

**THE EFFECTS OF SECONDARY SCHOOL HEALTH
INSTRUCTION ON HEALTH KNOWLEDGE**

BY

DONALD BARRY CLARDY

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THE EFFECTS OF SECONDARY SCHOOL HEALTH INSTRUCTION
ON HEALTH KNOWLEDGE

A Research Paper

Presented to
the Graduate Council of
Austin Peay State University

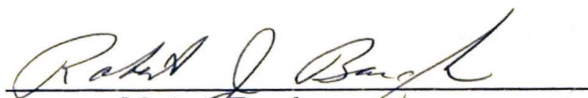
In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in Education

by
Donald Barry Clardy

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To the Graduate Council:

I am submitting herewith a Research Paper written by Donald Barry Clardy entitled "The Effects of Secondary School Health Instruction on Health Knowledge." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts in Education, with a major in Health and Physical Education.


Major Professor

Accepted for the Council:

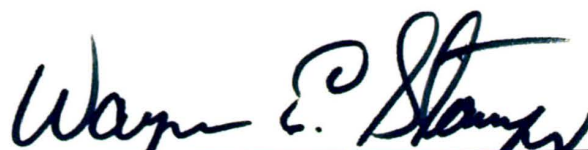

Dean of the Graduate School

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CHAPTER I

INTRODUCTION

At the turn of the eighteenth century, education in the United States was not far removed from that illustrated in Colonial America. Although the movement for common education was underway, many states were slow to follow the tradition of Massachusetts and other New England states. Because education was believed to be a function of each state, conditions differed widely in the institutions of learning.

The nature, popularity, and increase of public education in the United States, despite its diversity and many problems, did facilitate the emergence of state enterprise and individual action. The influence of European leaders was beginning to be felt; and their philosophies, as portrayed through their essays and books on education, were becoming increasingly more accessible to those in this country.

New ideas in education were expressed in an ever broadening curriculum, augmenting the stereotyped forms of classical learning. Although widespread health education was yet some years off, there were rumblings to suggest the need for attention to school health problems.

From Germany, one of the leading countries in the field of education around the turn of the nineteenth century, came what at least one authority described as the beginning of formal health education. James Frederick Rogers, one of the first students of the evolution of school health education, made the following statement in regard to this development:

It was from a small province of Germany that we derived our beginnings in formal health instruction, and the first course of study to be used by teachers and pupils, issued in 1792, was received with enthusiasm, not only in Germany but elsewhere. Within ten years 150,000 copies had been sold and it was promptly translated into English, Swedish, Bohemian, Slavonic, Italian, Icelandic, Polish, French, and Lettish. It was reprinted in New York in 1798 and was still alive as late as 1882. (13:30)

The influx of health books, written principally by physicians for general public consumption, continued to flow slowly into the United States from Europe.

The middle of the nineteenth century was a significant period in that there were several extremely important events from which the progress of health education in the school greatly prospered. Although not primarily directed to the question of health in the school, these developments had a profound influence upon the field. (13:42)

The first event occurred in the field of education and grew out of the Massachusetts State Legislature which made school attendance compulsory. A short time later, tax-supported education became

common practice. Extensive development in the school health program would have been quite improbable under the earlier system of church dominated education. With these changes came numerous problems relating to the health and safety of school children. (13:43)

Another event, this time in the field of public health, took place in 1850. This milestone came with the publication of the Report of the Sanitary Commission of Massachusetts. (19) The author was Lemuel Shattuck from the state of Massachusetts. Although the contributions of Shattuck were many, it was this report for which he is best remembered.

The cause of school health instruction was largely promoted by the efforts of the Women's Christian Temperance Union, an organization which was founded in 1874 to "combat the evils of intemperance." Soon after its conception, the W.C.T.U. initiated a well-organized campaign to secure state legislation requiring temperance instruction in schools. During the period from 1881 to 1900, almost every state in the union passed laws stating that special instruction should be given concerning the dangerous effects of alcohol and narcotics. Near the turn of the century, following severe epidemics of smallpox and diphtheria, the subject of communicable disease was added to the content of school health instruction. The control and prevention of communicable disease was taught in the school room with the hope

of reducing the losses from scarlet fever, whooping cough, diphtheria, and small pox epidemics. Health instruction, throughout its initial period, from approximately 1900-1918, remained focused on these three areas exclusively and the teaching techniques and presentations were extremely formal and technical with the emphasis on factual knowledge. (25:403)

The greatest advancement in school health occurred after World War I, and was brought about by two important factors: (1) The results of the physical examinations for military service indicated the poor physical condition of young men between the ages of eighteen and thirty and enhanced the status of health education in the schools; (2) The second major factor was the selection of health as the first of the seven cardinal principles as set forth by the National Education Association in 1918. (4:17)

The post-war boom in health education brought with it sweeping changes in course content and procedures. The emphasis shifted from the memorizing of factual knowledge, to motivating students to take an interest in the principles of hygiene and to practice good health habits. Many voluntary health agencies such as the "National Tuberculosis Association" and the "Child Health Organization" contributed effective promotional work. Attractive charts, posters, dramatizations, and stories were used for more effective teaching.

Two new media, radio and motion pictures, were called upon to serve the cause of health education. Course content was broadened to include the topics of cleanliness, exercise, fresh air, brushing the teeth, food and nutrition, regular elimination, normal growth and development, and in the early 1920's, the area of safety education was added to the school curriculum.

Health education progressed rapidly during the 1920's and the growing interest in the health and well-being of the children of the United States was climaxed by the famous White House Conference on Child Health and Protection, called by President Hoover in 1930. The largest group of child health experts ever assembled up to that time came together to "report what is being done; to recommend what ought to be done, and how to do it." (25:492) The White House Conference provided health educators with new information and inspiration and the health movement continued to grow in momentum during the period preceding the Second World War. During World War II the importance of all phases of health education was underscored by the distribution of 16,000 copies of a booklet entitled, Physical Fitness Through Health Education for the Victory Corps. This pamphlet was prepared by the United States Office of Education, and urged administrators to understand a six-point program: (1) Fix responsibility for school health in one co-ordinator; (2) Provide the time and

opportunity for health education; (3) Provide medical examinations and their follow-up; (4) Create a healthful environment; (5) Train personnel concerned with health; and (6) Promote community relations. These points served as a guide for developing an effective program in many schools (13:295)

By 1946 only two states lacked school health legislation of some type. However, this legislation did not always specify a course in health education, but more often provided for immunization, dental care, medical treatment and screening procedures for vision, hearing, and other defects.

In spite of the growth and progress in health education, one high school student out of three in 1948-1949, still received no regular health instruction, according to a national survey by the National Education Association. (13:348) Most existing health courses met only one hour a week, and were often taught by disinterested and unqualified personnel. To improve the situation efforts were made to integrate health education with other subjects in the curriculum and to improve the training of teachers.

We have come a long way from the 1881 health education course of "Alcohol, Narcotics, and Communicable Disease;" a more typical program today might include instruction in the following areas:

1. The Meaning of Health
2. What You Inherit
3. How Your Body Functions
4. Control of Communicable Diseases
5. Emotional Health
6. Understanding Stimulants and Depressants
7. Nutrition and Diet
8. Selecting Health Products and Services
9. Exercise, Fatigue, and Rest
10. Safety Education and First Aid
11. Choosing A Life Partner
12. Planning for Marriage
13. Family Living

While giant strides forward have been made in the field of health education, a number of problems have remained unsolved and have limited the effectiveness of the profession. A "Health Education Planning Conference" held in 1959 identified the following major problems:

1. Lack of Common Basic Philosophy
2. Inadequacies in Health Education Curriculums
 - a. Curriculum Organization
 - b. Appropriate Patterns

- c. Scheduling
 - d. Time Allotment
 - e. Articulation
 - f. Progression
3. The Need for Greater Understanding and Intelligent Use of Motivation.
 4. The Need for More Extensive and Intensive Research Studies
 5. The Need for Better Coordination and Improved Inter-relationships
 6. The Need for Improved Teacher Education in Health Education (9:87)

Throughout the century of development of health education, a large number of concerned individuals, voluntary and professional organizations, educators, and statesmen have endeavored to make health instruction a vital and effective contribution to the total education of American youth. Educators have held varying opinions, however, as to how effective these efforts have been. Have existing health education courses made a significant contribution to health knowledge and improvements, or, have remaining problems minimized the values of health instruction? What have been the effects of secondary school health education?

CHAPTER II

STATEMENT OF THE PROBLEM

The primary purpose of this study was to measure the health knowledge of college students in order to discover if there was a significant difference in overall health knowledge of:

1. College students taking their first college health course having received no health instruction in secondary school, and
2. College students taking their first college health course having received health instruction in secondary school.

A sub-problem necessary for the completion of the study was the selection of a device suitable for measuring the health knowledge possessed by the subjects.

Terminology

The following terms have been defined as they were used in this study.

Health Education: The process of acquiring knowledges, attitudes, and practices which contribute to the physical, emotional, and social well-being of the individual.

Secondary Level: The ninth, tenth, eleventh, and twelfth grades.

Analogy: Partial agreement or resemblance between things somewhat different.

Basic Assumptions

This study was based on the following assumptions:

1. That health knowledge can be adequately measured.
2. That the device selected would demonstrate significant validity.
3. That the selected subjects were representative of the two groups.

Limitations

The basic limitations in the evaluation of health knowledge were brought about by the lack of uniformity in course content, progression, and grade level at which secondary school health instruction was offered.

No specific course outline was followed by health instructors and the grade levels at which the health education course was taught ranged from grades nine to twelve.

Consequently, the health inventory selected was utilized in an attempt to adequately sample the health knowledge of college students.

Hypothesis

The hypothesis selected was that there is no significant difference between college students who have had health instruction in secondary school and college students who have not had health instruction in secondary school.

CHAPTER III

REVIEW OF LITERATURE

A variety of factors have influenced the effectiveness of secondary school health instruction; among those of major importance have been:

- I. The status of health education
- II. The health interests and needs of secondary school youth
- III. The course content
- IV. Methods and procedures in health education

The Status of Health Education

The evolvement of health instruction as an integral part of the school curriculum has been a long and complex process, dating from the early 1800's to the present time. Varying views have been expressed by educators regarding the effects and present status of health education. Grout has stated: "In one form or another, health education extends from the start of life throughout the span of existence, in the home, at school, and in the community." (7:1)

Bucher has expressed a growing awareness of the value of health education in the school program.

In recent years educational thinking has been more and more cognizant of the place of health and physical education in the school program. Each is closely related to the other, but at the same time each is distinct. Each area has its own specialized subject-matter content, its specialists, and media through which it is striving to better the living standards of human beings. (3:105)

In June 1960 the House of Delegates of the American Medical Association adopted a resolution supporting school and college health instruction as follows:

Resolved, that the American Medical Association reaffirm its long standing and fundamental belief that health education should be an integral and basic part of school and college curriculums and that state and local medical societies be encouraged to work with the appropriate health and education officials and agencies in their communities to achieve this end. (11:23)

Voltmer and Esslinger, however, stated that, "health instruction deserves much more consideration in high schools and colleges than it is being given today." (27:152)

Kilander has carried on continuous research in the field of health education and in a recent article summarized his findings and conclusions regarding the status of health education.

- (1) There has been a slight but steady improvement in the level of information held by students and adults over the years covered by this study.
- (2) Few individuals are found to be adequately informed in all of the various areas of health knowledge to be able

to act wisely for their own personal needs.

- (3) College students are better informed than their former school classmates who did not go to college.
- (4) The relationship between health information and health practices is, in general, positive.
- (5) Teachers tend not to be adequately informed about health, considering their need for greater knowledge because of their position. (10:28)

The Health Interests and Needs of Secondary School Youth

Leading health educators have long recommended that teachers of health education explore student interests and needs as a partial basis for curriculum construction.

Health specialists have developed a number of studies, inventories, and check lists to find the areas of greatest interest to students. One of the first and best known was Oberteuffer's (15) study in 1930. In 1941 and 1942 a committee (22:118) studied the interests of Massachusetts' high school students.

Grout (7:27) in Health Teaching in Schools, recommends that pupils be allowed to help the teachers and administrators in the planning of the health education program as this would steer the course toward the problems of most interest to the students.

An extensive study of health interests of secondary students was made in 1949 by Latagne. (12:34) He recommended that curriculum directors and teachers of health discover pupil health interests as a basis for partial determination of curriculum content.

Student interests and needs are not always synonymous, but often correlate to a surprising extent. Instructors must exercise due caution to consider both interests and needs of students while constructing curricula and altering health courses. (12:34)

In 1960 Scholler (18:512) prepared an inventory to determine the health needs and interests of secondary school students. The test consisted of ten health areas with 207 health concept statements. On the basis of the inventory findings, he concluded that the areas of most interest and importance to high school students were (1) understanding mental health and mental illness, (2) personal care of the body, (3) understanding habit-forming substances, and (4) importance of activity and rest.

He also found that the areas of least interest to secondary students were (1) structure and function of the human body, (2) community health services, and (3) official and voluntary health programs.

Health Education Course Content

Brown has recommended certain areas which should be included in secondary school health education courses. He has grouped these into two categories:

- a. Produce and promote health--such as heredity, nutrition, excretion, exercise, rest, recreation, and adjustments to self and group.
- b. Protect and maintain health--such as control of communicable diseases including accidents, evaluation of health information and health advisors, protection of the special senses, and community health services. (2:36)

One of the most complete studies in regard to course content in health education was conducted by Byrd (6:3) and published in 1950. He surveyed the subject matter contained in over 10,000 scientific, public health, and medical journals, and compiled a list of twenty-one major areas of problems concerning health.

The twenty-one major areas were as follows:

1. Health as a social accomplishment.
2. Health as a social problem.
3. Nutrition and health.
4. Excretion and health.
5. Exercise and body mechanics.
6. Fatigue and rest.
7. Mental health and disease.
8. Heredity and eugenics.
9. Infection and immunity.

10. Chronic and degenerative disorders.
11. Habit-forming substances.
12. The care of special organs.
13. Safety.
14. Health and physical environment.
15. Scientific health services and facilities.
16. Family health.
17. School health.
18. Occupational health.
19. Community health services.
20. International health.
21. Trends and possibilities. (6:3)

Turner (23:94) in 1947, prepared a course of study in health for junior and senior high schools, and also specified a group of allied curricular subjects wherein health education could be integrated. He included the areas of general science, social science, English, foreign languages, mathematics, and manual arts.

Byrd (6:3) suggested in his study that the course content not be built completely upon the needs and interests of the students. He feels that students are often unaware of future and even current health needs, and that their interests, therefore, are largely undeveloped.

Methods and Procedures of Health Instruction

Probably no other course in the public school curriculum has been taught by a greater variety of personnel, offered under a greater variety of time allotments, presented by a greater variety of methods, or covered as wide a variety of content as the area of health instruction.

Personnel from several academic areas have been called upon to teach health education classes; but in a large percentage of public schools, the physical educator has been responsible for the health instruction. Sliepcevich stated, "It is unfortunate, but too often justifiable, that the poor quality of much of the health teaching on the secondary level is often attributed to the physical education teacher. (20:32) Her article summarized an evaluation of the required health education course at Ohio State University by 700 students.

In a study made by Harnett (8:152) the weaknesses of health instruction listed by the students were disinterest on the part of the teachers, a rainy day program, large classes, poor equipment, out-dated textbooks, uninteresting methods, and little opportunity for student initiative and participation.

Many educators have advocated the teaching of health education by integrating it with other courses in the curriculum; and with this philosophy in mind, Meier studied the opportunities in general science for health instruction. He stated;

In order to reach some areas in the teaching of health, topics can be taught for health within the prescribed hours of general science. For example, in a required general science course of three or four class hours per week, one hour might be devoted to the teaching of the concepts under topics that are rich in health material. (14:434)

Patterson and Roberts, in their discussions of health education in action, recommended the following procedures for classroom teaching.

1. Problem-solving.
2. Questions and answers.
3. Lecture method.
4. Demonstrations.
5. Dramatizations.
6. Pupil-reporting.
7. Class discussions. (16:24)

Veenker and Ismail (26:129) in 1962, conducted a study to determine the effectiveness of three different approaches to health instruction: problem solving, lecture, or discussion. Analysis of initial and final measurements of health knowledge, interests, and attitudes indicated that all three approaches were equally effective in the achievement of instructional outcomes. As a result of their study, the authors recommended that the selection of an instructional approach should be made on the basis of criteria such as the ability of instructors to implement specific approaches and the availability of time, materials, personnel, and facilities.

CHAPTER IV

PROCEDURES

Selection of Subjects

Students enrolled in the required health education course during the winter quarter of 1970 participated in this study.

A personal information questionnaire attached to the answer sheet allowed the author to divide the students into two groups.

Group one consisted of 122 students who had taken a formal health course in secondary school. Some students had previously taken college health courses while others were repeating the required health course. Scores from these subjects have not been included in the study.

Group two was made up of forty-seven students who indicated they had received no formal health instruction in secondary school. Again, those students having taken another college health course or those repeating the required course were excluded from the study.

Test Selection

Recognizing the need for a general health knowledge test, the investigator solicited the help of the faculty members responsible for instruction of the required health course. With their assistance

several tests were reviewed and the "Health Analogies Pretest for a Basic College Health Course" by Herman Spencer Bush was selected. This pretest was chosen for the following reasons.

1. It includes areas similar to those contained in the basic health course at Austin Peay State University.
2. It introduces the analogy question to students who may be exposed to analogy type tests later in life.
3. It could be obtained at a reasonable cost.
4. It was standardized throughout Kentucky and therefore would closely identify with Tennessee.
5. It had been published less than one year at the time of this study and was considered recent and up-to-date.
6. It could be administered in one fifty minute class period.

Test Administration

Written test directions were read from the test to each group of students by the investigator. Students were asked to answer every question during the fifty minute time allotment.

The test was administered during the first class meeting before any reading assignments were made or instruction given.

The test consisted of one hundred multiple choice analogy items. It did prove to be practical for administration in a fifty minute period. The scoring of all tests was done by the investigator.

Distribution of Content

The test content was divided into seven general areas. The distribution of items according to content are given in Table I.

TABLE I

Distribution of Questions According to Content

Areas	Number of Questions	Percentage
I. Diseases	20	20
II. Family Living	17	17
III. Personal Hygiene	15	15
IV. Community Health	14	14
V. Mental Health	13	13
VI. Tobacco and Drugs	11	11
VII. Nutrition	<u>10</u>	<u>10</u>
Total	100	100

CHAPTER V

ANALYSIS OF THE DATA

Results of Health Analogies Inventory

The "Health Analogies Test" was administered to students enrolled in the required health education course at Austin Peay State University. The subjects' scores were then grouped as to those who had received health instruction at the secondary school level (hereafter referred to as Group I), of which there were 122. The subjects with no previous health instruction at the secondary school level (hereafter referred to as Group II) numbered forty-seven.

The ranges, means, and standard deviations obtained for both groups have been included in Table II.

TABLE II

Ranges, Means, and Standard Deviations of
Two Groups on a Health Analogies Test

Participants	Number	Range	Mean	Standard Deviation
Group I	122	21-94	64.96	5.93
Group II	47	40-91	65.30	4.57

As Table II indicates, Group I is considerably larger than Group II. This may be partially attributed to the Tennessee State Board of Education requirement for each student to receive one semester of health instruction at the secondary level prior to graduation. This requirement may also be met by experiencing one full school year in an integrated program of health instruction.

The second method of fulfilling the requirement may help explain the similarity of scores between the two groups as demonstrated by the mean scores. Although all the subjects did not attend high school in Tennessee, the possibility exists that some in Group II may have received health instruction in an integrated program.

The similarity of health knowledge between the two groups, as indicated by the means, may be due to the inadequacy of a formal health course or to the true value of an integrated program.

Based on personal correspondence with Dr. Bush, author of the test, the means in the present study were lower than those obtained in the standardization process. This might indicate the present similarity is due more to inadequacy of a formal health course.

Table III indicates that the three areas of the test in which both groups scored highest were:

- (1) Nutrition
- (2) Mental Health
- (3) Family Living

The area of the test in which Group I scored lowest was "Personal Hygiene." Group II scored lowest in the area of "Diseases." Overall a rank order correlation of .89 was obtained between the two groups.

TABLE III

Health Analogies Test:
Percentage of Correct Responses As To Area

Area	Group I		Group II	
	Percentage	Rank	Percentage	Rank
I. Nutrition	74.43	1	75.73	1
II. Mental Health	71.88	2	68.75	2
III. Family Living	70.88	3	67.86	3
IV. Community Health	64.41	4	62.50	4
V. Diseases	62.13	5	57.30	7
VI. Tobacco and Drugs	61.55	6	61.71	5
VII. Personal Hygiene	59.84	7	59.15	6

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to measure the health knowledge of Austin Peay State University students in order to discover the difference in two groups. One group was composed of those students taking their first college health course, having had no previous formal health instruction. The other group consisted of students taking their first college health course, having had formal health instruction in the secondary school.

Those college students with formal health instruction at the secondary school level scored slightly lower than the group of students with no previous formal health instruction. This variation was insignificant with a mean difference of .34.

The investigator found that both groups scored highest in the areas of "Nutrition" and "Mental Health." The group with previous high school health instruction scored lowest in the area of "Personal Hygiene." The group of students with no previous health instruction had the largest number of misconceptions in the area of "Diseases."

Conclusions

The following conclusions are based on the findings from this study of the health knowledge of Austin Peay State University students enrolled in their first college health course:

- (1) Improved health instruction needs to be given at the secondary level.
- (2) The analogies test seemed to be a new experience for most students.
- (3) The completion of a high school health course does not guarantee increased health knowledge.

Recommendations

On the basis of the findings and conclusions derived from this study of the health knowledge of Austin Peay State University students enrolled in their first college health course it is recommended that:

- (1) Improved health instruction be given at the secondary level.
- (2) A study be conducted to determine those content areas in health education which are most commonly taught at the secondary level. The present study demonstrates that students score higher in some areas than others. This may well be due to the various schools emphasising different content areas.
- (3) A study be conducted to determine the quality of the health education programs in the secondary schools of Kentucky and

Tennessee. The majority of students attended high school in these two states.

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