that are formed recorded, and changes noted as time passes. The formation of habits may be discussed. Children in the primary grades may be studied. Each girl may be given a certain child to study and at the end of the period make a report on all that has been observed and found out about it. Problems will arise based on questions of the pupils.

School "drives" are a good way to summarize the completion of a large unit of study. Pupils should have become observant of the habits of their fellow students and should be interested in correcting any faulty habits. School "drives" may be carried out through the use of editorials, cartoons and slogans in the school paper, use of bulletins, bulletin boards, posters, exhibits, auditorium programs, and tag days.

The use of physical examination statistics makes the examination more real to the girl. If she understands what was discovered in the examination, she will be more interested in improving herself. No one will think vitally about a thing unless that thing is vital to her. A study of examination statistics should make the physical condition vital. Opportunity should be given for the pupils to ask questions and to find out the replies to them. Emphasis should be on the correction of remediable defects.

A study of absences from school statistics should result in a decrease in absences. The most common cause for absences should

be determined and effort spent in removing those causes. In most schools, the most common causes are the minor ailments, especially the common cold. These causes afford problems that can be worked out by the pupils.

One school reported the use of tabulated questions from students. A question box was placed in a prominent place and any questions occurring to the students at any time were written and put in the box. Each week the questions were checked and put in lists for class study. Another school had the pupils make out a list of bad health habits noticed around school and outside of school. These habits were discussed and methods of correcting them agreed upon. Later, checks were made to see the results in improved habits.

VI. MEASUREMENT OF RESULTS OF HEALTH TEACHING

A. Meaning of Measurement

Health is a very hard thing to define, therefore it is a difficult thing to measure. Health by definition contains not only what is static today, but contains potentialities for the future as well. The success of the health program should be measured by the improved health of the pupils, by the improvement in their health behavior, and by desirable changes in their attitudes toward healthful living. Accurate measurement of health is difficult since many other factors enter into the improvement of health or the lack of improvement in health. Only a portion of the influences on health are controllable and only a part of these controllable influences are subject to modification and change within the school. These are the ones for which measurement is attempted.

Measurement should be used as a means of determining school progress toward goals by comparing present achievement with past, and as a means of comparing results achieved in one situation with those achieved in another.

B. Methods of Measurement

The demand steadily increases for accurate and objective measurement of results. Most of the methods checked in the study made were mainly subjective opinions. The only tangible index of attitude is the behavior of the pupil. This can be measured only, at present, by observation which is subjective. It is valuable to estimate improvement, as it leads to analysis and self-criticism. It cannot be used to compare results before and after a given

procedure. Very few health tests have been standardized. All that have been are based on health knowledge.

The method checked most frequently in the study was the method of testing with written tests of health knowledge. This is the traditional type of examination handed down from the old hygiene and physiology period of teaching health. Facts were learned and tested. A certain amount of factual knowledge is necessary but it should be taught in relation to health attitudes and conduct. Since it is impossible to form in the school all of the specific health habit needs of the individual, knowledge is essential in aiding in the individual to make satisfactory responses to new situations. Knowledge is also needed in furnishing rational motives for action. Tests of knowledge test facts. Such tests are subjective as they are graded according to the teacher's opinion of the value of their answer. There is a great opportunity to devise new-type tests of health knowledge.

The method ranking second was observation of health activities. This is probably the most natural way of checking. This is purely subjective. Observations may be made in the class-room, in the lunch room, on the playground, in the lavatories, in the gymnasium, and around school during leisure time. A combination of these observations should be made. A good plan is to check the teacher's estimate with the estimate of other teachers or nurse.

The method ranking third was the self-checking on health practices. There are a variety of forms which may be used. Daily records or score cards upon which health habit performance may be checked is the usual form. Care must be taken that these

are accurately reported. Health habits should be emphasized and not the health reports. Comparison of weight records, illness records, and other objective evidence of the pupil's state of health will serve as a partial check on the accuracy of the report. Daily records for a short period of time may be kept at the beginning and at the end of the period and the results compared. Girls should be allowed to work out their own health habit chart and then report on it. This method may include the pupil's report at the end of the course regarding her estimation of personal improvements made during the course.

The method ranking fourth was the anatomical and physiological measurement of health. This includes the monthly weighing program. Improvement in weight or lack of improvement may be due to some underlying cause. If this cause has not been determined, the pupil should not be held responsible. Other conditions besides health education affect the improvement. Home environment, poverty, etc. should be understood and interpreted in the results obtained. This method should also include the follow-up of remediable defects corrected.

The method ranking fifth was the written test of health attitudes. This is subjective means of testing what the girl believes and how she feels about health. Attitudes can only be measured by behavior and it is a difficult task to put this reaction in the written form. These tests are usually reactions to certain situations. Research needs to be done in this field.

The method ranking sixth was the standardized health knowledge tests. Probably the best known of this type is the Gate-Strang Health Knowledge Test, published by Teachers College, Columbia

University, New York City in 1925. This includes 520 test exercises, classified under topical headings and arranged from easiest to hardest in each group. Tests of this type may be used to determine progress made during the period of study by giving the test at the beginning of the period and again at the end. Comparison of results of the two tests will reveal the progress made. This type of test should be used more as it is reliable and valid. There are two reasons why it is not; (1) there are so few tests of this type in the field; (2) they are expensive.

The method ranking last was the rating-by-others method. This should be based on observation made while the pupil is off guard. This may be made by fellow pupils or by older persons. This method is subject to the same fallacies as found in any rating method. It is a purely subjective measure and should be regarded as such. Pupils have a better opportunity to judge health habits of others outside of school but are apt to be prejudiced in their judgments.

C. Summary

Information in the field of health education can be measured as easily in this field as in others, but there are other factors that defy measurement. Up to the present, very little progress has been made in measuring health habits objectively. It is one thing to agree upon goals but quite another to measure the degree of attainment. This field is so new that the agreement on goals has hardly been reached. There is need for research in the fields of measurements.

Until more scientific measures are worked out, estimates and evaluations must be used to judge progress. Whenever possible,

graphs of results should be made. This will give a picture of the whole group as well as to arouse pupil interest.

VII. RECOMMENDATIONS FOR A COURSE OF STUDY FOR THE
INDIANA STATE TRAINING SCHOOL

A. The Present Situation in the Training School

Health education is required of the freshmen and sophomores of the Indiana State Training School. It is taught in definite health education class one day a week for two years. Such a course has been taught for only the past two years. Before that time, the health work was correlated with the physical education work. The class is taught by the teacher of physical education. The subject matter taught in this class has been determined by the teacher. In 1931, a Tentative Course of Study in Health and Physical Education; Grades Seven to Twelve was published by the State Department of Public Instruction. This has been used as a guide in the class. Wood and Hutchinson, New Handbook of Health, has been used as the text in the course. The Teachers College employs a doctor and nurse but their services were not available for the Training School until the spring of 1932. At that time, they started giving a physical examination to each pupil. Previous to that time, no examinations were given.

B. Recommendations

In view of the preceding discussion on health instruction, the following recommendations are made to apply to the health instruction in the Training School:

1. A physical examination should be given to all the girls in school at the beginning of this fall term. This should be given by the College physician, assisted by his nurse. The records

of these examinations should be filed in the office of the training school physical education teacher.

2. At the beginning of the fall term in following years, all entering girls and all girls who had a low record in the previous examination should be examined by the physician. All others should be re-examined by the physical education teacher. Any showing abnormalities should be referred to the physician.

3. Since there is no school nurse, the follow-up work should be done by the physical education teacher. This should include notices to parents on remediable defects in pupils, conferences with parents and family doctors, and checks to see that defects are corrected.

4. The physical education teacher should make a report to the principal and other teachers of the findings of the physical examinations.

5. No textbooks should be required of the pupils. A list of references books should be given each pupil.

6. One or two large units of subject matter should be studied each semester. Personal hygiene should be studied the first semester, first aid and nutrition the second semester, community hygiene the third semester, and mental and social hygiene the fourth semester.

7. In the first semester, the following topics on personal hygiene should be studied:

a. Sufficient knowledge of body structure and functions to serve as a background;

b. Personal appearance, which will include care of the skin and complexion, hair, eyes, throat, mouth, hands and nails;

- c. Cleanliness;
- d. Clothing;
- e. Posture, and care of the feet;
- f. Exercise, fresh air, sleep, and rest;
- g. Elimination of body waste.

8. In the second semester, the following topics on first aid should be studied:

- a. The field of first aid;
- b. Common emergencies;
- c. Bandaging, splints, and carrying;
- d. Injuries in which the skin is not broken, which include fractures, dislocations, sprains, strains, and bruises;
- e. Injuries in which the skin is broken, which include infections, cuts, and hemorrhages;
- f. Foreign bodies in the eye, ear, nose, and throat;
- g. Injuries due to heat, cold, or electricity;
- h. Poisons, which include gas, chemical, food, animal, and plant poisons.

The following topics of nutrition should be studied:

- a. Foods of the body;
- b. Digestion and assimilation;
- c. Types of food, which include heat and energy-giving foods, body-building foods, protective and regulating foods;
- d. Diets, which include those for under-weights, normal, over-weights, and sick room;
- e. Eating and drinking habits;
- f. Food fads and advertising.

9. In the third semester, the following topics on community

health should be studied:

- a. Needs and problems of community health;
- b. Laws, regulations, and rules concerning health; local, state, and national;
- c. Health agencies, local, state, and national; governmental, semi-public, philanthropic, and charitable;
- d. Sanitary conditions and standards; sewage disposal;
- e. Vital statistics;
- f. Water, milk, meat supply; food adulteration;
- g. Recreational facilities;
- h. Personal habits in relation to community hygiene.

10. In the fourth semester, the following topics on social and mental hygiene should be studied:

- a. Biological concepts of reproduction in plant and animals;
- b. Normal adolescent development and sex hygiene;
- c. Eugenics;
- d. Transmission and control of communicable disease;
- e. Stimulants and narcotics;
- f. Home and family relationships; health influenced by relationships between parent, between parents and children, and between children;
- g. Symptoms of mental ill health, which include insomnia, irritability, lack of power to control self, super-sensitiveness, overconscientious, kleptomania, stubbornness, nervous spasms and twitching, idle dreaming, and excessive individualism;
- h. Child welfare, which includes normal habits and growth of children; racial hygiene.

11. There should be extensive use of reference and supplemen-

tary materials. In teaching, the subject matter should determine the type of method used. The formation of habits, attitudes, and skills should be the outcomes expected.

12. Objective measures of results should be used as much as possible. A survey of attitudes and knowledge already possessed by the pupils should be made at the beginning of the term. A final test of the same sort should show an improvement in these attitudes and knowledge.

13. The physical education teacher should use every opportunity to interest the other teachers in health to the end that health work will be finely intergrated from class to class.

VIII. APPENDIX

A. The Questionnaire

HEALTH EDUCATION FOR GIRLS

I. The School

Name _____ Located at _____

Number of girls in school _____

Check the one responsible for the health education program.

Principal	Dean of girls
Health education teacher	Home economics teacher
Doctor	Physical education teacher
Nurse	Science teacher
Health counselor	
Some other person (Name position) _____	

Do you have a health education committee acting in your school?

Who is on this committee (official position)? _____

How long have you had a health education program in your school?

Check the health officers you have in your school.

School physician	School dentist
School nurse	School psychiatrist
Any others _____	

Check the provision for health education used.

Health education class	Social studies class
Physical education class	Science class
Health Club	Home economics class
Any other class (Name) _____	

How much time is spent in instruction?

Minutes daily _____	Days per week _____
Weeks per year _____	Number of years _____

Is health education required? _____ Elective? _____

When required, in what year or years of student's course

(Fr. S. Jr. Sr.) is it given? _____ Elective? _____

Do you receive any instructional help (printed matter, etc.)

from your State Department of Education? _____

II. Material

Check units taught in your specific health instruction class.

Food	Hair
Cleanliness	Ears
Disease	Education for parenthood
Posture	Defects
Care of feet	Home and family
Air and sunlight	Industrial hygiene
Teeth	Physiology
Clothing	School hygiene
Sleep and rest	Sex hygiene
Eyes	Alcohol, tobacco, and drugs
First aid	Exercise
Mental hygiene	Safety
Arousing the desire for health	Height and weight
Heart and blood	Elimination of waste
Health agencies	
Other units _____	

List the textbooks used in the course.

Do you have a state course of study? _____

By whom is it prepared? _____

Is it in the form of an outline or syllabus? _____

Check the following supplementary material you use.

Newspaper articles
 Magazine articles
 Mortality and morbidity statistics
 Actual experience with real children
 Posters
 School drives
 Physical examination statistics
 Absence from school statistics
 Any other _____

III. Methods

Check the methods used in teaching health education.

Lecture and reports	Question and answer
Lectures	Problem solving
Group discussion	Inspection
Projects and activities	Club activity
Any other _____	

Physical or medical examination

To whom is examination given (Fr. S. Jr. Sr.)? _____

By whom is it given (Physician, nurse, special teacher. etc.)?

Amount of time usually spent in giving individual examination

Amount of time usually spent in giving examination to group

How are records kept? _____

Where records are kept. _____

Do you have any follow-up work as a result of the examination?

What kind of follow-up work? _____

Who does the follow-up work? _____

IV. Measurement of results

Do you try to measure the results of your health teaching? _____

Check the methods you use.

Anatomical and physiological measurement of health
Written tests of health knowledge
Written tests of health attitudes
Standardized health knowledge tests
Observation of health activities
Self-checking on health practices
Rating by others on health practices
Any other method _____

Do you have a statistical report of results? _____

Do you have a statistical report of follow-up work? _____

Note: We would appreciate having copies of any printed material
(courses of study, etc.) which you use.

B. Letter Accompanying Questionnaire

of the Board

Indiana State Teachers College

Officers of the Faculty

M. KELTNER - PRESIDENT
 BENBRIDGE - SECRETARY
 COX - TREASURER

LINNAEUS N. HINES - PRESIDENT
 J. W. JONES - DEAN
 CYRIL C. CONNELLY - CONTROLLER
 ROBERT K. DEVRICKS - REGISTRAR

TERRE HAUTE, INDIANA

February 21, 1932

V. G. Barnes, Principal
 Central High School
 Madison, Wisconsin

Dear Sir:

Health Education is now a required subject in the Indiana high-school curriculum. Just what this curriculum should include can best be determined by direct study of various groups. The Physical Education Critic of our Training School, Miss Mary Fread, who is on a leave of absence this year, is making a survey of Health Education for high-school girls in various cities. Enclosed you will find a list of questions on Health Education. We shall appreciate it if you will put this in the hands of the person who can give us the information. May we have the papers filled out and returned as soon as possible?

If you are interested in our findings, we shall be glad to send you a copy of our report when it is completed.

Yours truly,

L. N. Hines

C. Textbooks Listed In Questionnaire

- Andress, Aldinger and Goldberger, Health Essentials, New York: Ginn and Company, 1928.
- Andress and Brown, Science and The Way To Health, New York: Ginn and Company, 1929.
- Broadhurst and Lerrigo, Health Horizons, New York: Silver, Burdett and Company, 1931.
- Burkard, Chambers and Maroney, Health and Human Welfare, New York: Lyons and Carnahan, 1929.
- Carpenter and Wood, Our Environment, How We Adapt Ourselves To It, New York: Allyn and Bacon, 1928.
- Clendenings, Human Body, New York: Alfred A Knopf, 1927.
- Cooper, Barker and Mitchell, Nutrition In Health and Disease, Philadelphia: J. B. Lippincott Company, 1929.
- Davidson, Human Body and Health, New York: American Book Company, 1928.
- * Delano, Home Hygiene and Care of the Sick, American Red Cross, Philadelphia: Blakiston's Son and Company, 1925.
- Delano, Home Nursing and Child Care, American Red Cross, Philadelphia: Blakiston's Son and Company, 1925.
- Emerson and Betts, Physiology and Hygiene, New York: Bobbs-Merrill Company, 1928.
- Goodspeed and Johnson, Care and Training of Children, Philadelphia: J. B. Lippincott Company, 1929.
- Harris and Lacy, Everyday Foods, New York: Houghton-Mifflin Company, 1927.
- Justin and Rust, Problems in Home Making, Philadelphia: J. B. Lippincott Company, 1929.

- Lippitt, Manual of Corrective Gymnastics, New York: MacMillan Company, 1923.
- Lippitt, Personal Hygiene and Home Nursing, Yonkers On Hudson, New York: World Book Company, 1919.
- *Lynch, First Aid, American Red Cross, Philadelphia: Blakiston's Son and Company, 1929.
- *Meridith, Health of Youth, Philadelphia; Blakiston's Son and Company, 1928.
- Thackston and Thackston, Human Health, New York: Henry Holt and Company, 1951.
- Turner and Collins, Community Health, New York: D. C. Heath Company, 1928.
- Webb and Dideort, Early Steps in Science, New York: Appleton and Company, 1927.
- Wheeler, Foods and Nutrition, American Red Cross, Philadelphia: Blakiston's Son and Company, 1927.
- *Williams, Healthful Living, New York: MacMillan Company, 1928.
- *Williams, Personal Hygiene Applied, Philadelphia: W. B. Saunders, 1928.
- Wood and Dansdill, Byways to Health, New York: Appleton and Company, 1925.
- Wood and Hutchinson, New Handbook of Health, New York: Houghton Mifflin Company, 1926.
- ** Anatomy and First Aid
- ** Disease and Its Prevention
- ** Physiology and Personal Hygiene
- *Named more than once.
- **Book listed but no author named.

D. Organizations From Which Health Education
Materials May Be Obtained

American Child Health Association, 370 Seventh Avenue, New York
City.

American Genetic Association, Victor Building, Washington, D. C.

American Home Economics Association, 617 Mills Building, Washington,
D. C.

American Medical Association, 535 North Dearborn Street, Chicago,
Illinois.

American Physical Education Association, Springfield, Massachusetts.

American Posture League, 1 Madison Avenue, New York City.

American Red Cross, Washington, D. C.

American Social Hygiene Association, 370 Seventh Avenue, New York
City.

American Society of the Control of Cancer, 370 Seventh Avenue,
New York City.

Association for the Prevention and Relief of Heart Diseases, 370
Seventh Avenue, New York City.

Boy Scouts of America, 200 Fifth Avenue, New York City.

Camp Fire Girls, 527 Fifth Avenue, New York City.

Child Study Association of America, Inc., 54 West 74th Street,
New York City.

Children's Bureau, United States Department of Labor, Washington,
D. C.

Commonwealth Fund, 578 Madison Avenue, New York City.

Elizabeth McCormick Memorial Fund, 848 North Dearborn Street,
Chicago, Illinois.

Joint Committee on Health Problems in Education of the National

Education Association and the American Medical Association,
Dr. Thomas D. Wood, Chairman. National Education Association,
1201 Sixteenth Street, Washington, D. C.

Life Extension Institute, 25 West 45th Street, New York City.

Metropolitan Life Insurance Company, 1 Madison Avenue, New York
City.

National Board Y. W. C. A. 600 Lexington Avenue, New York City.

National Child Welfare Association, 70 Fifth Avenue, New York
City.

National Committee for Mental Hygiene, 370 Seventh Avenue, New
York City.

National Conference Social Work, 25 East 9th Street, Cincinnati,
Ohio.

National Congress of Parents and Teachers, 1201 Sixteenth Street,
Washington, D. C.

National Health Council, 370 Seventh Avenue, New York City.

National Organization for Public Health Nursing, 370 Seventh
Avenue, New York City.

National Research Council, 370 Seventh Avenue, New York City.

National Safety Council, 168 North Michigan Avenue, Chicago,
Illinois.

National Society for the Prevention of Blindness, 370 Seventh
Avenue, New York City.

National Tuberculosis Association, 370 Seventh Avenue, New York
City.

National Women's Christian Temperance Union, Evanston, Illinois.

National History Museum. Exhibits and slides. New York City.

Playground and Recreation Association of America, 315 Fourth
Avenue, New York City.

The Rockefeller Foundation, 61 Broadway, New York City.

The Russell Sage Foundation, 130 East 2nd Street, New York City.

Scientific Temperance Federation, 400 Boylston Street, Boston,
Massachusetts.

State Boards of Health.

State Tuberculosis Associations.

Superintendent of Documents, Washington, D. C. Price list of
government publications on health.

United States Department of Agriculture, Washington, D. C.

United States Office of Education, Department of the Interior,
Washington, D. C.

United States Public Health Service, Washington, D. C.

Women's Foundation for Health, 370 Seventh Avenue, New York City.

Women's Press, 300 Lexington Avenue, New York City.

1. Commercial Organizations Which Furnish Material

American Institute of Baking, 1135 Fullerton Avenue, Chicago,
Illinois.

Armour and Company, Union Stock Yards, Chicago, Illinois.

Beechnut Packing Company, Canapoharie, New York.

Borden Company, Borden Building, New York City.

California Fruit Growers Exchange, 900 North Franklin Street,
Chicago, Illinois.

Cleanliness Institute, 45 East 17th Street, New York City.

Dairymen's League Cooperative Association, 11 West 42nd Street,
New York City.

General Foods Company, Education Department, 250 Park Avenue,
New York City.

Horlick's Malted Milk Company, Racine, Wisconsin.
 John Hancock Mutual Life Insurance Company, New York City.
 Johnson and Johnson, New Brunswick, New Jersey.
 Kellogg Company, Battle Creek, Michigan.
 Loose-Wiles Biscuit Company, Thompson Avenue, Long Island City,
 New York.
 Mennen Company, 345 Central Avenue, Newark, New Jersey.
 Metropolitan Life Insurance Company, New York City.
 National Biscuit Company, 910 South Michigan Avenue, Chicago,
 Illinois.
 National Dairy Council, 910 South Michigan Avenue, Chicago,
 Illinois.
 Postum Cereal Company, Battle Creek, Michigan.
 Quaker Oats Company, 80 Jackson Street, Chicago, Illinois.
 W. R. Squibb and Sons, 80 Beekman Street, New York City.
 Shredded Wheat Company, Niagara Falls, New York.

F. Film and Slide Sources

American Social Hygiene Association, 370 Seventh Avenue, New York
 City.
 Bray Productions, Inc., Rochester, New York.
 Eastman Teaching Films, Inc., Educational Department, 729 Seventh
 Avenue, New York City. 35 and 16mm.
 Ford Motion Picture Laboratories, Detroit, Michigan. 16 and 35mm.
 Ideal Picture Corporation, 28 East 8th Street, Chicago, Illinois.
 Indiana University Extension Division, Bureau of Visual Instruction,
 Bloomington, Indiana.
 International Dental Health Foundation for Children, Inc., 130

- East End Avenue, New York City. 16 and 35mm.
- Iowa State College, Visual Instruction Service, Ames, Iowa. 35mm.
A few 16mm.
- Metropolitan Life Insurance Company, 1 Madison Avenue, New York
City. 16 and 35mm.
- National Dairy Council, 221 North LaSalle Street, Chicago, Illinois.
16 and 35mm.
- National Motion Pictures Company, Holliday Building, Indianapolis,
Indiana. 35mm.
- National Safety Council, 20 North Wacker Drive, Chicago, Illinois.
16 and 35mm.
- National Tuberculosis Association, 370 Seventh Avenue, New York
City. 16 and 35mm.
- Pathe Exchange, Inc., 35 West 45th Street, New York City. 16 and
35mm.
- Society for Visual Education, Inc., 327 LaSalle Street, Chicago,
Illinois. 16 and 35mm.
- Underwriters' Laboratories, 207 East Ohio Street, Chicago, Illinois.
- United States Bureau of Mines, Experiment Station, Pittsburgh,
Pennsylvania. 35mm. mostly.
- United States Department of Agriculture, Washington, D. C. 35mm.
A few 16 mm.
- United States Department of Labor, Children's Bureau, Washington,
D. C.
- United States Corporation, Bureau of Safety, Sanitation and Welfare,
71 Broadway, New York City.
- Wholesome Films Service, Inc., 48 Melrose Street, Boston, Massachusett
- Y. M. C. A., National Council of Motion Picture Bureau, 120 West

41st Street, New York City--300 West Adams Building, Chicago, Illinois, 16 and 35mm.

E. BIBLIOGRAPHY

1. Courses of Study

Course of Study, Healthful Living, Senior High School, Los Angeles City Schools, School Publication No. 222, 1931.

Health for Grades VII, VIII, and IX, Curriculum Bulletin No. 15, City of St Louis, 1926.

Health Education, A Program For Girls in Secondary Schools,

Detroit Public Schools, Board of Education, Detroit, 1929.

State Syllabus, Health and Physical Education, Senior High Schools,

State Department of Public Instruction, Vol. III, No. 4,

Tallahassee, Florida, 1926.

Tentative Course of Study in Health and Physical Education Grades

VII to XII, Bulletin No. 100F4, Department of Public

Instruction, Indianapolis, 1931.

Tentative Course of Study For Health Instruction in Secondary

Schools, Department of Public Instruction, Harrisburg,

Pennsylvania, 1930.

Health and Physical Education Series of the State of Ohio,

Department of Education, Vol. III, Columbus, Ohio: State

Department of Public Instruction, 1932.

2. Books, Bulletins, and Monographs

Andress, J. M., Teaching of Hygiene in the Grades, New York:

Houghton Mifflin Company, 1918, Pp. 176.

Averill, L. A., Educational Hygiene, New York: Houghton Mifflin

- Company, 1926, Pp. 546.
- Bagley, W. C. and Hyde, G. C., The California Curriculum Study, Chapter XIII, Berkley, California: University of California, 1926.
- Bilhuber, G. and Post, I., Outlines in Health Education for Women, New York: A. S. Barnes and Company, 1927, Pp. 192.
- Bobbitt, Franklin, How to Make a Curriculum, New York: Houghton Mifflin Company, 1924.
- Brock, G. D., Health Through Projects, New York: A. S. Barnes and Company, 1931, Pp. 268.
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- Gates, A. I. and Strang, Ruth, Gates-Strang Health Knowledge Test, New York: Bureau of Publications, Teacher College, Columbia University, 1925.
- Harmon, M. H. and Clark, T., A Study of Courses in Health Education, United States Public Service Bulletin #152, Washington: Government Printing Office, 1925.
- Heagen, Rena, "Principles Underlying the School Health Program," Journal of Health and Physical Education, February, 1932, Vol. III, No. 2.

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- Health Education Tests, New York: American Child Health Association, 1931, Pp. 70.
- Health Trends in Secondary Education, New York: American Child Health Association, 1927, Pp. 161.
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Record, Vol. 27, #3, Pp. 224-47, November, 1925.

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