• Commonwealth of Kentucky •

EDUCATIONAL BULLETIN

PLANNING THE SCHOOL HEALTH PROGRAM IN THE SECONDARY SCHOOLS OF KENTUCKY

Published by
DEPARTMENT OF EDUCATION
BOSWELL B. HODGKIN
Superintendent of Public Instruction

ISSUED MONTHLY
Entered as second-class matter March 21, 1933, at the post office at Frankfort, Kentucky, under the Act of August 24, 1912.

Vol. XVI APRIL, 1948 No. 2

FOREWORD

Health education and healthful living should receive primary consideration in the school program of this state. The teaching of health and the development of good health habits should be the objective of every teacher.

A course in basic health on the secondary level is a requirement for the coming school year. The importance of this course in each high school should not be overlooked.

The material in this bulletin has been prepared under the direction of C. W. Hackensmith of the University of Kentucky, for the purpose of giving assistance toward the planning of an effective health course in Kentucky high schools.

BOSWELL B. HODGKIN
Superintendent of Public Instruction

PREFACE

The organization of the school health education program in Kentucky has been a slow but steady and certain process. The material contained in this bulletin is a phase of this process.

The parts dealing with school health policies and health guidance have been designed to assist the administrator in the organization of the school health education program. The part presenting suggested methods of correlation of health instruction with related areas has been organized to assist teachers who have been and who will be assigned this responsibility in the school health program.

The materials employed in this bulletin are based on a study of present health education practice in Kentucky schools, and the practical application, in so far as possible, of the best thought and practices secured from authoritative sources on health as they relate to the school.

The author wishes to acknowledge the interest and assistance of Dr. L. E. Smith, Executive Secretary of the Kentucky Tuberculosis Association, and Mr. Hambleton Tapp, former Director of the Division of Health and Physical Education, Kentucky State Department of Education. The author wishes also to express his appreciation to the hundreds of Kentucky school administrators and teachers who furnished much valuable information on present school practices in health through interviews and questionnaires, and, especially, to those teachers who took of their time to write expositions on their methods of correlating health instruction with their teaching subjects.

C. W. HACKENSMITH
Associate Professor of
Physical Education
University of Kentucky

TABLE OF CONTENTS

SUGGESTED SCHOOL HEALTH POLICIES FOR KENTUCKY

Introduction. A review of the early history and development of health education[1] in Kentucky indicates that its progress has been a slow and gradual affair. During and since the recent war, there has been a definite movement toward the establishment of school and public health education[2] on a more permanent and functional basis than ever before in the history of the state.

Some of the factors that have contributed to this renewed interest in school and public health education include:

1. The emphasis on public health education by local, state, and national health agencies, official and non-official, during and after the recent war.

2. The discouraging results of the medical examinations of men and women for service in the armed forces under the Selective Service and Training Act, 1940.

3. The grant of money the W. K. Kellogg Foundation of Battle Creek, Michigan, allotted to the Kentucky State Department of Education for a one-year experiment in health education, June, 1944-45. The experiment involved 13 counties and extended through 1945-46.

4. The especial interest and the extension of services for school and public health education, since the war, by the Kentucky State Department of Health and the Kentucky Tuberculosis Association.

5. The interest of local and state civic organizations in school and public health education which has been manifested in gifts of equipment for the school health examination, mobile units for the detection of tuberculosis and cancer and the discovery and correction of dental defects, purchase of glasses and other health needs, purchase and provision of play areas for school children, care of physically handicapped children, and many other services.

6. The establishment of the school lunch program in 1946 (National School Lunch Act, Public Law 396) under the supervision of the Kentucky State Department of Education, Division of Vocational Education. The provision of school lunches stimulated interest in the nutritional health of children and related areas.

---

[1] Health education is the sum of all experiences which favorably influence habits, attitudes, and knowledge relating to indivdual, community, and racial health.—*Journal of Health and Physical Education*, Vol. 5, No. 10 (December, 1934), p. 16, "Definition of Terms in Health Education," Committee on Terminology.

[2] School health education is that part of health education that takes place in the school or through efforts organized and conducted by school personnel.—*Ibid.*, p 16; Public health education is that part of health education that takes place in home and community.—*Ibid.*, p. 16.

7. The establishment of a Division of Health and Physical Education, Kentucky State Department of Education, to implement the experimental study financed by W. K. Kellogg Foundation, 1944. This division, under the direction of Hambleton Tapp, has assumed the leadership in most of the school health education movements in the state since its inception.

8. The establishment of a Division of Recreation, Kentucky State Department of Conservation, 1946, to promote the interest in recreation in schools and assist in community recreational planning.

The interest in school and public health education finally culminated in definite action to improve the school health situation in Kentucky. The *Code for Health and Physical Education* (SBE 53-2), drafted December 20, 1946, and revised March 21, 1947 and December 12, 1947, was enacted by the State Board of Education. The code requires that local boards of education set up the machinery for health examination[3] of school children and teachers, the use of cumulative health records, and the provision of health instruction[4] and physical education[5] in the elementary and secondary schools and becomes effective the opening of school 1948-49.

In order to implement the code, the Division of Health and Physical Education assumed the responsibility of interpreting the regulations of the State Board of Health to the public through the newspapers of the state, district meetings in each of the Congressional Districts to which, during the spring of 1947, were invited school administrators, teachers, and health workers, and courses of study in health and physical education.[6]

Evidence has been presented that indicates a definite trend in school health education in Kentucky has been established, and in order that the schools of the state might make the greatest possible contributions to the health and welfare of its children, school health policies should be formulated based on the best thought and practice in the field of school health education. It is, therefore, the purpose of this chapter to suggest health policies for Kentucky schools based on the

[3] Health examination is that phase of health service which seeks through an examination by physician, dentist, and other qualified specialists to determine the physical, mental, and emotional health of an individual.—*Ibid.*, p. 17.

[4] Health instruction is that organization of learning experiences directed toward the development of favorable health knowledge, attitudes, and practices. —*Ibid.*, p. 17.

[5] Physical education is that phase of the school program which is concerned with the physical, social, mental and emotional development of children through the medium of total body activities.

[6] Kentucky State Department of Education. *Questions and Answers Concerning the Code.* Frankfort, Kentucky: Division of Health and Physical Education, 1947; Kentucky State Department of Education. *Kentucky State Board of Education Adopts Code for Health and Physical Education.* News Release, December 1946; Kentucky State Department of Education. "Getting the Health and Physical Education Program Under Way in the Elementary School," *Educational Bulletin,* Vol. 15, No. 3 (May, 1947). (Joint Committee, Morehead State Teachers College, Morehead, Kentucky.)

results of a study by the author of health education practices in Kentucky schools through visitation and questionnaires during 1947 and a practical application, in as far as possible, of the best thought and practice secured from authoritative sources on health as they relate to the school health program.

The Need for School Health Policies. Every school has a unique position in the promotion of health education for its pupils and its community. The school has the child under its supervision from early childhood to early adulthood for approximately half the days of the year. As stated in *Suggested School Health Policies*,

> . . . . The conditions under which they live in the school, the help which they are given in solving their health problems, the ideals of individual and community health which they are taught to envisage and the information and understanding that they acquire themselves as living organisms are factors which operate to develop attitudes and behavior conducive to healthy and successful living. In all of its efforts the school must consider the total personality of each student and mutual interdependence of physical, mental, and emotional health.[7]

If the school is to contribute to the health and welfare of its pupils and encourage "attitudes and behavior conducive to healthful and successful living" throughout their lifetime, then it should formulate and apply health policies in the conduct of the school health program. These policies should recognize that the total health of the child is the paramount objective of the school health program. These policies should also evolve from an increasing knowledge and understanding of the needs of the children, be free from fad and prejudice, grow out of successful experience and expert guidance, and conform and help give direction to the policies of the community which the school has been established to serve.

The Coordination of School and Community Health Activities. The school, however, can not alone attain all the desirable objectives of individual and community health. In the light of the magnitude and multitude of the variety and continuing efforts required to satisfactorily provide for the health needs of children, it is fortunate that there are many people and groups also interested in the promotion of health. In the first place, it is recognized that parents are primarily responsible for the health of their children. In addition to the parent, children have the services and attention of county, family or private physicians, dentists, nurses (school or visiting), social and welfare workers, medical, dental, nursing, and teacher specialist organizations,

---

[7] Health Education Council. *Suggested School Health Policies.* New York, New York: 10 Downing Street, 1945, p. 7.

state and local personnel of health departments, voluntary health organizations, and state and local civic organizations.

The coordination of all these health efforts in behalf of the child is essential if school and community are to develop an integrated program of health education and care. In the formulation of the school health program, therefore, consideration should be given to the cooperation of all health activities within the school proper, schools within a school system, and the school in relation to the community.

The organization of a school health council or committee within the school proper has been found an excellent method to coordinate health efforts in the school. This body should be organized on democratic principles under the authority of the school administrator and should be as comprehensive and representative of the school personnel as possible. In regard to the school health council or committee, *Suggested School Health Policies* states,

> . . . . The School Health Council provides a simple, orderly, and convenient administrative mechanism for determining and implementing wise school health policies in the light of local and immediate needs. Experience in many schools where such councils are now quietly and successfully functioning has already demonstrated their usefulness to the school administrator as well as their value to the children and the community. In the School Health Council should be vested the responsibility for planning the total health program of the school. Cooperation is its keynate too.[8]

In the one-room rural schools of Kentucky the health council or committee might consist of the teacher, one or two interested parents, and a representative of the county health department such as the county health doctor or the visiting nurse. In Kentucky high schools the membership of the health council might include the principal, physician, nurse, dentist, health counselor, athletic coach, health, physical education, home economics, and science teacher, the janitor, and pupil Parent-Teacher Association, official and voluntary health organization representatives.

In larger populated areas in Kentucky where several schools operate in town or city, a central health council or committee should be organized with equal and appropriate representation from these schools and from the various groups interested in school health. *Suggested School Health Policies* advises that the centrally organized health council should guide and give leadership, but, at the same time, permit the individual school health organizations considerable autonomy. The city or county superintendent of schools and the city or county health officer can best work out cooperative relationships between the school systems and the health department under this plan.

[8] *Ibid.*, p. 8.

The schools should work with the community health councils or committees and, if necessary, initiate their organization and direction. Through the cooperative efforts of the many local official and non-official health agencies, ways and means can be found to provide for the specific health needs of children.[9]

The Objectives of a Complete Health Program. In a survey of health practices in the secondary schools of Kentucky in the spring of 1947, there were many indications that the school health program was organized without too much planning or understanding of the objectives of a complete health program. For an example, the school lunchroom was frequently conducted without regard to its value as a means of teaching health attitudes and behavior. Many schools did not have a sufficiently large enough play area, or the gymnasium facilities were used only for interscholastic basketball practice and contests. When asked, in a questionnaire, what procedure the school followed in emergencies, several schools responded that they never had an emergency, or had never given the matter thought. In many schools, health instruction was considered a concern of the elementary school with little provision for this type of instruction in the high school, except that which might be derived through correlation with related areas, or subjects. These examples of the lack of understanding in the school health program and what home, school, and community should do for the child could be multiplied many fold. There is an evident need for a clear-cut statement of the objectives of a complete health program for the school.

The objectives of the school health program as outlined by the Advisory Committee on Health Education and organized under the leadership of the Ohio Public Health Association have application for Kentucky schools and are worthy of consideration. The objectives of the school health program are listed as follows:

1. To prepare the child for and help him to understand the significance of such experiences as the physical examination.
2. To establish routines concerning exclusion from school or admission following absences.
3. To encourage the relationship between the school services and the community agencies.
4. To formulate a planned program for the care of accidents and sudden sickness occurring in school.
5. To provide opportunities for healthful living while in school, such as adequate time and facilities for cleanliness, lunch, play, rest; and to obtain the cooperation of teachers and other school personnel in maintaining satisfactory personal health.
6. To develop a graduate program of health instruction giving opportunities for experience through which pupils will develop

[9] de S. Bruner, Edmund. *Community Organization and Adult Education, A Five-Year Experiment.* Chapel Hill, North Carolina: The University of North Carolina Press, 1942. Pp. 80–84.

skill in healthful living; and to provide for pupil contact with scientific sources of information regarding major health problems of personal, community, and racial health. These experiences should help the pupil understand the reasons for good health practices.

7. To work out special education programs for handicapped pupils by adapting the program of the **regular** class to individual pupil needs, if it is physically possible for the pupil to attend.

8. To prepare teachers in the colleges and universities for adequate instructional and service contributions to the health of the school child.

9. To discover the health needs (physical, mental, emotional) and interests of each pupil of the community. This can be done in various ways—by talking with pupils informallly, using a simple questionnaire, making surveys, studying medical and dental examination records.

10. To enlist the assistance of the community by including agency and parent representation in the planning and establishing of policy regarding health service.

To summarize, not only must the physical health of the pupil be considered but the mental, social, and emotional aspects as well. All the above health education activities should furnish desirable educational experience for the child and be treated as a living experience in the school, home, and community.[10]

The Scope of the School Health Program. The school health program consists of many activities that are done for, by, and with the child to assist in the development of a healthful, happy, and successful person. These activities serve as a workable basis for the consideration of Kentucky school health policies and may be classified for this purpose as follows:

1. Healthful school living.[11]
2. Health instruction.
3. Safety instruction.
4. Services for health protection and guidance.
5. Physical education.
6. Recreation.
7. Education and care of the handicapped.
8. Qualifications of teachers and specialized teachers in health.

Healthful School Living

The authority which requires parents or guardians to send children to school implies the responsibility of the school to provide a healthful and safe environment. The power to establish rules and regulations in Kentucky pertaining to healthful school living is delegated to the Superintendent of Public Instruction (KRS 156.160) and

[10] Ohio Public Health Association, Advisory Committee on Health Educuation. *A School Health Policy for Ohio.* Columbus, Ohio: 1575 Neil Avenue, 1941. Pp. 5-6.

[11] Healthful school living is a term that designates the provision of a wholesome environment, the organization of a healthful school day, and the establishment of such teacher-pupil relationships that give a safe and sanitary school favorable to the best development and living of pupils and teachers.—*Journal of Health and Physical Education, op. cit.,* p. 17.

supervisory power is granted state and local health departments (KRS 211.100). The health,[12] efficiency, and morale of pupils and school personnel are often jeopardized by unsightly, unsanitary, and poorly maintained school buildings. Consolidation of schools, an alert teaching profession, enforcement of the State Board of Education regulations, and an intense community pride should do much to alleviate some of the more undesirable health situations in Kentucky schools.

A. The Requirements for Sites and School Buildings.[13]

1. The selection and purchase of building sites should be approved by the State Superintendent of Public Instruction.
2. The site should be readily accessible from the main highways, approach roads wide and usable throughout the year, and should not be widely traveled or subject to dangerous traffic.
3. The site should be of adequate size to permit ample playground facilities; one-teacher elementary school, 1–2 acres; elementary, 3 acres or more; and twelve-grade schools and high schools, 10 acres.
4. The site should be located so as to be free of disturbing noises, distractions, and hazards.
5. All new buildings, additions, or major repairs should meet the standards recommended by the American Institute of Architects.
6. Structural design should include the live load for each part of the building, size of classrooms and special rooms, corridors, entrances and exits, and stairways.
7. Electrical installation should meet the regulations of the Board of Fire Underwriters and gongs and siren horns should be provided in every school building of two or more rooms as a fire alarm.

B. Sanitation of the School Building.[14]

1. A safe and sufficient water supply, satisfactory disposal of sewage, and cleanliness of the school environment are the joint responsibility of the local school board of education and the local health department.[15]

---

[12] Health in the human organism is that condition that permits optimal functioning of the individual enabling him to live most and serve best in personal and social relationships.—*Ibid.*, p. 17.

[13] Kentucky State Department of Education. *Regulations Concerning School Grounds and Schoolhouse Construction.* Frankfort, Kentucky: Division of School Buildings and Grounds, 1946. Pp. 1–10.

[14] *Regulations Concerning School Grounds and Schoolhouse Construction, op. cit.*, pp. 4, 8–10.

[15] Kentucky Revised Statutes, 1946. Sections 156.160 and 212.210.

2. The school should check regularly on heating, lighting, ventilation facilities, seating arrangement and adequacy of fire protection.
3. Specifications, as outlined by the American Standard Association,[16] should be followed with respect to glass area ratio to floor area, lighting intensities, and ratio of wattage to floor area.
4. The specifiations, as outlined in the state plumbing code,[17] should be observed in the installation of toilets, lavatories, and shower and locker rooms.
5. The type and color of window shades should be chosen and operated to permit uniformity of illumination throughout the room.
6. Walls and ceilings should be painted with regard to reflection factor of color.
7. The heating system should be ample to maintain a temperature of 70 degrees in all rooms with an outside temperature of zero.
8. The ventilating system should introduce fresh air through a raised window over a deflector and the warmed air exhausted via door grills, corridors, and roof ventilators.
9. The school administrator should conduct an annual inspection of the school plant once a year and recommend through a written report to the board of education, changes for the improvement of the school environment.

C. Arrangement of School Facilities.

1. Gymnasiums with necessary dressing, locker, and shower rooms should be so located in relation to the school building and grounds that they will be of use to the entire school program.
2. Play areas should have suitable surfaces to avoid injury and be so located as to be of practical use to the entire school program.
3. Gymnasiums and outdoor play areas should be available and accessible for community recreational use and arranged so that they may be used separately from the rest of the school.
4. There should be a planned and equipped room for health services and emergencies and separate rest rooms for pupils and teachers.

---

[16] "Proposed Lighting Standards," *Nation's Schools*, Vol. 21, No. 2 (February, 1938). P. 66. (Mimeographed copies available from Division of School Buildings and Grounds, State Department of Education, Frankfort, Kentucky.)

[17] Kentucky State Department of Health, Bureau of Sanitary Engineering, Sixth and Main Street, Louisville, Kentucky.

5. The facilities of the lunchroom or cafeteria should be located on the ground floor and available not only for school use but also for community use in as far as this does not interfere with the school program.
6. Assemblies, libraries, projection, and other special activity rooms should be located on the ground floor.

D. Housekeeping Procedures.[18]

1. Floors of all rooms in the school should be of such construction as to be easily cleaned.
2. Doors and windows should be effectively screened when flies are prevalent and doors self-closing.
3. Toilet rooms should be kept in clean condition, in good repair, well-lighted and ventilated.
4. Adequate hand-washing facilities should be provided, including hot and cold running water, soap, and approved sanitary towels.
5. Blackboards, erasers, crayon trays and furniture should be kept clean.
6. All wastes should be properly disposed of and all garbage and trash should be kept in suitable receptacles.
7. The school bus should be clean, properly ventilated, and kept in good repair.
8. All schools should have an annual or semi-annual schedule for a thorough housecleaning.
9. Regular daily schedules for the janitor should be arranged in providing for immediate housekeeping procedures such as cleaning drinking fountains, blackboards, floors and furniture; washing and disinfecting toilet, shower, and locker rooms; repair of furniture and equipment; and replenishing of supplies such as soap, toilet paper, dead light bulbs, and others.
10. Each teacher should assume the responsibility of keeping the classroom an orderly and pleasant environment for the pupils.
11. The school grounds should be kept clean and attractive in appearance.

E. Provision for Mental and Emotional Health.

1. One of the most important health factors in the school environment in the promotion of mental and emotional health is the teacher's personality.

---

[18] Kentucky State Department of Education, *Code for School Sanitation Survey.* (Prepared by the State Departments of Education and Health.) Frankfort, Kentucky: February 18, 1946. Pp. 1–10.

2. The school program should be arranged to prevent undue pupil fatigue, and there should be a balance between work and play.
3. Subjects that require considerable mental work should be alternated with those that require motor activity.
4. A minimum of home assignments should be practiced in secondary school and no homework should be assigned for pupils of the elementary grades.
5. Pupils should be given ample opportunity for experiencing success. Examinations and methods of promotion should stimulate a pupil to do his best rather than discourage him.
6. If a system of awards is used, it should emphasize group cooperation rather than individual competition.

F. The Health of School Personnel.

1. All school employees should be required to have a health examination previous to employment and every year thereafter (SBE 53-2).
2. The examination should include a Wasserman blood test for syphilis and a chest X-ray, at least every 3 years. School personnel should be immunized against smallpox, diphtheria, and typhoid fever.
3. Boards of education should protect the health of school employees by providing a teaching and working environment that is safe and sanitary. Sick leave, reasonable work or teaching load, feeling of security in tenure, a satisfactory retirement plan, and compensation worthy of the training, experience, and ability of the employee should be recognized by the board of education as the school employees' Bill of Rights.
4. The school administrator should have the right and the support of the board of education in releasing a teacher or other employee who jeopardizes the health of the children.

G. The School Lunch Program.

1. The school lunch program should utilize all educational opportunities to develop good eating habits and for improving the appreciation of the normal social ceremony.
2. The school lunchroom or cafeteria should be conducted for the benefit and service of school children who can and who can not pay for service rendered and not as a business venture for profit without regard to its role in the school health program.
3. The equipment for the preparation and service of food should

be such that clean and wholesome food may be furnished to the patrons at all times.

4. Each school that conducts a lunch program should have at least the following essentials: a good refrigerator, dishes, utensils, and trays which are non-porus and not cracked, chipped, or tarnished; service counters, cook's table, and dining tables with surfaces covered with plastic, fiber board, metal, or such material that will assure no cracks in the surface; hot and cold running water; a three-way compartment sink or sterilizer for cleaning of utensils and dishes; and a few labor-saving devices such as a mix-master and potato peeler.
5. The lunchroom or cafeteria should have a cheerful, home-like atmosphere and satisfy the standards required of food handling establishments in the state.[19]
6. The plate lunch should be the most efficient method of service; the best method to assure a balanced diet; and the most economical in terms of cost.
7. The elementary school teacher should not be the only source through which the child learns of nutrition and habits of cleanlines but some guidance should also be furnished in this respect in the secondary school.
8. Employees of the school lunchroom or cafeteria should have a regular health examination[20] not only because of the contact of employees with food and pupils, but also because a survey has shown that employees of the lunchroom or cafeteria use the regular toilet facilities of the school.
9. Volunteer pupils as well as regular employees who assist in the school lunchroom should also have a clean bill of health.
10. In as far as possible, the school lunch program should be under the management of a home economics teacher, or a qualified nutritionist, and this management should receive full administrative support.
11. Children who arise early to catch the school bus and as a consequence miss their breakfast, and those who live in homes where diets are inadequate, present definite nutritional problems that should be solved by the school.

H. The School Safety Program.

1. Organizing the safety program.

[19] Kentucky State Department of Health. *Instructions for the Grading of Food Handling Establishments and Hotels.* Louisville, Kentucky: Division of Foods, Drugs, and Hotels, 620 South Third Street, 1946.
[20] *Ibid.*, pp. 24-25.

a. Regardless of the size of the school, some plan of safety organization should be organized. A safety council or committee should be appointed with representation from the school and community.
b. The next step should be to determine where, when, how, and to whom the accidents are occurring. This procedure requires a thorough and efficient reporting and recording system.
c. The safety council or committee should draw up a definite safety program in accordance with the accident record, and the opinions of the council or committee members.
d. The establishment of a definite system of caring for the injured in accordance with school policy such as:
   (1) Who shall render first aid.
   (2) Who shall notify the parents.
   (3) How should the injured be transported.
e. The provision of instruction in safety education as a separate course in the school curriculum or through correlation with related areas.
f. The provision of appropriate safety education materials such as safety pamphlets, posters, charts, and motion pictures to teachers and encourage their use.
g. Cooperation with the Parent-Teacher Association and other civic agencies and groups in the elimination of hazards to children on their way to and from school.

2. Safe conduct of the vocational shops and laboratories.
   a. Pupils who work in the shop or laboratory should be physically fit and provided with proper equipment, tools, and safety devices.
   b. Pupils should be required to report all unguarded, unsanitary, and otherwise unsafe conditions to the instructor.
   c. The shops or laboratories should not be used as passageways to and from classes.
   d. Conversations with pupils operating machines, edged or pointed tools, or performing other exacting operations should be prohibited.
   e. Machinery should be stopped while listening to instruction.
   f. Minor cuts, scratches, or burns should receive immediate first aid treatment.
   g. Laboratory experiments should be done and strong chemical reagents should be used only under the immediate supervision of the instructor.

3. Safe conduct of the total physical education program.[21]
   a. Only qualified personnel should be in charge of the total physical education program.
   b. Participation should be based on (1) the results of the health examination, (2) individual physical abilities, and (3) expert opinion of the coach, physical education instructor and/or school physician.
   c. An instructor or supervisor should be present at all times when pupils are participating in physical education activities.
   d. Size of physical education classes should be limited to facilities and number of instructors.
   e. Fair and equal competition should be provided in competition.
   f. Thorough warm-up periods should be allowed competitors in all phases of the physical education program.
   g. Contact sports teams should not be scrimmaged until the members are physically ready.
   h. Long scrimmage periods in football should be avoided.
   i. Skills should be taught thoroughly. The more skillful the participant the less likely is he to be injured.
   j. A physician, nurse, or someone capable in first-aid should always be present at all team practices and contests.
   k. Removal of all unnecessary hazards of facilities and equipment.
   l. Provide protective equipment and educate against those hazards that can not be removed.

4. Special safety precautions at athletic contests.[22]
   a. A physician should be present at all interscholastic contests in which there is an element of danger.
   b. Competent officials—officials in adequate number should be provided for all contests.
   c. Team members and substitutes should be warmed up before entering contest.
   d. Injured players should not be used when there is danger of aggravating the injury.
   e. Fatigued players should be removed at first sign of weakening.

---

[21] Ohio State Department of Education. *Ohio High School Standards 1946.* Health, Physical Education, Recreation and Safety. Columbus, Ohio, 1946, pp. 62-63.

[22] Ohio High School Standards, *op. cit.*, pp. 63-64.

f. Adequate safety controls should be provided for spectators.
   (1) The gymnasium should not be overcrowded but loaded to the specifications of the fire marshal.
   (2) Police, ushers, and guards should be provided.
   (3) Playing area should be fenced off from spectators.
   (4) The stability of bleachers should be checked and reinforcement provided where needed.
   (5) Dangers involved in concessions should be controlled.
   (6) Vehicular and pedestrian traffic controls should be provided.

5. Safety regulations in the operation of the school bus.[23]
   a. All vehicles approved and used for a school bus must display a red light visible at 500 feet when lighted and one red light with the word "stop" on it which when illuminated can be seen for 150 feet (KRS 189.050).
   b. No person under 18 years of age shall drive a school bus and all drivers must meet the requirements of the law and the rules and regulations of the State Board of Education (KRS 186.600).
   c. Law requires the use of safety glass (KRS 189.070).
   d. Regulations are prescribed for discharging and receiving passengers, stopping the school bus at crossings of steam and interurban railroad main tracks, and the conduct of drivers in passing the school bus (KRS 189.370 and 189.550).
   e. Boards of education are required to adopt rules and regulations that will insure the safety of children who are transported consistent with the rules and regulations of the State Board of Education[24] (KRS 158.110).
   f. Each board of education may set aside funds to provide for liability and indemnity insurance against negligence of drivers or operators of school buses owned and operated by the board[25] (KRS 160.130).

---

[23] National Commission on Safety Education. *Minimum Standards for School Buses.* Washington, D. C.: National Education Association, 1201 Sixteenth St., N. W., 1946.

[24] Kentucky State Department of Education. "Standards for School Buses, Laws and Regulations for Their Operation," *Educational Bulletin,* Vol. 15, No. 10 (December, 1946).

[25] Thacker vs. Pike County Board of Education, 301 Ky. 781. County boards of education being a public agency are immuned from liability to laborers and others in and while discharging functions of such agency for injuries sustained by negligence of its employees. (March 15, 1946.)

Kirkpatrick Adm'x. Bronaugh vs. Murray, et al., 294 Ky. 715. Members of boards of education are individually responsible if they fail to act as required by statute concerning liability insurance on school buses. (June 15, 1943.)

Health Instruction

Health instruction in the school should be related to real life situations and concerned with the improvement of human living. As stated in *Health in Schools,*

> The goal of intelligent self-direction of health behavior by every person in our society is an ideal toward which to strive. Organization of the curriculum to provide experiences and instruction for children which will help to develop acceptable health practices, scientific and wholesome attitudes, and understanding of sound health principles constitutes the desirable program of health instruction in the school.[26]

The school health instruction program should not be limited to school children only but should also consider the health interests and needs of the adult in the community.

A. Methods of health instruction.

1. Health courses should include functional materials secured through analysis, questionnaires, group conferences and personal interviews of:
   a. Curiosities, superstitions, and interests of pupils.
   b. Mortality and morbidity rates, or incidence of disease of specific age groups.
   c. Life problems of school, home, and community.
   d. Physical examination records.
   e. Parental testimony of specific health needs and interests of their children.
   f. Problems raised by radio and press.
   g. Opinions of experts on child health problems.[27]
2. In secondary schools, health instruction may also be provided through correlation with related areas.
   a. Correlation is inadequate in itself because many of the subjects providing health instruction in the school curriculum are elective.
   b. Correlations can not adequately treat all the health interests and needs of pupils.
   c. It is generally agreed that correlation should be an adjunct to the health course.
3. Health instruction in the elementary school is considered a responsibility of the teacher.
   a. Health instruction should consist mainly of helping children develop attitudes and habits of healthful living and relate them to life experiences such as handwashing, weigh-

[26] *Health in Schools, op. cit.,* p. 59.
[27] *A School Health Policy for Ohio, op. cit.,* p. 20.

ing and measuring, medical and dental examination, and others.

b. The elementary school teacher should have no specific time allotment for health instruction. She should feel free to use whatever time is necessary for furthering the health of the children.

B. Health Instruction in the School Curriculum.

1. *Suggested School Health Policies* recommends a special health course in secondary school with a minimum time allotment of a daily period for at least one semester in either the ninth or tenth grade and a similar amount of time in the eleventh or twelfth grade.[28]
2. Possibilities for health instruction in the school curriculum include the following:
   a. Five periods a week for one semester (18 weeks) with ½ unit credit.
   b. Five periods a week for one full year (36 weeks) with 1 unit credit.
   c. Three periods a week for one full year (36 weeks) with ½ unit credit.
   d. In combination with physical education for one full year (36 weeks), alternating 2 periods of physical education and 3 periods of health instruction per week with ¼ unit of credit for physical education, and ½ unit credit for health education.
   e. Health instruction may be substituted for the required physical education during the semester or year that it is offered, with credit granted on the same basis as indicated above.[29]
3. Health courses should be placed on a par with other subjects in the curriculum with respect to size of class, provision of classroom and teaching materials, grading, and credit.
4. Health instruction should utilize the resources of community health agencies as learning experiences.
5. Health should be taught in a wholesome school environment, otherwise instruction loses its significance.

Safety Instruction[30]

Although safety instruction has been accepted by educators as a proper part of the school curriculum, the use of the school as a

[28] *Suggested School Health Policies, op. cit.*, p. 17.
[29] *Ohio High School Standards, op. cit.*, p. 44.
[30] Safety instruction is that organization of learning experiences directed toward the development of safety knowledge, attitudes, habits, and skills.

means of education in this particular field has been of comparatively recent origin. The yearly increase of fatalities and injuries from accidents in the home, school, and industry and on the farm and highway has resulted in the school's acceptance of the responsibility, in part, for the education of future citizens in safety knowledge, attitudes, habits, and skills. That the school has been moderately successful in this endeavor is indicated in the following statement from *Health Education,*

> . . . . The progress already made and the results secured, both in the number of lives saved and the development of good attitudes of mind, all indicate not merely development along lines of immediate self-interests on the part of the student but development as an essential and important part of the groundwork of successful living in the modern world.[31]

A. Methods of Safety Instruction.

1. Safety courses should provide functional and meaningful materials obtained through the analysis of:
   a. Accident reports from local, state, and national sources.
   b. Safety problems of home (urban and rural), school, and community.
   c. Safety problems associated with recreational activities.
   d. Safety problems raised by radio and press.
   e. Opinions of experts on safety problems.

2. In addition to an organized course in safety education, high schools correlate safety instruction with such subjects as health education, social studies, general science, science, home economics, and physical education.
   a. The scope of safety education has increased to such an extent that correlation in related areas can not adequately satisfy the need for comprehensive instruction.
      (1) Certain aspects of safety education such as personal safety problems, first-aid, and certain community safety problems are logically taught in conjunction with health education.
      (2) Industrial safety, fire prevention, flood control, and certain aspects of traffic education can best be taught in conjunction with other subjects.
      (3) Driver education which should provide practice in driving skills as well as traffic safety education does not lend itself too well to correlation.

[31] *Health Education, op. cit.,* p. 92.

b. In an already crowded school curriculum, it may be best to correlate safety instruction with related areas, especially health education, and provide special instruction in driver education.

Health Protection and Guidance[32]

The purpose of health protection and guidance is to bring the home, school, and community into closer and better cooperation for the extension and improvement of the health of each child. Activities properly under health protection and guidance include the health examination and its related phases, prevention and control of communicable disease, and emergency procedures. Health protection and guidance have no meaning to the pupil unless the services involved become a part of his learning experiences. The success of the school's health services is measured by its direct contribution to the pupil's health education as well as its immediate value to the health protection and guidance of the pupil.

A. Health Examination.
   1. Under the regulations of the *Code for Health and Physical Education* (SBE 53-2), every child is required to have an examination on entrance to school and every four years thereafter.
   2. As determined from a survey made of Kentucky secondary schools, 1947, the following methods of health examinations have been in operation.
      a. The Summer Round-Up sponsored by the Parent-Teacher Association.
      b. Health examinations by family or private physicians.
      c. Health examinations by the personnel of the county, or city health department.
      d. Examinations by the school physician and nurse or local part-time school nurse or visiting nurse.
      e. The seasonal examinations of athletes.
      f. Supplementary or additional examinations which are distinguished from the regular health examination in that they involve more intensive clinical procedures.
   3. The regulations of the State Board of Education (SBE 53-2) require the use of a cumulative health record (Form H-4, Kentucky State Department of Education) in all the methods of examinations listed above.

---

[32] Health guidance is the discovery of health needs of the child through the cooperative activity of the family, teacher and nurse, and special examinations and the provision of ways to meet them through the organization of the home,

4. Additional forms of examinations recognized in the school health program for health protection and guidance include:
   a. The daily observation by teachers to detect evidence of illness. This type of examination is an effective means of preventing and reducing epidemics in the school.
   b. The observation of health through the cooperation of the teacher and nurse, or teacher with referral to physician when deviations from the normal are observed.
   c. The precursory examination of school children by the school nurse, or visiting nurse with immunization and referral to physician of deviates.
   d. Examinations by teachers of a continuing type involving items that do not require medical training such as vision, hearing, weight and height, and posture.
   e. Mobile units, under the supervision of the Kentucky State Department of Health, for the detection of tuberculosis, dental defects and corrections, and cancer; local dental clinics, with correction on detection of defects.
   f. Mental tests by school personnel qualified to give them, or by an experienced psychologist.
5. The purposes of the examinations, which should be recognized by the physician as well as the school personnel, are as follows:
   a. To make available data on the health status of school children which (when necessary) should lead to a modification of their school study program.
   b. To detect defects and handicaps or diseases which are remediable and which should receive the attention of the family, private, or school physician.
   c. To provide a basis of classification in a modern program of physical education.
   d. To serve as educational experiences themselves in bringing pupils to a clearer understanding of competent professional health service.
   e. To provide a basis for a program for handicapped pupils with irremediable handicaps to the end that they may develop compensation for their handicaps.[33]
6. If the program of examination is to be an educative experience, the following factors should be considered:
   a. The parent, especially in the elementary grades, should

---

school, and community into closer and better relationships for the extension and improvement of the health of each child.

[33] Adopted from *A School Health Policy for Ohio, op. cit.*, pp. 10-11.

be invited to the examination in order that the physician may explain his findings. Studies[34] have shown that correction of defects is better assured with the parent present at the examination.

b. The examination should not be hurried and mechanical. It is better to examine fewer pupils leisurely than to run through, impersonally, a large number of pupils in chain-fashion.

c. The elementary and secondary teacher should acquaint the pupil with the purpose and the scope of the examination preliminary to the actual examination.

7. The folow-up program is a cooperative enterprise in which the school personnel, physicians, dentists, nurses, parents, local and state health agencies and local civic groups should share.

a. The parent should be responsible for the provision of adequate medical care and the school should not select but advise the parent to consult with physician or dentist.

b. When the parent is unable to pay for the correction of defects, the resources of the community should be carefully studied to discover a procedure.

c. A sound health education program teaches the pupil, or parent, where and how to secure treatment and how health needs may best be met.

8. The use of the examination records.

a. The teacher should have access to the examination records in order to modify the school program to suit the limitations of the pupil. The teacher, however, should treat confidentially all information secured from the health record and mental tests.

b. Assignment to the physical education program should be based on the results of the examination. A definite policy should be established, however, with respect to physician's request for modification of the pupil's physical education program.[35]

---

[34] Nyswander, Dorothy B. *Solving School Health Problems.* The Astoria Demonstration Study, Fourth Edition. New York, New York: The Commonwealth Fund, 41 East 57th Street, 1942. Pp. 50–52.

Walker, W. F. and Randolph, Carolina R. *School Health Services.* A Study of the Programs Developed by the Health Department in Six Tennessee Counties. New York, New York: The Commonwealth Fund, 41 East 57th Street, 1941. P. 148.

[35] *A School Policy for Ohio, op. cit.,* p. 11. As a matter of good administrative policy in all instances where a school physician is employed and charged with the responsibility of supervising the health of the school children, the final decision on matters of school program modification shall be his. In instances of disagreement between the school and family physician an agreement should be attempted, but where such an agreement fails, the recommendation of the school physician should prevail.

B. The Prevention and Control of Communicable Disease.[36]

1. The principal, teacher or any person in charge of any public, private or parochial school should report immediately any disease to the local city or county health officer (C.D.,Rule 3).
2. The state or local health authorities have a right to enter and inspect any occupant in any room, house, or building (C.D., Rule 6).
3. Any person suffering from or who has been exposed to a carrier of communicable disease in which isolation and quarantine is required shall be released by the city or county health officer (C.D., Rule 13).
4. When a school teacher or pupil has suffered from a communicable disease and on account of such disease has been excluded from school, he shall be permitted to return only on certificate from the health officer or his authoritative representative (C.D., Rule 14).
5. Only in the event of great emergency, and then only with the advice and approval of the State Board of Health, shall a school be closed during an epidemic (C.D., Rule 15).
6. Vaccination for smallpox as a requirement before entrance to school, or during attendance of school, is dependent upon reasonable assurance that an epidemic threatens or does exist.[37]
7. No person suffering from a communicable disease shall serve or handle in any manner any milk, milk products, or food intended for sale (C.D., Rule 19).
8. A program of immunization for the school child.
   a. The immunization program should start with the preschool child. Diphtheria immunization should be given before one year of age and evidence of immunity (Shick Test) checked before entrance to school. Vaccination for smallpox should be made during the first year of life and revaccination at 6 and 12 years.
   b. Typhoid fever immunization should be completed before entrance to school or during elementary school.
   c. Tuberculosis is the most important communicable disease in the secondary school level (age groups 15–25). The school health education program should provide pupils

[36] Kentucky State Department of Health. *Communicable Disease Manual.* Louisville, Kentucky: Division of Communicable Disease, 620 South Third Street, 1947.

[37] Board of Trustees of the Highland Park Graded Common School District, No. 46 vs. McMurtry, 184 S. W. 390, 169 Ky. 457, 1916; Hill vs. Beckers, 188 S. W. 766, 171 Ky. 703, 1916.

and adults with information on the cause and prevention of tuberculosis and a knowledge of state and community activities directed toward its control.

d. The cooperation of parents is necessary if a program for the prevention and control of communicable disease is to be successful.

C. Emergency Procedures.

1. Every school should have a written plan of procedure, familiar to all school personnel, for the care of children in emergencies.
2. All schools should be conscious of hazards about the school and to and from the school, and care should be taken to see that they are eliminated.
3. There are no legal provisions which treat the responsibility of the school in case of accidents and, for this reason, the following procedures are recommended:
   a. Since it is not possible that a physician or nurse can always be present when an accident occurs, a teacher well trained in first aid should always be present in the school.
   b. In case of serious accident, a physician should be summoned immediately and his service limited to immediate emergency care.
   c. Parents should be immediately notified and, if possible, summoned by phone.
   d. If the emergency is grave (skull fracture or appendicitis) there should be no delay in securing medical attention. If possible, the parent should be asked hospital preference in serious emergencies and always in less serious emergencies.
   e. In no case should the child be sent home without being accompanied by a school representative, or responsible adult.
   f. The school personnel should guide parents who are unable to pay for medical aid to community agencies that care for the indigent.
   g. Every school should prepare a written report of the accident including the name of the pupil, time of the accident, manner in which it occurred, who gave immediate first aid, physician attending the case, and the name and address of witnesses and a signed statement by them as to what they actually observed.
4. Pupils with severe abdominal pains and nausea should be

suspected of appendicitis. They should be sent home under the care of the parent with a warning:

a. Not to give the child food or drink.
b. Not to give medicine, particularly a laxative.
c. To call a physician if the pains and nausea persist.

5. Each school should make available an emergency room provided with a cot, blankets, and a first-aid kit.[38]

Physical Education

Physical education is a phase of education which contributes to the total learning experience of the pupil through the medium of physical activities. In the school, a well-rounded program of physical education should include:

1. The service or required program which includes instruction in physical activities through the 12 grades under the direction of a certificated teacher in physical education.

2. The adapted or modified program of physical education which cares for those pupils in the 12 grades who have remediable defects and who can not successfully participate in the service or required program.

3. The intramural program for boys and girls. These physical activities are carried on outside of the required physical education program. It is considered the laboratory of the required program and offers a wide selection of activities for pupil choice limited only by the facilities and equipment available. This part of the program should be under the supervision of a certificated teacher in physical education.

4. The interscholastic athletic program provides opportunities for the more highly skilled pupils to participate in the competitive sports program of the school. This program is under the supervision of an athletic coach who is also considered a teacher of physical education and should have a major or minor in this field.

The following factors should be considered in the conduct of the physical education program in the schools:

A. Criteria for the Selection of Activities.

1. The activities should contribute to the development of:
   a. Organic power and physical growth.
   b. Leisure time recreative skills.
   c. Desirable patterns of social behavior.
   d. Safety abilities.
   e. Proper attitudes, ideals, and appreciations regarding physical activities.

[38] See *Code for School Sanitation Survey, op. cit.*, p. 9, for the recommended contents of a first-aid kit.

2. Assignment to the physical education program should be based on the entrance or subsequent health or physical examination and no activity should be prescribed or elected except as the physical status warrants. (See suggested form on the following page for assignment to physical education.)
3. Pupils who, because of illness or disability, are unable to participate in the regular program should be assigned to special classes for modified activity, corrective physical education or rest. This assignment should be based on the physician's recommendation.
4. The activities of the physical education program should be varied and adapted to the needs, interests, and physical capacity of the pupils.
5. Pupils should be classified and grouped acording to their abilities and health status.
6. A separate program should be organized for boys and girls over 10 years of age, and there should be opportunities for

Assignment to Physical Education on the Basis of the Health Examination*

Name ..... Address .....

School ..... Grade..... Age..... Sex.....

Physician's Diagnosis:

Please check (√) the following types of physical education which you recommend for this pupil.

1. **Regular Physical Education**—includes such activities as:

BOYS		GIRLS	
.....Badminton	.....Speedball	.....Archery	.....Soft Ball
.....Basketball	.....Tennis	.....Badminton	.....Swimming
.....Boxing	.....Touch Football	.....Basketball	.....Tennis
.....Golf	.....Track and Field	.....Field Hockey	.....Tumbling
.....Soccer	.....Tumbling	.....Golf	.....Rhythmics
.....Soft Ball	.....Volleyball	.....Soccer	.....Volleyball
.....Swimming	.....Wrestling		

2. **Restricted Physical Education**—includes activities so modified as to be within pupil limitations but bearing no direct relation to the correction of physical defects.

.....Aerial Darts	.....Clock Golf	.....Horseshoes	.....Table Tennis
.....Archery	.....Dart Ball	.....Quoits	.....Volleyball
.....Bowling	.....Deck Tennis	.....Shuffleboard	
.....Box Hockey	.....Golf Putting	.....Social Dance	

3. **Corrective Physical Education**—includes those activities aimed at the correction of existing physical defects. (Special exercises will not be given unless recommended by a physician. Structural deformities that belong in the field of orthopedics will not be treated without specific instructions from the physician in charge.)

* Adopted without change from Illinois State Department of Education. *Health and Physical Education Syllabus.* Circular No. 301. Centennial Building, Springfield, Illinois, 1939, p. 53.

a. Postural Defects—including scoliosis, pronation of feet, etc.
b. Development of certain muscle groups—abdominal, shoulder girdle, etc.

4. **Rest Physical Education**—Complete rest

Remarks:

1. Is this individual under your constant supervision?.....
2. Do you wish to see that this child returns to you?.....
3. If so, when? .....

Recommendations:

1. For how long does a special arrangement need to be made?.....
2. General types of activities to be avoided—running, jumping, stretching, pulling, etc. (Circle which.)
3. Other recommendations .....

.....

.....

Examiner ..... M. D.

Address .....

Date .....

coeducational and co-recreational activities adjusted according to physical limitations and variations in interest.

7. Schools that lack adequate equipment and facilities should make adjustments in the program to meet existing local situations. Maximum use and adaptation should be made of hallways, corridors, classrooms, auditoriums, stages in the auditorium, natural facilities about the school (forests, mountains, streams, trails, and historical sites), and other available indoor and outdoor facilities about the school and in the community.
8. Activities should be planned on a daily, seasonal, and yearly basis.[39]

B. Suggested Program, Time Allotment, Credit, and Grading.

1. A suggested program of physical education adapted to facilities and equipment of the average Kentucky school has been prepared.[40]

---

[39] *Ohio High School Standards, op. cit.*, pp. 47-48.

[40] Rankin, Rome. *A Survey of Physical Education for Secondary Schools in Kentucky with a Suggested Program.* Lexington, Kentucky: University of Kentucky, Doctor's Dissertation, 1947.

2. Classes in physical education should meet a minimum of 2 periods a week for *organized* instruction.
3. A minimum of one unit should be required for graduation from an accredited high school. A high school should allow one-fourth unit a semester, permitting a pupil to earn a maximum of 2 units, 1 of which should count within or in addition to the 16 credits required for graduation.
4. All pupils in elementary and secondary schools should be enrolled in physical education and participate in *directed* activities.
5. Participation in the band, intramural program, and other extracurricular activities should not be substituted for required physical education.
6. Members of the interscholastic teams should be used as leaders in the development of the intramural program and squad leaders in the organized physical education class.
7. Grading in physical education should maintain the same standards as other subjects in the school curriculum relative to attendance, absences, excuses, and grading.

C. Basic Principles and Criteria of the Intramural Program.

1. The basic principles and criteria for selecting activities of the entire physical education program are applicable to the intramural program.
2. All pupils in the secondary schools should have the opportunity to participate in an extensive program of intramural sports.
3. Emphasis in the intramural program should be on the recreational aspects of activities.
4. A preliminary training period should be provided for the more strenuous activities such as basketball, track events, wrestling, and swimming.
5. Boxing should be taught in the organized physical education program under strict supervision but never encouraged as an intramural sport.
6. A minimum physical examination should be required for intramural participants in the more strenuous activities including the heart, lungs, urine and skin (recent operation scars, hernia, and skin conditions).
7. The intramural program should be under the supervision of a certificated teacher in physical education.
8. Health, safety, and protective measures should be provided intramural participants with regard to protective equipment,

size and condition of playing areas, playing time and modification of rules, adequate and trained officials, and the same privileges of shower, soap, and towel service granted varsity athletes.

9. The organization and administration of the intramural program for Kentucky high schools has already been considered.[41]

D. The Interscholastic Athletic Program.

1. The interscholastic program should be governed by certain basic principles.
   a. Interscholastic athletics is a part of the comprehensive health and physical education program and, therefore, has the same educational objectives.
   b. As a part of the physical education program, interscholastic athletics should be considered an integral phase of the educational program of the school and, as such, should be a part of the curriculum under the supervision and administration of the educational authorities.
2. The athletic coach is a physical educator and, as such, should have a major or minor in the field.
3. An adequate health examination should be required of all athletes at the beginning and during the season as needed. Examinations should be recorded on the cumulative School Health Record sheet (Form H-4) as required by the *Code for Health and Physical Education* (SBE 53-2).
4. Resumption of participation in athletics, after an illness, should be permitted only on the physician's recommendation and continued under his supervision.
5. Pupils participating in interscholastic athletics should enroll in the required physical education program and should be utilized as squad leaders, assistants in the organization of physical education activities and intramural sports.
6. There is no experimental evidence as to its harmful effects, but on the basis of authoritative analysis, interscholastic competition in the junior high school is *not* recommended. Pupils below the tenth grade level are in the process of rapid growth with consequent maladjustments in relation to physiological adjustments and mental and emotional stresses.
7. Boxing should not be a part of the interscholastic program because of its highly competitive nature and potential danger to the physical welfare of the participant.

[41] Rankin, Rome. *Op. cit.*

8. Schedules, playing seasons of reasonable duration, and opening and closing dates should be prescribed and approved by the Kentucky High School Athletic Association.
9. Every participant in the interscholastic program should have the best obtainable protective equipment and all schools should take reasonable precautions to prevent accidents.

Recreation[42]

The provision of a recreation program is a responsibility of both the school and community and should be solved jointly. In most communities the school is the logical agency to assume the leadership in the establishment of a recreation program. In others, the school may cooperate with civic agencies and participate in the organization and administration of a recreation program. As stated in *Ohio High School Standards,*

> The schools' assumption of responsibility for community leisure time program has paralleled a growing realization of community service as a function of education. Given adequate financial support, the schools could assume their responsibility and open their plants and facilities, make available aggressive leadership and professionally prepared staff to meet community needs.
>
> The organization and expansion of extended school services will better enable the schools to assume their responsibilities for children and youth in their out-of-school hours.[43]

A. Basic Principles of the School Program of Recreation.

1. Recreation should be recognized as a part of the comprehensive program of health and physical education and should be correlated with the physical education, intramural and interscholastic athletic programs.
2. Activities selected for the recreation program should have have carry-over value for adult life as well as immediate use.
   a. A sport program, while recreational, is only one phase of a total recreation program. It is highly desirable that pupils exercise a wide choice in the selection of recreational interests and experiences.
   b. Many activities growing out of the school program should be recognized for their recreational value. Arts and crafts, music, reading, photography, and dramatics may be the basis for adult recreation.
   c. Many out-of-door activities such as camping, hiking, hunting, fishing, gardening and work experiences may well be

[42] Recreation is any wholesome leisure-time activity performed for the pleasure derived therefrom.

[43] *Ohio High School Standards, op. cit.,* p. 57.

a part of the 4-H Club, Outing Club, and other school, church, state,[44] and civic,[45] organizations' recreation program.

The school should emphasize the use of recreational activities that can be carried on in the home, the backyard, and in the neighborhood.

B. Fundamentals in Community Recreation.[46]

1. That in nearly every community with a population of 8,000 or more there is need of a man or woman who shall give full time to thinking, planning and working for the best possible use of the leisure hours of men, women and children.
2. That community leisure time programs should continue throughout the entire 12 months of the year.
3. That it is the responsibility of the entire community to maintain recreation opportunity for all the citizens and that there ought, therefore, to be, as early as possible, support of the recreation program through public taxation under some department of the local government.
4. That there should be in every state a home rule bill which will permit the people of any city or town to make provisions under local government for the administration of their community recreation.[47]
5. That there is need in every community, even though the municipal recreation administrative body be most effective, for private organizations of citizens in their neighborhoods to make the fullest use of the facilities provided, to make sure that what is being done is meeting the deeper needs of the people of the neighborhood.
6. That the emphasis ought to be not only on maintaining certain activities on playgrounds and in recreation centers but also and definitely on the training of the entire people in leisure time activities, so that within the home, in the church and throughout all natural, human relationships there shall be the best opportunity for wholesome good times.
7. That even though the beginning of a city or town recreation program be children's playgrounds, other features ought to be added progressively from year to year until music, dra-

[44] Owsley County High School, Booneville, Kentucky, in cooperation with the Kentucky State Game and Fish Commission is raising chicks to replenish the supply of quail in that county.

[45] Camping for underprivileged children, sponsored by civic organizations. Inexpensive camps are sponsored by the YMCA and YWCA.

[46] Adopted from the National Recreation Association, 315 Fourth Avenue, New York, New York.

[47] *Kentucky Revised Statutes*, 1946. Sections 97.010–97.020.

matic activities and discussion of public questions, training for more intellectual use of spare time, and other valuable activities have been included, so that all ages and kinds of people may find vital interest.

8. That every boy and every girl in America ought to be trained to know well a certain limited number of games for use outdoors and indoors, so that there will never be occasion for any boy or girl to say that he cannot think of anything to do.
9. That most boys and girls should be taught a few simple songs so that, if they wish, they may sing as they work or play.
10. That all employed boys and girls should have opportunity in their free hours to enjoy companionship and wholesome social life.
11. That through the community recreation program every boy and girl should come to appreciate the beautiful in life.
12. That adults, through music, drama, games, athletics, social activities, community and special day celebrations, should find in their common interests the opportunity for a common community service.
13. That every new school built ought to have a certain minimum amount of space around it provided for the play of the children.
14. That nearly every new school building ought to have an auditorium preferably on the ground floor and should be so constructed that it is suited for community uses.
15. That if a suitable meeting place for community groups is not available in the schools or elsewhere, a community building should be provided through community effort.
16. That each child under ten years of age living in a city or town should be given an opportunity to play upon a public playground without going more than one-quarter mile from home.
17. That every community should provide space in sufficient area for the boys of the community to play baseball, soft ball, and football.
18. That every community should provide opportunity for boys and girls to swim in summer, and as far as possible, to skate and coast in winter.
19. That every boy and every girl ought to have opportunity, either on his own home grounds or on land provided by the municipality, to have a small garden where he may watch

the growth of plants, springing up from seeds which he has planted.

20. That in new real estate developments, a reasonable per cent of the area should be set aside to be used for play as part of the land is used for streets.

C. The Legal Status of Recreation in Kentucky.[48]

1. The legislative body of any city or the fiscal court of any county may dedicate for use as playgrounds or recreation centers any land or buildings owned or leased by the city or county and not devoted to an inconsistent public use, and may acquire real property for such purpose by purchase, lease, condemnation or otherwise.
2. Two or more cities, or any city and county, may jointly establish, maintain, and conduct a recreation system.
3. The legislative body of any city or fiscal court of any county may establish a playground or recreation system and may vest power to provide, maintain and conduct playgrounds and recreation centers in the park board, board of education or other existing body, or in a playground and recreation board.
4. Whenever the legislative body of any city, or the fiscal court of any county establishes a supervised recreation program, the legislative body or fiscal court may appropriate money out of the general fund of the city or county for the purpose of equipping, maintaining, and operating the recreation system.

The Education and Care of Handicapped Children[49]

No school health program is complete unless provisions are made for the handicapped children and adaptations are made for their needs. There are two approaches in the provision for handicapped children in the school program which include (1) segregated special classes and (2) flexible grouping within the regular class with normal children. It is generally agreed that the segregated special classes have the following disadvantages:

1. It is difficult to obtain enough children to fill a special class of the same age and grade range.

2. Separation from competition with other children tends to retard certain aspects of the child's educational development.

---

[48] *Kentucky Revised Statutes,* 1946; Sections 97.010–97.020.

[49] Children should be considered handicapped whose physical disabilities or mental difficulties, arising from any cause, require from the school special attention beyond that given to other children. *Suggested School Health Policies, op. cit.,* p. 36.

3. It is costly and experience indicates that it is educationally and socially unsatisfactory.[50]

The Association of Childhood Education has expressed the general opinion of health authorities regarding the inclusion of handicapped children in the regular classes of the school program,

> We believe that a general school policy of flexible grouping rather than one of segregation is more conducive to making these services effective, and that complete segregation, while a convenient administrative device, does not provide the best conditions for the desirable growth and development of children.[51]

A. Identification of the Handicapped Child.
   1. The handicapped child should be carefully selected by the physician or the psychologist on the basis of their physical and mental findings.
   2. A comprehensive study should then be made to determine the cause or causes of the child's condition.
   3. Remedial measures should be undertaken with due regard to social and economic conditions in the home.
   4. The school administrator should determine after consultation with the physician or psychologist and teacher the amount and kind of special attention the child should have.

B. Special Provisions in the Regular School Program.
   1. Specially constructed chairs, desks and equipment for orthopedically handicapped children.[52]
   2. Satisfactory seating arrangement for children with visual and auditory defect.
   3. Scheduling of classes on the ground or first floor.
   4. Rest periods and cots for children with cardiac and other impairments.
   5. School attendance at such periods and duration compatible with child's condition.
   6. Modified physical education program or remedial classes.
   7. Provision for transportation to and from school.

C. Special Classes and Other Provisions.
   1. In large urban areas, there are frequently sufficient children to make up special classes for those with serious visual defects, low I.Q.'s, and other handicaps.
      a. "Sight-saving" classes will benefit children who have vision defects of 20/70 or worse.

---

[50] Kentucky Tuberculosis Association. *The Physically Below-Par Child. Changing Concepts Regarding His Care and Education.* Louisville, Kentucky: 620 South Third Street, 1940. Pp. 12–14.

[51] The Physically Below-Par Child, *Ibid.*, p. 11.

[52] Arey, Margaret S. *Improvised Equipment for the Physically Handicapped.* New York, New York: Joint Orthopedic Nursing Advisory Service of the National Organization for Public Health Nursing and the National League of Nursing Education, 1790 Broadway, 1944.

b. Special classes for children with I.Q.'s between approximately 50-70 are appropriate. Children with I.Q.'s between approximately 70-90 should be enrolled in regular classes.
c. Part-time or special classes should be provided in lip-reading and speech correction.

2. Children who are too handicapped to attend schools should be provided special teachers.
   a. The education of these children is frequently neglected.
   b. The school should be alert to its responsibility and make the education of these children an obligation.
3. Teachers of the handicapped should have a good basic preparation and experience with normal children as well as special preparation and understanding of handicapped children.

D. Special Schools and Care of the Handicapped.
1. Children who are severely crippled should not be enrolled in a special class or special school unless adaptations for their disability in the regular class are impossible.
2. Special schools and provisions are made for the handicapped through legislation and agencies.
   a. Kentucky School for the Blind (KRS 167.140).
   b. Kentucky School for the Deaf (KRS 167.080).
   c. County Children's Bureau (KRS 200.170).
   d. Department of Welfare (KRS 200.010).
   e. Kentucky Crippled Children Commission (KRS 200.270).
   f. Kentucky State Department of Education, Division of Vocational Rehabilitation (KRS 163.060).
   g. Special instruction, equipment, and books for handicapped children (KRS 159.060).
   h. Transportation of handicapped children (KRS 159.060).
   i. Kentucky Chapter of the National Foundation for Infantile Paralysis.
   j. Kentucky Tuberculosis Association.
   k. The Shriners' Hospital for Crippled Children, Lexington, Kentucky.

Qualifications of Teachers and Special Teachers of Health

Kentucky Revised Statutes, 1946, Section 156.130 requires that the State Superintendent of Public Instruction shall establish standards for the preparation of teachers, provide for inspection of institu-

tions desiring to prepare teachers, approve such institutions as maintaining satisfactory training procedures, and properly certificate the graduates of such approved courses and institutions.

The Superintendent of Public Instruction has delegated his authority to the Division of Teacher Education and Certification. The standards for teacher certification as established by this division and approved by the Council on Public Higher Education and the State Board of Education include teacher preparation in 3 areas: (1) minimum general, or core curriculum, (2) teaching fields, and (3) professional preparation in education. Aside from the areas of minimum general and professional preparation in education, there are no specifications of professional requirements in the teaching fields. The course requirements in the teaching fields are, therefore, established by the departments of the various teacher-training institutions in the state.

At a moment when Kentucky has an opportunity to move forward in health and physical education, it would seem prudent and timely for the Division of Teacher Education and Certification with an advisory committee of representatives from teacher training institutions of the State of Kentucky to stipulate professional requirements in health and physical education. School boards of education throughout the state cognizant of the educational value of a comprehensive program of health and physical education to all children should employ only those teachers certificated in health and physical education.

A. Teacher Preparation Institutions.[53]

1. Because of the importance of teachers in an effective school health program, colleges and universities need an extensive program of health education.
2. Every institution should require periodic health examinations SBE 53-2), effective health counseling, and suitable facilities and personnel for infirmary care.
3. Every institution should have a physician, nurse; one of whom should be full-time, and one or more health educators.
4. Students of these institutions should have living conditions which encourage desirable standards of living.

B. Pre-Service Preparation of Teachers.[54]

1. The properly prepared teacher should be a healthful person with up-to-date information about health and the principles of healthful living.

B.

[53] *Suggested School Health Policies, op. cit.*, p. 39.
[54] *Ibid.*, pp. 39-40.

2. Every teacher should have courses in personal and community health which should be directed toward helping the prospective teacher maintain or improve her own health and increase her knowledge and appreciation of personal and community health.
3. In order that the teacher may successfully perform her responsibilities in a modern school health program, she should have courses which will help her:
   a. To detect signs and symptoms in children that deviate beyond the normal range of physical, mental, and emotional health.
   b. To understand the growth and developmental characteristics of children at different ages.
   c. To become proficient in such procedures as weighing, measuring, and performing screening tests of vision and hearing.
   d. To become acquainted with the techniques of health counseling, including methods of working with specialized personnel and with parents.
   e. To learn how to plan and schedule health instruction for various grades.
   f. To become familiar with the multiform aspects of school health programs and the cooperation which they require from specialists and from community agencies.
4. Part of the pre-service preparation of teachers should be secured through active participation in school health activities and supervised practice teaching.

B. The Specialized Teacher of Health.
1. Teacher training institutions should prepare teachers for direct health instruction in secondary schools.
2. The need for specially prepared teachers in this area is now more generally recognized than in former years.
3. Preparation of teachers for direct health instruction should include the following suggested fields:
   a. Anatomy
   b. Physiology
   c. Bacteriology
   d. Sanitation
   e. Nutrition
   f. Personal and community health
   g. School health

h. Administration of the school health program
i. Principles and methods of health instruction

4. Health coordinators and counselors should have the same preparation as health educators[55] together with several years of experience in health education or other type of health work.

C. In-Service Education of Teachers.[56]

1. Many teachers who have not had the privilege of recent health education preparation should receive guidance through in-service training.
2. Possible procedures within the school health program through which teachers may secure in-service training include:
   a. Direct assistance from health supervisors where it is available.
   b. Cooperation with health consultants in the school health program such as doctors, dentists, nurses, nutritionists, psychologists, and health counselors.
   c. Conferences of teacher with nurses and other qualified persons concerning environmental problems.
   d. Conferences of teacher and nurse provide an excellent opportunity for the teacher to learn more about individual children and about the health problems of the school.
   e. Doctor, dentist, and nurse examination of pupils with teacher and parents present provides an excellent opportunity for establishing desirable health attitudes and developing additional health knowledge.
3. The summer health education workshop which is devised to help each participant arrive at solutions of particular problems or at better understandings of felt or discovered needs.
4. Extension courses which should be organized around group needs and the following areas should be considered: nutrition, physical education, personal and community health, growth and development, and techniques for recognizing departures from normal health.
5. Short institutes held locally on school health or health education which should help teachers to see the great possibilities in health education. Meetings of this type may be held on a regular institute day, provided in each county or several

[55] American Public Health Association. *Educational Qualifications of Health Educators.* New York, New York: Committee on Professional Education, 1790 Broadway, 1943.

[56] Illinois State Department of Education. *A Basic Plan for Health Education and the School Health Program.* Springfield, Illinois: Centennial Building, July, 1944. Pp. 71–73.

counties, and qualified speakers might discuss such topics as:

a. The teacher's personal health in relation to successful teaching.
b. The school lunch program as an educational agency.
c. A showing of the sound film strip, *Teacher Observations of School Children* in connection with the booklet, *What Teachers See.*[57]
d. The dangers of emphasis on perfect attendance.
e. The local, county, and state health departments and their relation to the school.

6. Teachers' reading circles, or through making health education materials available to teachers.
   a. The school health council or committee, or some teacher, should assume the responsibility of circularizing information on health education aids.
   b. Teachers should place their names on the mailing list for the Kentucky State Department of Health bulletins, Metropolitan Life Insurance Company health bulletins for teachers, and other agencies.
7. Visitations to other communities, health centers and clinics with reports to fellow teachers about what was observed in the home.
8. Participation in the work of the school or community health council or committee.

Summary. The present trends in school health education in Kentucky indicate that the time has arrived for a statement of health policies in order that the schools of the state might make the greatest possible contributions to the health and welfare of the children. The need for school health policies and the role of the school and community in achieving these policies were discussed. A survey of the health program of Kentucky secondary schools in the spring of 1947 indicated that schools were unfamiliar with the objectives of a school health program. In order to clarify the situation the objectives of the school health program were listed.

The remainder of the chapter outlined suggested policies for Kentucky schools under the following health activities:

1. Healthful school living.
2. Health instruction.
3. Safety instruction.
4. Services for health protection and guidance.

[57] Metropolitan Life Insurance Company, Welfare Division, 1 Madison Avenue, New York 10, New York.

5. Physical education.
6. Recreation.
7. Education and care of the handicapped.
8. Qualifications of teachers and specialized teachers in health.

SUGGESTED PROCEDURE FOR HEALTH GUIDANCE IN KENTUCKY SECONDARY SCHOOLS

Introduction. In the beginning, the chief purpose of health guidance in the school was (1) to discover and to quarantine communicable diseases and (2) to disclose physical defects and deformities. These two purposes were negative in their application and implications. In the modern concept, the terms "health service" and "medical inspection" have given way to the idea of health guidance which has as its purpose the discovery of health needs of the child and planning ways to meet them. The implications of health guidance dictate that the school program must consist of more than the provision of a medical, physical, or health examination through which the pupils are conducted in chain fashion. The examination, in the broader view of health guidance, is in reality only the first step in the process in which the home, school and community are brought into closer and better cooperation for the extension and improvement of health for every child.

Health guidance, then, begins with the pre-school child and continues through the elementary and secondary school. Handicaps to the normal growth and development of the child are conceived no longer as only having a physical but also a mental, emotional, and social basis. Through experimentation, appreciation and application of knowledge from other fields, and analysis, those associated with children know that the child may be handicapped by heredity, birth accidents, disease, common defects of vision, hearing, or undernourishment, lack of sleep, home, school, and community difficulties, lack of parental interest and lack of opportunity for play. Now it is realized that the longer these handicaps exist and are condoned in the child, the longer will it take to modify or correct them.

The successful coordination of all phases of the school program, in order to discover the health needs of the child, is the responsibility of the school administrator. The individuals in the school organization upon whom the school administrator depends for a comprehensive health program are the teacher, the school physician or county health doctor, and the school or visiting nurse. As stated in *The School Health Program,*

> Defining the jobs of these three individuals means defining relationships as well as specific functions. If a child were being

> assembled in the school, there might be a special job for each one on the assembly line. But the child enters school already assembled. Each person dealing with him deals with him as a whole —not just his tonsils, or his eyes, or his learning ability. It is only when the physician, nurse, and teacher work together as a team that they can get something done for the individual child.[1]

Health Guidance in Kentucky Secondary Schools. A review of present practices in health guidance in Kentucky secondary schools has been discussed in a previous study. The situation presented in 1947 is not altogether discouraging but hopeful and, at least, there is an expressed willingness on the part of school administrators to plan a more effective health program tending toward the provision of health guidance for the pupil. That some of the machinery for health guidance is present in Kentucky schools is evidenced by the fact that 13 per cent of 337 schools reporting organized a school health council, or which the school administrator was a member in 12 per cent of the cases. At faculty meetings many of the health problems of the school and the child were considered, with especial emphasis on school sanitation and the provision of physical examinations and immunization. Schools were utilizing community health resources to aid the child in the correction of physical defects. School administrators spearheaded follow-up work in the correction of physical defects. School administrators of the 337 schools reporting stated that 226 county health doctors, 174 local physicians, 102 local dentists, 38 ophthalmologists, and 109 school or county health nurses were available to give medical examinations; and 28 per cent of the 337 secondary schools provided some kind of an examination of varying degrees of thoroughness.

With the advent of the Code for Health and Physical Education (SBE 53-2), effective the opening of the 1948-49 school year, boards of education will be required to authorize the school administrator to implement the regulations pertaining to the health examinations for all entering pupils and every pupil thereafter every 4 years.

It is hoped that the prevalence of county and local physicians and school and visiting nurses will assist the school administrator to implement the code. The summer round-up of pre-school children, sponsored by the Parent-Teacher Association (while effective in other states has not been so in this state),[2] should relieve the strain in the elementary level to some degree, if local Parent-Teacher Associations

---

[1] Metropolitan Life Insurance Company. *The School Health Program.* School Health Monograph, No. 12, 1942. P. 3.

[2] Kentucky State Department of Health. "Parent-Teacher Number," *Bulletin of the Department of Health.* Vol. 19, No. 11 (June, 1947), p. 777; also, Jahr, H. M. "Streamlining School Health Service," *Hygeia,* 23 (September, 1945), pp. 654-655.

will assume this trust. In addition, mobile units under the supervision of the State Board of Health may well assist in X-ray and tuberculin tests for tuberculosis and in the discovery and correction of dental defects.

With all the possibilities mentioned above in the alleviation of some of the school administrator's problems in implementing the regulations of the State Department of Education, he must still devise and execute a plan for the health examination of pupils who are in attendance but who have not received the examination and provided the information required in the cumulative school health record prepared by the Kentucky State Department of Education.[3]

It is the main purpose of this chapter to suggest procedure that may be of assistance to the school administrator in implementing the health examination as an integral part of the health guidance program in the school.

Some Basic Principles Underlying the Health Examination. Before a discussion of the implementation of the health examination as outlined in the *Kentucky School Health Record* provided by the State Department of Education it will be of assistance to those individuals who have the responsibility of administering the health examination if some of the basic principles involved in the examination are discussed. These principles have been disclosed through experimentation and authoritative analysis over a period of 15 years.

1. If health guidance is the progressive inculcation of attitudes and habits through self-recognition of needs and the importance of meeting them, then the ultimate purpose of all individual health programs should be the determination of the health status and the guidance of the individual in an understanding of his responsibility for keeping in dynamic health for personal, social, and vocational efficiency.[4]

2. The health council in the high school builds for increased interest in and social control over health behavior. The activities of the school health council might include surveys of building needs, areas of health instruction, coordination of health instruction program, health assemblies and evaluation and assistance in the implementation of the health examination.[5] In like manner, social plan-

[3] Kentucky State Department of Education. *Kentucky School Health Record*, Form H-4, Revised June 1, 1948, Frankfort, Ky.

[4] *Health in School*, Twentieth Yearbook of the American Association of School Administrators. Washington, D. C.: National Education Association, December, 1946. Pp. 28, 29.

[5] Cromwell, Gertrude E. *The Health of the School Child.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1946. Pp. 205-206; National Education Association. *Health Education.* Washington, D. C.: Joiut Committee on Health Problems of the National Education Association and the American Medical Association, 1941. Pp. 241-242; Sellery, C. M. "Organizing the School Health Program," *Hygeia*, Vol. 20 (September, 1943), pp. 716–718.

ning by communities has been advantageous in the discovery of health needs of school children and the action necessary to alleviate them.[6]

3. It has been found in high schools where the responsibility for health education activities has been placed in the hands of a health counselor, that such an arrangement makes for greater efficiency and for better cooperation among pupils, faculty, and the various health services. A man or woman in such a position needs to have a sound scientific background and training as well as general interest and enthusiasm in regard to health.[7]

4. From the commencement of their school life, children should be made to feel that all those who provide them health services, such as the doctor, nurse, and dentist, are friends and helpers. In the high school grades, children should except to have examinations and to visit the dentist regularly. Exercises involving the less technical phases of the examination should be included in the health instruction program.[8]

5. It is the practical unanimous opinion of school health authorities that the compulsory annual health examination of all school children has not accomplished what it was intended to accomplish. Health education authorities agree that when school medical facilities are limited, the school physician makes the best of his time not by spreading his services thin in the superficial annual examination of all students, but rather by spreading them thick in a thorough examination of a limited number. A comprehensive examination 3 times during school life is the recommendation made in the special study of health programs of schools in New York State by Dr. C. E. A. Winslow. This recommendation is in keeping with the standards called for by the American Public Health Association. But as *School Health Program* states, 3 and even 2 complete physical examinations is often too much of a strain on the medical facilities of some large schools.[9]

---

[6] Kerr, Lorin E. "Coordinating School-Community Health Education," *Ohio Schools*, Vol 22, No. 4 (April, 1944), p. 157.

[7] Turner, E. C. *Principles of Health Education.* Second Edition. Atlanta, Georgia: D. C. Heath and Company, 1939. Pp. 249–251; American Child Health Association. *Health Trends in Secondary Education.* 450 Seventh Avenue, New York, N. Y., 1931. Pp. 16–22. (Publication no longer available as American Child Health Association was discontinued in 1935.)

[8] *Health Education, op. cit.*, pp. 235–237; *Deaver, George G. Fundamentals of Physical Examination.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1939. P. 23; Ohio State Department of Education. *School and Community Health Education.* Columbus, Ohio: Sponsored jointly by the Ohio State Departments of Health and Education, 1946. Pp. 22–43; Rood, Elma and Lingham, Gertrude. *Taking Care of the Family's Health. A Teaching Guide for Rnral Classes.* Madison College, Tennessee: The Rural Press, 1938. Pp. 23–29.

[9] *The School Health Program, op. cit.*, pp. 9-10; Walker, W. F. and Randolph, Carolina R. *School Health Services, a Study of the Programs Developed by the Health Department in Six Tennessee Counties.* New York, New York: The Commonwealth Fund, 1941; Nyswander, Dorothy B. *Solving School Health Problems, The Astoria Demonstration Study.* Fourth Edition. New York, New York: The

6. If a fairly large number of children are examined by private physicians, a proportionately lighter load falls on the school or county physician. Even under the best possible conditions the school or county physician cannot give the same diagnostic service as the family physician.[10]

7. Another method of conserving the school or county physician's time is the selection for reexamination and follow-up of only those pupils with definite health problems. According to this system each child is examined when he enters school either by the school or county physician, or the family physician. Thereafter, only the teacher or nurse, or both, designate the children who need further medical attention. By reducing the number of routine examinations and concentrating on the children referred to him for a special reason, it is possible for the school physician to take advantage of the educational opportunities inherent in each health problem.[11]

8. The presence of parents at the medical examinations of elementary school children is generally agreed upon as a highly desirable procedure.[12] On the other hand, the presence of parents at the examination of high school pupils may not be desirable in all cases. The general feeling is that they are approaching adulthood and should be given an increasing share of the responsibility for the maintenance of their own health.[13]

9. Since only a small percentage of dental, throat, and visual defects are corrected following any examination, it is apparent that the vast majority of these defects will be recorded upon subsequent examinations if there is no natural change in status. In only one field does multiple examination tend to increase the rate of correction. This is in the correction of visual defects. Home visits by the nurse seem to increase the percentage of correction of throat and visual defects. It is, however, not an important factor in securing dental corrections.

Dental caries occur in most instances before children enter school and ultimately affects more than 75 per cent of the children. School

---

Commonwealth Fund, 1942; "A Suggestion for a Good School Health Program," (Editorial). *Journal of Health and Physical Education*, Vol. 15, No. 4 (April, 1945), p. 195; Strang, Ruth. "Forward to More Effective Health Education," *School and Society*, Vol. 57, No. 1487 (June, 1943), pp. 693–696.

[10] Nyswander, *op. cit.*, pp. 23–36. Rogers, J. F. "Health Education and Health Service in Schools," *The Journal of the American Medical Association*, Vol. 109 (September 11, 1937), pp. 842–845. *The School Health Program, op. cit.*, p. 10.

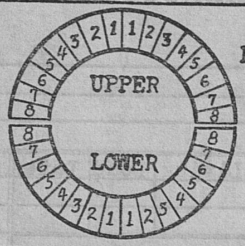
[11] *The School Health Program, op. cit.*, p. 11; Nyswander, *op. cit.*, pp. 57–96; Metropolitan Life Insurance Company. *What Teachers See.* New York New York: School Health Bureau, Health and Welfare Division. (Accompanied by film strips, *Teacher Observation of School Children*, sound and color; *What Teachers See.* Furnished without cost to school administrators and teachers.); Cromwell, *op. cit.*, pp. 201–203.

[12] *The School Health Program, op. cit.*, p. 9; Nyswander, *op. cit.*, pp. 48–56; Walker and Randolph, *op. cit.*, p. 148.

[13] *The School Health Program, op. cit.*, pp. 9-10; Turner, *op. cit.*, p. 245; Cromwell, *op. cit.*, pp. 204-205.

VIII. DENTAL EXAMINATION

Date					L
Malocclusion					
Gingivitis					
Stains - Tartar					
Caries Record - Upper					
Lower					



DENTAL CODE
A - Cavity
B - Needs attention
C - Missing tooth
Record as fraction, number in chart over letter in code.. (R3/B)

IX. HOME SANITATION-Enter date; check (✓) conditions which describe sanitation of home:

Water Supply:					Toilet Facilities:					Insect Control:				
Public					Indoor Flush					Screening				
Private					Sewer connection					Complete				
Well - drilled					Septic tank					Partial				
dug					Outdoor					Spray				
driven					Sanitary Privy					DDT				
Cistern					Open									
Spring					Other									

X. NOTES on CLINICAL, CONFERENCE and FIELD VISITS

DATE	NOTES	WORKER

Form H-4
6/1/48

KENTUCKY SCHOOL HEALTH RECORD

..... SCHOOL

I. NAME | Date Record Opened
Address | Date Record Closed
Date of Birth | Sex: M F Color: W C | Reason Closed

II. PARENTS	Name	Living	Dead	Date
Father				
Mother				

Family Physician
Family Dentist

Further NOTES on Family History, Medical History, Clinical Record, Health Habits, etc.:

III. DISEASES	Date	DISEASES	Date
Diphtheria		Colds	
Measles		Convulsions	
Mumps		Earaches	
Poliomyelitis		Pneumonia	
Scarlet Fever		Rheumatism	
Smallpox		Accidents	
Whooping Cough		Operations	

IV. IMMUNITY STATUS	Date	Date	Date	Date	Date	Date		Date	Date	Date	Date
Diphtheria							Smallpox				
Whooping Cough							Tuberculin				
Typhoid							Other				
Tetanus											

V. MEASUREMENTS & TESTS													
Date													
Height													
Weight													
Vision	R												
	L												
Vision (with Glasses)	R												
	L												
Hearing	R												
	L												

VI. PHYSICAL EXAMINATION

School & Grade				
Age				
Date of Examination				
Parent Present				
Examiner				

	Code	Note	Code	Note	Code	Note	Code	Note
Posture								
Nutrition								
Scalp								
Eyes								
Ears								
Nose								
Mouth & Gums								
Teeth - Temporary								
Permanent								
Throat & Tonsils								
Lymph Nodes								
Thyroid								
Skin								
Heart								
Lungs								
Abdomen								
Orthopedic								
Nervous System								

VII. CODE: 0 - satisfactory; (1) slightly, (2) moderately, (3) markedly unsatisfactory;
- - needs attention; 00 - correction of defect.

children should have at least an annual examination by a dentist who, for economy of time and effort, should make corrections when a defect is found. What is needed is education in the values of dental service in order to secure early detection of caries and treatment.

Because of the importance of unimpaired vision to the child, there should be tests of vision at regular and frequent intervals throughout the elementary and high school period. For all practical purposes, the preliminary visual tests can be conducted by teacher and nurse.

It has become apparent that routine school examinations are of little value in judging the incidence of serious tonsil defects of children. More reliance should be placed upon the personal history of the child and the observation of nurse and teacher over an interval of time than upon medical findings at the time of the examination.[14]

The School Health Record. *The School Health Record* has been designed and issued by the Kentucky State Department of Education for the use of any child from his sixth through his seventeenth year, regardless of whether or not he is attending school. It is used for any child attending school, even if he is less than six or over seventeen years of age which includes children examined in the Parent-Teacher Association summer round-up and students in higher institutions of learning.

The record is designed (Figure 1) to serve as a cumulative health record as required by the Regulations of the State Board of Education. The *Code for Health and Physical Education* (SBE 53-2) stipulates that at the opening of the school year, 1948-49, each public school and institution of teacher education shall start cumulative health records. These records are to be maintained through the child's or student's attendance, after which they are to be filed as a part of the school's permanent record and are to be available for transfer.

As observed in Figure 1, the cumulative health record is divided into 10 subdivisions with the following heads: name, parents, diseases, immunity status, measurements and tests, physical examination, code, dental examination, home sanitation, notes on clinical, conference and field visits.

Plans of Organization for the Examination. Kentucky secondary school administrators have been employing various plans of organization to provide examinations for the pupils under their supervision. It is probable that these practices are best suited to the school situa-

[14] Walker and Randolph, *op. cit.*, pp. 151–153; Nyswander, *op. cit.*, pp. 153–194; 220–222.

tion and will continue to be employed in the future. It is also probable that some one of these plans of organization will assist school administrators in the implementation of the regulations of the school code.

The administrator will of necessity have to consider 3 approaches to complete the examinations of the pupils:

1. The summer round-up conducted by the Parent-Teacher Association.
2. The regular examination of pupils who can not, for various reasons, take advantage of an examination by a private or family physician.
3. The pupils who receive an examination from a private or family physician.

In the first plan of organization, the local president of the Parent-Teacher Association should be informed of the services expected of that body and the urgent need for their cooperation. Some one representative of the school should act as a liaison officer. All parties concerned, the school or county physician, the school or visiting nurse, the school administrator or his representative, and the president of the Parent-Teacher Association should meet sufficient time ahead to plan and to make arrangements for the examination as to time, place, notification of parents through the newspaper, letters of invitation to parents, securing assistance from all available medical and non-medical personnel and follow-up work in the correction of revealed physical defects by parents and the assistance of local civic or state agencies.

In the second plan of organization, the school administrator should and has been securing the assistance of the school physician, or the local board of health in planning the procedure of the examination. There have been several plans of approach to this problem employed by school administrators before the advent of the *Code for Health and Physical Education.*

1. Private and denominational schools have utilized their own medical staff and personnel in examinations scheduled at the beginning of the school year, or spread over the school term.
2. At Murray Training School, time convenient to the county health doctor and nurse and to the school administrator is arranged and an examination is made of as many pupils as time permits. According to Director C. M. Graham, the examinations are generally completed in two weeks following this procedure.
3. In large city school systems such as Louisville and Lexington, a schedule is arranged with physicians to visit each school on

a particular day of the week through both terms. Working with the school or visiting nurse, the physicians examine those pupils withdrawn from a study or library period, or a physical education or health class.

4. Some schools, such as the University High School at Lexington, make arrangements with physicians and dentists to examine the pupils on a particular day, generally at the opening of school. Where the enrollment is small, this procedure is most satisfactory.
5. In many schools the visiting nurse is utilized in the examination of pupils. Harlan City Schools is an excellent example of this procedure. The county health nurse with an assistant conducts an examination of items that are in their province (Figure 2) and administers immunizations for smallpox, diphtheria, whooping cough, typhoid, and tuberculin tests. The county health doctor provides an annual routine examination of the heart, dental clinics are provided by the local dentists, and positive reactors from the tuberculin test are referred to family physicians for X-ray and treatment.
6. Many schools take advantage of the mobile units under the supervision of the State Board of Health which conduct examinations for tuberculosis and dental defects. City or county dental clinics with or without immediate correction of dental defects have also been sponsored in certain localities in Kentucky. All of these provisions relieve the burden of the physician and nurse in the examination of children in the school by virtue of a decrease in the items of examination.
7. Examinations to determine the pupils' fitness to participate in high school interscholastic or intramural competition are considered as equivalent to an examination performed as in the other methods discussed. The examination, however, must be recorded on the *Kentucky School Health Record* and copies filed with the boards of education and health.

In the third plan of organization, pupils who receive an examination from a private or family physician will assist greatly in reducing the number of pupils who will require the services of the school or county physicians. Good examinations are obtained in the offices of private and family physicians. Since the *Kentucky School Health Record* is standard and a regulation of the State Board of Education, care must be taken to avoid loss of the health record in transition. If a sizeable number of pupils are examined at one time, they should be

PHYSICAL INSPECTION SCHOOL RECORD

School ..... Date of birth..... Sex.....

Name ..... Parent ..... Address .....

Family Dr.	Grade	Grade	Grade	Grade	Grade	Grade
	Year	Year	Year	Year	Year	Year
	Date	Date	Date	Date	Date	Date
Age						
Height						
Weight						
Normal Weight						
% Underweight						
% Overweight						
Vaccination						
Diphetheria Immunity						
Typhoid						
Tuberculin Test						
X-Ray						
Posture						
Vision R L						
Teeth						
Tonsils						
Glands and Thyroid						
Heart						
Ears						
Scalp						
Skin						

accompanied by the nurse and teacher; the nurse to assist the physician and the teacher or other school representative to record the data.

Payment for Services Rendered. In many cases it is presumed that the parents, if able and willing, will meet the expense of the examinations by private and family physicians. Many examinations will be conducted free of charge by the county health department personnel. Physicians of county medical associations will do examinations for a modest fee which can be met by local agencies such as the Tuberculosis Association, Cancer Society, Save the Children Foundation, Red Cross, and others, and civic organizations such as the Parent-Teacher Association, Lions, Rotary, Kiwanis, Woman's Club, American Legion, Farm Bureau, and others. If neither parents, agencies, or civic groups meet the cost, the burden falls on the local board of education.

The state laws permit city or county boards of education to pay for health service rendered by boards of health.[15] Payments at present range from $200.00 to approximately $7,000.00.

Time Required for Each Health Examination.[16] The publication, *Questions and Answers Concerning the Code,*[17] suggests between 20 and 25 minutes for each health examination if the physician's time is not consumed by recording data. The physician should have sufficient time to advise with the parent or guardian. The American Public Health Association standards call for a maximum of 12 examinations per hour, or 5 minutes per child.[18] However, the type of examination, personnel, equipment and facilities will influence the number of children that can be examined per hour if the time factor must be considered.

Who Shall Be Examined? Under the regulations of the State Board of Education (SBE 53-2) eac child, as far as local facilities and personnel are available, shall receive an examination prior to or on entrance to school and every 4 years thereafter. Each teacher upon employment and every year, thereafter, shall have an examination.

---

[15] Kentucky Revised Statutes, 1946, Section 212.470.

[16] Literature of the Kentucky State Department of Education, Division of Health and Physical Education and the Kentucky State Department of Health uses the term "medical examination" to include personal and family history and the physical examination. Throughout the discussions, the author has used the term "health examination" which is defined as, "That phase of health service which seeks through an examination by physicians, dentists, and other qualified specialists to determine the physical, mental and emotional health of an individual." Journal of Health and Physical Education, *Definition of Terms in Health Education.* Committee on Terminology, Vol. 5, No. 10, December, 1934, p. 17.

[17] Kentucky State Department of Education. *Questions and Answers Concerning the Code.* Frankfort, Kentucky: Division of Health and Physical Education, April 21, 1947.

[18] *The School Health Program, op. cit.,* p. 9.

Religious beliefs opposing physical examinations are not sufficient grounds for excuse from taking medical or physical examination[19] but might be justifiable reasons for being excused from health and physical education classes.[20]

It is the recommendation of the Kentucky State Department of Health that there should be an annual examination of all school employees. School employees include all persons employed by the board of education to carry on the school program, namely teachers, bus drivers, lunchroom attendants, janitors, supervisors, principals, and attendance officers. The examination should include a check for tuberculosis and venereal disease, immunization for typhoid and smallpox, and bus drivers, in addition to these, should have vision and hearing tests. Whether examination is done by the county health department or a private physician is a matter of local determination. When performed by a private physician the results of the examination should be returned to the health department which in turn will certify all examinations to the board of education, or the report by private physician may be submitted in duplicate—one to the board of education and the other to the health department.

Preexamination Considerations. In order to expedite the examinations in terms of efficiency and economy of time, certain procedures are necessary. Anticipation of needs and arrangement of facilities for the examination will save unnecessary delay and confusion. It is poor practice to use the physician's time for recording and in giving tests that can be performed during the examination or in the classroom by teachers and trained assistants.

1. *Where Shall the Examination Be Given?* If the department of health facilities are located in the area and are adequate in size and properly equipped for an examination, it is an ideal place to conduct the examination. Many Kentucky secondary schools, however, are not so fortunately located and will have to resort to the use of the school building. If such be the case, the room or rooms used in the building should be well lighted so that instruments can be easily read and those items which require close inspection can be readily seen.* The room should be heated sufficiently to avoid chilling and be well

---

[19] Ruling of Attorney General, March 19, 1947. On file, State Department of Education, Division of Health and Physical Education, Frankfort, Kentucky.

[20] Ruling of Attorney General, March 19, 1947. (There is reason to believe that the State Court of Appeals may not concur in the ruling, although a test case has not been made.)

* Note.—For plans of health service units see: *A Guide for Planning Facilities for Athletics, Recreation, Physical and Health Education.* The Athletic Institute, Inc., 209 South State Street, Chicago, Illinois, 1947, pp. 50–6.

ventilated. Naturally, the room, or rooms, should have a clean and cheerful appearance.

It is preferable to utilize two adjoining rooms of sufficient size to provide a comfortable waiting space for parents and children, and a conference room for the physician. Unfortunately, all schools can not furnish such an ideal organization but a conference between the principal and custodian should provide something approaching the ideal.

In lower grades, if conferences between physician and parent are to be successful, only the parent and the child being examined should be permitted in the physician's conference room. Perhaps the same policy of privacy should be followed in the case of pupils of the upper grade to avoid the chance of embarrassment and permit heart-to-heart talks between physician and pupil.

2. *Equipment.* If the examination is given in the building of the department of health, most of the equipment necessary for the examination will be provided. In the conference room of the school, however, not all the equipment can be furnished, but there are a few essentials that might be suggested.

   a. A balance scale without springs to secure accurate records of weight. The scale should be furnished with a stadiometer for measuring height.

   b. A Snellen Chart to test visual acuity.

   c. A small pocket flashlight for the examination of ears, nose and throat.

   d. A posture testing apparatus. A vertical stand, with a support at the base, 6 feet in height, with a horizontal arm extending 2 to $2\frac{1}{2}$ feet from and at right angles from the top at the end of which is attached a white cord. At the end of the white cord and free from the floor is fastened a plumb bob. This is a simple piece of equipment and can be made in the manual arts class or vocational shop.[21]

   e. A first aid kit which is not only useful during the period of examination but should always be available during the regular school period.

   f. A chair and table for recording data.

   g. A chair for the physician and an examining stool or chair for the pupil.

[21] Deaver, George. *Fundamentals of Physical Examination.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1939. P. 63.

h. Waste paper basket.

i. A suitable book provided with an alphabetical index for keeping the School Health Records.

It is assumed that materials needed in the process of the examination such as tongue depressors, cotton, and other items will be supplied by the county health department. Some schools will possess special testing equipment. For an example, 17 secondary schools of 337 surveyed in Kentucky, 1947, used telebinoculars and 23 had access to an audiometer which they purchased, borrowed, or received as gifts from civic clubs.

3. *Informing and Directing Pupils.* After the date of the examination has been determined, pupils should be informed of the plan of the examination either through class or posted announcement. A teacher or nurse should regulate the flow of pupils in the waiting room providing them instructions as to how much clothing should be removed and where and how the removed clothes should be placed.

4. *Dress.* The pupil should be prepared so that the complete examination will not require the taking off or putting on clothing. Inquiry at a meeting of public health nurses at Lexington from various counties over the state and responses from school administrators indicate that the present practice is to have the children disrobe to the waist and remove shoes and stockings. Girls disrobe to their panties and wear sheets. In those schools which conduct a physical education program and require a uniform, boys can wear their gymnasium shorts at the examination.

Instructions for the Use of the School Health Record.

In Section I, of the Kentucky School Health Record, the full name is required—giving the last name, first name and middle initial in that order. The address is given in the order of house number, street (or R. F. D.), city and state. Date of birth includes month, day of birth, and year. On the extreme right hand of the record is a space requiring the date the record was opened, date closed and reason for closing record, such as moved from the country, over-age, not in school, or died.

Section II requires the name of parents and whether living or dead and, if dead, date of death. Causes of death and any other

pertinent family data are recorded under *Further NOTES* to the right of this section.

Section III includes a list of diseases and the year in which the child had these diseases. Other facts pertaining to the life of the child such as illnesses, accidents, operations, diet, personal habits and others are recorded under *Further NOTES.*

Under Section IV is recorded the immunity status of the child for which there are records in the files of the health department or which are available from the family physician. No immunization is recorded unless it is complete. The first column under "date" should give the date of completion of the initial immunization. The second and third column under "date" should be used for recording booster doses. If a child has a scar of smallpox vaccination and the date of the vaccination is not known, the word "scar" is written under the first date column for smallpox (Figure 3).

Immunity Status	Date	Date	Date	Date
Diphtheria	5–7–36	booster 6–14–38	booster 9–5–42	
Whooping Cough	6–10–36	6–14–38	9–5–42	
Small pox	3–7–36	revac. 9–14–47		
Typhoid	4–3–43	4–10–44	4–2–45	3 injec. 5–6–48

Figure 3. Example of Recording Under Immunity Status (From Kentucky School Health Record, Form H-4).

The data secured from the physical examination are recorded in Section VI. According to *Questions and Answers Concerning the Code,*[22] published by the State Department of Education, Division of Health and Physical Education, the State Department of Health has established these minimum essentials in the physical examination: Condition of (a) nutrition, (b) skin, (c) eyes (R-L), (d) ears (R-L), (e) nose, (f) teeth and gums, (g) throat and mouth, (h) lymph nodes, (i) heart (before and after exercise), (j) lungs, (k) bones and joints (posture and feet), (l) abdomen (hernia), (m) nervous system (speech).

Section VII denotes coding scheme to be used in filling out the record and is self-explanatory. Section VII provides a check on home sanitation of the child at the date closest to the time of the current medical examination. The abbreviation KSP stands for Kentucky sanitary privy.[23] It appears that the nurse is to check this section on her home visits.

[22] *Op. cit.*, p. 2.
[23] Kentucky State Department of Education. *Code for School Sanitation.* Frankfort, Kentucky: Division of Health and Physical Education, 1946.

The space provided in Section VIII is to be used for narrative entries. These entries may include notes on teacher observations, nursing visits, visits of the child to the health department, laboratory findings, results of conferences between teacher and nurse, or a summary of special health services received by the child involving a communicable disease, tuberculosis, or an orthopedic condition.

Teacher Assistance. In the main, Section V can be completed by a non-medical person such as the classroom teacher, athletic coach, or physical educator. It is generally agreed by health authorities that teachers can satisfactorily perform determinations of weight and height and examinations of vision, hearing, and posture.[24] In the initial examination of the child, the health history may be taken by the teacher. At least, it is suggested as a means of relieving the nurse in counties where her services are spread thinly. In fact, the teacher may also assist in securing the data for Section IX on home sanitation from the child or through her actual knowledge of home conditions. This is especially advisable in rural areas.

In rural and urban schools it is suggested that the teacher, athletic coach and physical educator, in the organization of the medical examination, might well be made responsible for stations treating personal history, Sections I, II, III, IV, and V. Such a procedure will free the physician and nurse from items that can be done by a less technically trained person.

Weight and Height. Health in Schools, in a discussion of weight and height, states:

> Certain procedures such as weighing and measuring are usually good teaching devices and as such could well be left to the teacher. . . . Gains in height and weight vary with the individual. Each child is a pattern unto himself and his rate of growth will vary seasonally, increasing in summer and fall, according to his heridity and eating habits. However, in addition to the above factors, influencing both gains in weight and height, sickness and other unsatisfactory conditions of living may cause temporary and unexpected retardation.[25]

Teachers or the nurse should weight elementary school children monthly and measure height semiannually. The conditions under which the weight and height are taken should be standardized, at least, to the time of the day and day of the month. Some teachers in the elementary schools in Kentucky use a daily weight chart, and coaches in the secondary school check daily weight of candidates in football and basketball to help determine condition. These citations,

---

[24] *The School Health Program, op. cit.,* pp. 5-6; Wheatley, George M. "The Astoria School Health Study: Medical Aspects," *Journal of School Heatlh,* Vol. 12, No. 1 (January, 1942), pp. 9–15; Nyswander, *op. cit.,* pp. 9–15; Williams, J. F. *Methods and Materials of Health Education.* New York New York: Thomas Nelson and Sons, 1937. Pp. 141-142.

[25] *Health in Schools, op. cit.,* p. 41.

however, are exceptional in Kentucky and not general. A survey of 68 secondary schools chosen by random sampling over the state in the spring of 1947 showed that 7 schools possessed a scale, or 10 per cent of the total.

A standard scale without springs should be used and before weighing it is wise to check the balance of the scale. Reading is made when the pupil stands quietly in the center of the scale platform. Height is measured by a stadiometer or wall measurement. Regardless of the method, the measure should be made without shoes. If a stadiometer is used in connection with the scale, the pupil should be instructed to stand tall with the heels together and the head, shoulders, sacrum, and heels against the measuring rod. The flat movable arm of the measuring device is brought down firmly against the top of the head. If wall measurement is used the same techniques explained in the stadiometer apply. The ruler, or flat stick, should be placed firmly on top of the head and kept at a right angle to the measuring scale.

Visual Testing. The simplest test for visual acuity is the Snellen test.[26] In testing for distance, 20 feet is used since the rays of light are almost parallel at that distance.

The examinations should be made in a room the length of which is a little more than 20 feet. A distance 20 feet from the chart should be accurately measured and marked. The pupil should stand, or should be seated on a chair, on the 20-foot line, so that his eyes are exactly 20 feet from the chart. There should be not less than 10 foot-candles evenly distributed over the chart. Whenever possible artificial light should be used in order to keep illumination constant at all times, on cloudy as well as on bright days.

If the pupil wears glasses, these should be removed and a test made without the glasses and then with the glasses. If only one test is to be made, it should be with glasses. In either case, a small card about 3x5 inches is held before one eye of the pupil, the card lying obliquely against the nose so as to cover the eye completely, but avoiding any pressure against the eyeball. Both eyes are to be kept open and one eye tested at a time. It is wise to standardize technique by always beginning with the right eye.

If the examiner has an assistant, the examiner points to the letters or characters on the chart, being careful that there is no memorization and also that the pupil is encouraged to do his best.

[26] National Society for the Prevention of Blindness, Inc. *"Screening," Eye Examinations, and Follow-Up,* Publication 443. New York, New York: 1790 Broadway, 1945.

If no assistant is available, the examiner will have to approximate what he deems the best technique.

Begin the test at one end of the lines of large symbols or letters and run down rapidly to the pupil's easy limit, then carefully seek identification of each character by pointing, if the symbol E is used, or by naming the letter, if letter charts are used.

Visual acuity is expressed in a fraction; the numerator is the distance (20 feet) and the denominator is the number on the chart which indicates the distance at which the letters would have been read by a normal eye. If the pupil's vision is normal his visual acuity is 20/20. Two errors to the line indicate inability to read that line.[27]

In Nyswander's report of the Astoria study 7,459 children from all elementary grades in New York were tested by their respective teachers in the classroom with the Snellen Chart. Ninety-one per cent of the children found by teachers to test 20/50 or more were found on retest by technicians to test 20/40 or worse. It was decided, after the study, to refer children directly to the ophthalmologist without rechecking by the nurse if the teacher found them to test 20/50 or worse.[28]

The ophthalmic telebinocular is an instrument designed for binocular tests of visual functions and is used by many opthalmologists as a preliminary screening test. It is useful for the determination of visual acuity and also the detection of lateral and vertical imbalance, fusion, ametropia and color discrimination. It has been found useful in schools by some research men[29] and questioned[30] by others in relation to the Snellen Chart. Opthalmologists are agreed, however, that the Snellen Chart is not the best screening method because it overlooks serious conditions of ametropia.

Hearing Tests. The watch test is considered more accurate than the whisper test of hearing. A stop watch is preferable to an ordinary watch. The sounds from a stop watch are more consistent than an ordinary watch, and it can be stopped or started at will.

The procedure of the test is as follows:

1. The pupil is asked to close his eyes and also one ear with a moistened finger. The examiner stands with the stop watch 36 inches directly in front of the ear to be tested and asks the pupil to raise his hand when he hears the ticking of the watch.

---

[27] National Society for the Prevention of Blindness, Inc. *How to Test for Visual Acuity.* New York, New York: 1790 Broadway.

[28] Byrd, Oliver E. *Health Instruction Yearbook 1943.* Stanford University, California: Stanford University Press, pp. 228-229.

[29] Deaver, *op. cit.*, p. 130.

[30] Louisiana State Department of Health. "The Telebinocular Test as a Method of Screening," *Quarterly Bulletin,* Vol. 33, No. 2 (June, 1942), pp. 4-5.

2. The normal hearing range of the ear when a watch is used as a means of measure is 36 inches. Thus, variations in hearing distance are calculated with 36 as the denominator. For an example, a pupil who finally hears the ticking of the watch at approximately 18 inches has a hearing distance of 18/36.
3. To verify that the pupil is not malingering, the examiner may vary his technique in administering the test. For an example, the watch may be moved out of the normal range of hearing and started, or beyond the range of the pupil's peripheral vision. A test directly to the rear of the pupil's head is not valid since the sound waves bifurcate and must travel over a circuitous route to be recorded.

The audiometer is an apparatus designed upon the principle of the phonograph. Since it is a test of speech, a man's and woman's voice is used in the dictation of numbers. The sound waves are transmitted over earphones and as many as 40 pupils can be tested at one time.[31] Directions for conducting the test and scoring are furnished by the manufacturer.

Posture Test. In considering posture, the teacher must take into account that (1) there are no definite standards in judging posture, (2) there is no generally accepted agreement on the relative value of posture, and (3) that poor posture often results from pathological conditions existing in the body rather than being the cause of these ills.

In his discussion on the examination of body mechanics, or posture, Stafford states: "The average physical educator and health worker desires a cut-and-dried system which he can apply to his particular situation, but unfortunately it is difficult to provide this tested system which will fit all cases."[32] Probably, the best attitude for the teacher to take toward the posture test is encompassed in Morrison's and Chenoweth's definition of good pasture:

> Good posture may be defined as that position which enable the body to function to the best advantage as regards work done, health and appearance. . . . Desirable posture in every case is that position best adapted for work and requiring the least expenditure of energy. Posture thus defined includes the mental states accompanying the physical characteristics necessary for accomplishment.[33]

The equipment for testing posture has been suggested under the discussion of preexamination considerations. The device is based on

---

[31] Gardner, Warren H. *Instructions for Conducting Audiometer Tests.* Washington, D. C.: American Hearing Society, 1537, 35th Street, N. W., 1945.
[32] Stafford, George T. *Preventive and Corrective Physical Education.* New York, New York: A. S. Barnes and Company, 1928, p. 101.
[33] Morrison, W. R. and Chenoweth, L. B. *Normal and Elementary Physical Diagnosis.* Philadelphia, Pennsylvania: Lea and Febiger, 1928, p. 99.

the Bancroft vertical test in which an ordinary window pole served as a vertical line. The suspended white cord to which a plump bob is attached has been substituted for the window pole. The stand arrangement makes the posture equipment easier to move about and the white cord a finer line of gravity.

The pupil should be placed so that the gravity line strikes in front of the ear, middle of shoulder, thigh, knee, and foot at arch. The pupil then looks ahead at some object about the level of the eyes while the examiner steps back several feet and notes the following factors as he grades the pupil's posture:

Grading Posture

	Ideal Posture	Average or Good Posture	Fair Posture
	A	B	C
1.	The neckline should be perpendicular.	Slight or mild forward inclination of the head.	Moderate forward inclination of the head.
2.	A plumb line from the tip of the mastoid should pass through the tip of the acromion (bisect upper arm).	The shoulder position is very slightly anterior to the line of gravity.	Shoulder position usually more anterior to the line of gravity.
3.	The chest should be moderately elevated.	The chest is slightly depressed.	The chest may be more depressed.
4.	The abdomen is flat from the pubis to the sternum.	There is a slight protrusion of the abdomen.	Abdomen definitely prominent.
5.	The dorsal spine should be flat (shoulder area).	There is a slight curvature.	There is a definite curvature.
6.	The lumbar spine should be flat under the string.	The lumbar spine pulls away from cord about one finger-breadth.	The lumbar spine pulls away 2-3 finger-breadths from the cord.
7.	The knees are straight and there is no tendency to the back knee position.	About the same as in "A" posture.	Little change in knee position.
8	The foot stance shows a straight heel cord.	A variation from a straight heel cord to a slight degree of pronation.	Variation from a slight to moderate pronation.[34]

As a rule, children in the kindergarten, elementary, and secondary schools are not good examples of correct body mechanics. Stafford states that,

> There has been a dearth of figures showing body mechanic classifications in these schools. The recent activity in "pre-school" examinations has showed that the child who is about to enter school has, in the majority of cases, poor body mechanics. The examinations in the elementary schools, though prefunctory in many cases, reveal the fact that over 70 per cent of the elementary school children need correction for their existing faulty body mechanics. The figures for the secondary schools are almost identical with the college students' body mechanics figures.[35]

[34] Adopted from Deaver, *op. cit.*, p. 61.

[35] Stafford, *op. cit.*, pp. 64-65. Studies of freshmen students at Harvard University by Brown and students in large high schools and colleges in the mid-western states by Stafford disclosed the following rating of body mechanics:

	Harvard University	High Schools and Colleges in Mid-West
Good Body Mechanics	7.5%	7%
Fairly Good Body Mechanics	12.5%	13%
Poor Body Mechanics	55.0%	60%
Very Poor Body Mechanics	25.0%	20%

It seems lamentable that our present system of physical education delays correction of postural defects present in children of the elementary and secondary schools until they enter college or university. Conditions of round shoulders, abdominal protruberance (viceroptosis), lateral spinal curvature an inch beyond the median line (scoliosis), extreme lumbar curves (lordosis), weak or flexible flat feet, and obesity can best be corrected or modified in pupils of the junior and senior high school grades, and particularly children of the elementary grades. Yet, Wyatt's study revealed that 10 of 484, or 2 per cent of the Kentucky secondary schools surveyed in 1945-46 provided classes for pupils with poor posture or body mechanics in the physical education program.[36] The situation has never been studied in the elementary school, but Wyatt's secondary school statistics should be prophetic.

Mental Testing. Teachers have always been conscious of the fact that there are great differences in children with respect to intelligence and ability to do schoolwork. Although many teachers are prepared by educational background and experience to give group tests of intelligence, it is best for an experienced psychologist to administer them. The intelligence test should be recognized as a valuable phase of the health examination in guidance.

Pupils with I. Q.'s of 80 or better are generally within the range of normal children if they are living under average environmental conditions and have satisfactory and intelligent guidance. The pupils, however, with I. Q.'s ranging from 50-80 present a definite problem to the public school which is geared to instruct those of average or better intelligence. In a few schools in urban areas, this dilemma is solved through special classes for the mentally deficient which attempt to provide educational opportunities suitable to their individual needs. In rural and small urban areas this problem is not so easily solved and adjustments must be made for the mentally deficient individually within a class of mixed mental abilities. Although present resources and facilities in many schools prohibit special classes for the mentally defective, the knowledge of their limitations, as disclosed by mental tests, should assist the school administrator, teacher, or health coun-

[36] Wyatt, Clarence H. "The Status of Health and Physical Education in the Secondary Schools in Kentucky (1945-46)," *Kentucky State Department of Education Bulletin*, Vol. 14, No. 5 (July, 1946), p. 455.

selor in advising them, planning their school program, and securing assistance for them through local and state agencies.

Recent state laws regarding mentally defective have included a proviso that requires all children assigned to special classes for this reason be given a medical examination before such an assignment and annually thereafter. This provision has been made to assure that no child suffering under a physical handicap will be thought of as mentally inferior. Undisclosed defects in vision and hearing frequently place children in the category of mentally deficient. This situation is not so much a criticism of mental testing but rather an example of how the medical examination and mental testing can work cooperatively to provide a check which is to the best interest of the child.

Disposition of the School Health Record. In 1946-47, before the *Code for Health and Physical Education* became effective, a survey of 337 Kentucky secondary schools indicated that the health record card or sheet was more often kept in the files of the department of health than in those of the school. Under the regulations, effective 1948-49, the school will maintain a file of the School Health Record as well as the health department.

Certainly every school administrator, teacher, or health counselor should have access to the health record of each child if guidance is to be effective and purposeful. Through an increasing knowledge of the child gained from his medical examination, mental test and observation of his mental behavior and attitude, these individuals can better understand the child's capacity and ability and help him to make satisfactory adjustments in meeting life situations.

Follow-Up. As previously mentioned, the medical examination and mental test are the first steps in the health guidance program in the school. As so well state in *Health in Schools,*

> The school has the responsibility for assuring that procedures recommended by the school medical adviser are carried out. This medical follow-up frequently entails educating the parents as well as the child in the importance of carrying out the doctor's advice. With the coordinate effort of the administrator, medical adviser, nurse, and teacher, and even with the best cooperation the family can provide, the school may have to assume the responsibility for all services short of medical treatment.[37]

A survey of 337 Kentucky secondary schools in the spring of 1947 showed that the medical, physical, or health examination was followed by a supplementary examination in 47 schools. These supplementary examinations were conducted by the school or county physician, nurse, clinical staff, hospital medical staff, and athletic

[37] *Op. cit.,* p. 51.

team physician for children who needed an additional examination to determine their health status.

Schools in Kentucky employed various methods of contacting the parent to assure corrections of physical defects after the examination. Letters, referral forms, and recommendation slips are mailed to parents by the school and the health department in an effort to secure action.

The more popular methods in actual practice in Kentucky schools in obtaining the correction of physical defects disclosed in the examination were visits to the home of the children by the school administrator and correspondence such as reports of the examination, letters, and notes to the parent that emanated from his office. Other methods of contact included invitations to the parents to come to the school for an interview, phone calls, correspondence from the health department and visits to the child's home by homeroom teacher, teacher, school or visiting nurse, P. T. A. representatives, health counselor, civic representatives, and social workers.

In health literature, the school or visiting nurse is generally mentioned as the liaison officer between the school and the home in the matter of follow-up, yet it is evident that the school nurse plays a minor part in this respect in Kentucky schools. An explanation for this situation is couched in the fact that her duties are manifold and her territory too large to cover. As a visiting nurse, her time at a particular school is limited to a precursory examination of the children and perhaps one or two immunizations and then she must move on if other schools are to receive even this much service. If there is to be any follow-up at all in Kentucky schools, the responsibility rests, in most cases, on the school administrator and members of his faculty. Under the circumstances, more than 17 per cent of Kentucky's 337 administrators and their staff members have been doing an excellent job in assuming the responsibility for follow-up.

The school administrator must frequently look to state and civic health agencies for assistance in securing the correction of physical defects. This procedure has become a common practice with Kentucky school men who through the Parent-Teacher Associations, Lions, Kiwanis, Rotarians, American Legion, Shriners, and other organizations have secured medical care, dental clinics, glasses, clothing, and other essentials for their children.

Children with physical handicaps who require special attention must, somehow, be fitted into the regular school program, or the school system must provide classes designed to meet their needs. According to the author's 1947 survey of 337 Kentucky secondary

schools 18, or 5 per cent, organized special classes for the physically handicapped in the physical education program; 213, or 62 per cent, made seating adjustments for the hard of hearing; 146, or 43 per cent, modified the school load; 1 furnished a sight-saving class; and 5 employed a visiting teacher for those pupils confined to the home.

Cooperative Health Guidance. Health guidance in the school is a continuous process. The physician with assistance of a nurse conducts the health examination and both share in the correction of physical defects and the necessary steps for health protection. The school administrator and his staff cooperate with health authorities in the education of the parent, secure, by one means or another, positive action in the elimination of physical handicaps, provide a healthful school environment, and make the necessary adjustments in the school program to meet the individual needs of the child.[38]

In the continuing process, however, of health guidance the child needs help and attention as he progresses. There will be times when periodic conferences are necessary with respect to etxra-curricular activities, reinforcement of good patterns of living, and to prevent unsatisfactory practices detrimental to his health and future acceptance as a member of society.[39]

The role of the teacher in health guidance has been emphasized in previous discussions because she is in a strategic position to observe changes in health status and to give the necessary supervision to meet the child's health needs as outlined by the physician and as disclosed in the mental test. In the elementary school the teacher, in cooperation with the school nurse, has proved to be a valuable ally in the prevention and control of communicable disease.[40] Both the elementary and secondary school teacher can assist as clerks at the medical examination, make continual and regular checks on vision and hearing, not only through tests but also through daily observations in the classroom, measure heights and weights regularly, observe

---

[38] National Society for the Prevention of Blindness. *An Eye Health Program for Schools.* Publication 398. New York, New York. 1790 Broadway.

Mufford, Eleanor W. *Eye Health in Secondary Schools.* New York, New York. National Society for the Prevention of Blindness, 1790 Broadway. (Reprint from *Public Health Nursing,* (October, 1941).

Macnutt, Edna G. *The Hard of Hearing Child in School.* Washington, D. C. American Hearing Society, 1537—35th St., N. W.

Tritt, Jessie A. *The School as a Unit in a Program for Better Hearing.* Washington, D. C. The American Hearing Society, 1537—35th St., N. W.

[39] Leonard, Margaret. *Health Counseling for Girls.* New York, New York. A. S. Barnes and Company, 1944.

Strang, Ruth M. *The Role of the Teacher in Personnel Work.* Revised Edition. New York, New York. Bureau of Publications, Teachers College, Columbus University, 1935.

Strang, Ruth M. *Counseling Techniques in College and Secondary School.* New York, New York. Harper and Brothers, 1937.

Blos, Peter. *The Adolescent Personality, A Study in Individual Behavior.* New York, New York. D. Appleton-Century Company, Inc., 1941.

[40] Nyswander, *op. cit.,* pp. 57-73; *What The Teacher Sees, op. cit.*

unusual behavior patterns, and implement the necessary adjustments and allowances required for the atypical child.[41]

The teacher's important function in the detection of emotional and personality difficulties in children has been mentioned many times in the literature of health authorities for the past 25 years. That teachers are not conscious of the significance of abnormal behavior in their children has been demonstrated time and time again.[42] It is not, however, entirely the teacher's fault that she does not recognize atypical behavior in her charges since it has only been in recent years that curriculum planners in teacher training institutions have come to appreciate that mental illnesses of adulthood have their origin in abnormal behaviors of childhood.

It is true that teachers need special preparation in order to become more skillful at the task of teaching their pupils the techniques and principles of their subject, but it is equally true that teachers need special preparation in order to become skillful at the task of developing healthful mental attitudes. In regard to the teacher and mental health in the school, Myers points out:

> The time has passed when we are satisfied to depend entirely on our "natural talent" or "common sense" in dealing with children. In matters of physical health, we no longer suppose that teachers (or even mothers) know "by instinct" what is best for children—that they can tell "intuitively" what diet will build strong bodies or what precautions are necessary to preserve healthy teeth. These are matters with respect to which we now demand accurate and reliable information. Similarly, with respect to mental and emotional health, teachers (and parents) are demanding more adequate and more precise information concerning factors which help or hinder the development of good mental health in children.[43]

Summary. The health guidance program in the school has progressed from its early purpose of discovery and quarantine of communicable diseases and disclosure of physical defects and deformities to one in which the discovery of the child's needs, and finding ways to meet them are paramount. The successful coordination of all phases of the school program to accomplish this modern concept of health guidance is the responsibility of the school administrator who, in turn, is dependent upon the cooperation of the school or county physician, the school or visiting nurse, and the teacher.

Although present indications are that much of the basis for a

---

[41] Fulks, R. B. *A Plan for Health in the Schools.* Louisville, Kentucky: Kentucky State Department of Health, 620 South Third St., (Mimeographed) 1947.
Fulks, R B. *Compendium of Public Health Problems for Teachers.* Louisville, Kentucky: Kentucky State Department of Health, 620 South Third St., (Mimeographed) 1947.

[42] Weckman, E. K. *Children's Behavior and Teachers' Attitudes.* New York, New York: The Commonwealth Fund, 41 East 57th St., 1928, p. 247.

[43] Myers, Charles R. *Toward Mental Health in School,* Toronto, Ontario, Canada: The University of Toronto Press, 1939, pp. 6-7.

health guidance program exists in Kentucky schools, school administrators will be faced with many problems in the implementation of the *Code for Health and Physical Education* effective with the opening of the school year 1948-49. In order to assist the school administrator consideration has been given to some of the basic principles underlying the medical examination, the School Health Record of the State Board of Education, plans of organization for the examination, payment of medical services, time required for the examination, pre-examination requirements, instruction in the use of the Kentucky School Health Record and teacher assistance in the examination.

In relation to the health guidance program in the school mental tests, disposition of the school health record, follow-up, and cooperative services have been discussed.

SUGGESTED METHODS OF CORRELATION OF HEALTH INSTRUCTION WITH RELATED AREAS

Introduction. Teachers have never looked upon health instruction as a province restricted to a specialist trained in that particular field of knowledge. Since time immemorial, teachers have seized the opportunity to inform pupils of health facts whether or not stimulated by pupil interest. Health is so vitally a part of all living experience that it is impossible to limit its treatment to a course or a study outline. Whether or not planned, when health materials are introduced in a subject or course in the curriculum, it is known as health instruction in contributory subjects,[1] related areas,[2] or just simply health instruction by correlation.[3]

Turner, in his book, *Principles of Health Instruction,* defines correlation as,

> . . . . Health instruction presented incidentally while some other subject is being taught or . . . . the emphasis of previously learned health facts in connection with some other subject of instruction.[4]

He continues the discussion to say that there really are 3 different types of correlation which may be explained as follows:

1. *The application of health facts to life situations.* For an example, the pupil in social studies realizes that health has been an

---

[1] American Child Health Association. *Health Trends in Secondary Education.* New York, New York: 450 Seventh Ave., 1927, p. 65.

[2] American Association of School Administrators. *Health in Schools.* Washington, D. C.: National Education Association, 1201 Sixteenth St., N. W., 1942, p. 89.

[3] Williams, J. F. and Shaw, Fannie B. *Methods and Materials of Health Education,* New York, New York: Thomas Nelson and Sons, 1937, p. 225.

[4] Turner, E. C. *Principles of Health Education.* Second Edition. Chicago, Illinois: D. C. Heath and Company, 1939, p. 230.

important factor in the progress of groups of people in different areas and in different eras of the world. As the pupil has increased opportunity to read, he develops an appreciation for the value of mental and physical health in art and literature. In this type of correlation, the pupil sees and understands health as an aspect of living that makes its importance known in many and varied situations.

2. *Certain subjects contribute fundamental facts which lead to a better understanding or support the basic principles of health.* For an example, Laton in her experimental study of New York City junior high school pupils in which she correlated health instruction with biology found that, "Test results show that students who had studied biology possess greater ability to recognize statements of control measures for the various communicable diseases than possessed by those who have not studied biology."[5] Materials in these subjects point out health relationships and provide a practical application for what would have been isolated facts to a better understanding of health.

3. *Health facts and materials may be utilized as a basis for teaching fundamental skills such as language and arithmetic.* For an example, the English teachers' objective is to teach the application of the principles of English composition. As suggested by Gregg[6] by careful choice and presentation of subjects, the teacher can also acquaint the pupil with certain health principles.

If health facts or materials are employed in this manner, it must be done in natural situations which are meaningful to the pupil and are sustained by his interest. Thus a pupil is more likely to be interested if, as a part of his exercise in arithmetic, he is seeking to determine his average monthly gain or loss in weight.

Principles of Correlation. During the White House Conference on Child Health and Protection in 1930, correlation was discussed as a method of health instruction in the elementary school. Although intended as a guide to the teacher of the elementary school, these principles are applicable to the secondary school teacher.

> The essential relationship of health behavior to life should be preserved and further developed.
>
> In correlation, the center of focus should be on the child and his growth, not on subject matter.
>
> Correlation should be developed so as to make health more meaningful in all its relationships to life and to environment.
>
> Correlation should make for integration of instruction with behavior.

---

[5]Laton, Anita D. *The Psychology of Learning Applied to Health Education Through Biology.* New York, New York: Teachers College, Bureau of Publications, Columbia University, Contributions to Education, No. 344, 1929, p. 98.

[6]Gregg, Arlie E. "Correlating Health Instruction with English and History," *Ohio Schools,* Vol. 19, No. 10 (December, 1941), pp. 442-443.

There should be a readiness on the part of the child for learning which correlation may offer.

Consideration should be given the relative importance of contributions from the different angles.

Correlation should avoid the unnecessary repetition of knowledge already learned.[7]

Limitations of Correlation as a Method of Health Instruction. As observed by Oberteuffer,[8] the possibilities of correlation are definite but limited because of (1) the inability of the host area to provide all the health problems of the pupil and (2) the fact that not all the pupils will enroll in all areas in which the various health problems are considered. The teaching plan of health, therefore, must also include a direct approach through an organized course of health instruction in addition to correlation.

Another aspect of the situation discussed in the preceding paragraph is the observation of Bechtel[9] in a study of correlation of health instruction in junior and senior high schools in Logan County, Ohio. As a result of the analyzation of health content in textbooks employed in these two levels, it was the writer's contention that the greatest opportunity for health correlation was found in subjects taught in grades 9 and 10. The reason was obvious since general science, biology, and home economics were taught in these two grades. In each of these courses more than one-third of the total subject matter was applicable to health instruction, "or six times as much health material as is found in any courses offered in grades eleven or twelve."[10] The author suggested that since health materials were limited in the textbooks of the upper grades which in turn limited the opportunity for correlation, grades 11 and 12 should be a logical place for curriculum builders to introduce a special course in health instruction treating the subject matter of the lower grades of the high school from a different approach and with greater thoroughness.

The ability of a teacher to correlate health materials in related areas is dependent upon her qualifications and experience to teach in the host subject. It is self-evident that a teacher who is fairly keeping pace with the teaching subject and not too well possesed of the fundamentals in that subject will generally not be too successful in the correlation of health instruction. The antipathy of some second-

---

[7] American Child Health Association. *White House Conference on Child Health and Protection, Report of the Subcommittee on Health Education in the Elementary Schools,* 1930, p. 40. (Unpublished manuscript.)

[8] Oberteuffer, D. "An Eventual Development in Health Education," *Department of Secondary School Principals,* Vol. 22, No. 77 (1938), p. 35.

[9] Bechtel, P. C. *The Correlation of Health Instruction, An Experimental Study of Correlation of Health Instruction with Other Subjects of the Junior and Senior High Schools of Logan County, Ohio.* Columbus, Ohio: The Ohio State University, Master's Thesis, 1934.

[10] *Ibid.,* p. 84

ary school teachers to correlation may be, in part, explained on this basis.

When correlation is "forced," it loses its value as a method of health instruction. There is little health promotion when a teacher injects or "drags" into her subject unrelated health facts or material. Horn in his discussion of forced correlation makes this statement:

> Correlate when the material of health is essential to the study of any problem in any subject, or when some attitude, some knowledge pertaining to health is essential to the solution of that problem or the gaining of the proper skill in that subject then bring it in, otherwise avoid it as a plague.[11]

Failure of the School Administrator to Guide and Supervise the Teachers Who are Correlating Health Instruction with Related Areas. The task of making the school health program effective rests on the shoulders of the administrator. Where pupils, themselves, express their interests and needs to an alert teacher and the health materials are effectively correlated with the subject, exceptionally creative health experiences have been the result. This situation, however, is exceptional. If a casual basis of health instruction is to be replaced by an organized health instruction program, teachers must have an opportunity to plan and to work together.

In general, teachers are not entirely at fault for the failure to make correlation, as well as organized health instruction, effective in the school program. Teachers must of necessity adapt themselves to administrative policies, schedules, courses of study, standardized tests, and many other factor over which they have no control. The school administrator must, therefore, provide these opportunities for teachers to plan and to work together if he feels that health instruction in the school curriculum is worthy of his time and careful consideration.

Some of the problems inherent in administration, organization, and supervision that influence the quality of health instruction, whether as an organized course or through correlation, have been ably treated in *Health in Schools:*

> **Administrative policy**—In some instances the policy of the board of education and superintendent with respect to health education is not clearly defined. The health agencies within the school system may, under this policy or drift, do effective work, but the school program as a whole makes only incidental contributions to the health program. From observation it has been noted that health education permeates the entire instructional program when healthful living, not subject matter, is clearly recognized as one of the major goals of the educational program.
>
> **Organization**—Departmentalized subject matter plans, whether at the elementary or secondary school levels, do not encourage co-

[11] Horn, Ernest. *Health Education in the Curriculum.* Principles and Practice in Health Education. American Child Health Association, 1935, p. 175.

operative efforts in health education. In fact, no administrative plan or device works automatically to promote instruction. It is necessary constantly to examine the effect upon classroom activities of such commonplace things as fire drills, schedules, testing programs, promotion standards, marking systems, and classroom equipment. Upon the school administrator, particularly the principal, falls the responsibility of making administrative procedure an aid and not a hindrance to instruction.

Supervision—In recent years, instructional leadership has assumed increased importance as a function of school administrators. This fact is of importance to health education. Working with the committees of classroom teachers it is possible to prepare courses of study in which the health contributions of all subject areas will be developed. To provide teachers with bone-dry outlines of subject-matter-to-be-learned and then to expect an effective, integrated approach to healthful living is, to put it mildly, wishful thinging. Teachers also need to work in groups studying methods and materials dealing with health education if, in many instances, they are to overcome the deficencies of their preparation.[12]

Correlation of Health Instruction in Kentucky Secondary Schools. In the evaluation of data secured from a questionnaire survey of 163 Kentucky secondary school teachers, who attempted correlation with related areas, the author disclosed the following facts and practices:

1. Many schools employed correlation when it was impossible to secure a qualified teacher of health.
2. School administrators and teachers were not clear as to the meaning of correlation. Only 57 of 163 teachers were able to reproduce the main topics of health correlated in their subject or subjects and 10 health teachers correlated health with health.
3. In schools in which an organized health course was taught and correlation also practiced, there were indications that no effort was made on the part of the administrator to coordinate the two sources of health instruction in order to avoid duplication of effort.
4. Correlation was practiced in the following areas in the order of their frequency: biology, home economics, general science, science, physical education, and social studies. Mentioned less frequently but enough to be impressive were: chemistry, physiology, sociology, English, reading, psychology, safety, and vocational shops.
5. Of those teachers responding, 133 stated that correlation did not interfere with their teaching plan in the subject or subjects, while 15 maintained that it did.

[12] *Op. cit.*, p. 104.

6. Correlation consumed an estimated 2-36 per cent of the teaching time in the related area, or an average of 13.3 per cent for the 106 teachers who reported.
7. Nutrition, personal hygiene, and the prevention and control of communicable diseases were the leading health topics correlated. Other topics correlated less frequently included: first aid, sanitation, home nursing, child care, mental hygiene, structure and function of organs and systems, safety, alcohol and drugs, and community health.

Possibilities of Health Instruction Through Correlation. As previously mentioned, a questionnaire was sent through the school administrator to teachers who correlated health instruction. Of the respondents, 163 questionnaires contained sufficient data for study. Employing the response to the request for a list of health topics correlated as a criterion, 57 teachers were chosen and were asked to write a detailed exposition on how they actually correlated health facts and materials in their teaching subject.

With the aid of examples of correlation from periodicals, books, and the help of teachers in Kentucky secondary schools who have had experience in correlation of health instruction, it is hoped to present illustrations that will be of assistance to other teachers. The order of areas in which correlation has been and is being done has been selected on the basis of frequency of mention in the survey of Kentucky schools in 1947.

Biology. Meier[13] analyzed 4 textbooks in biology in common use and found that approximately 50 per cent of the materials in these books could be classified as health materials.

Chappelear[14] found that of three of the biology textbooks analyzed, approximately one-third of the total instructional matter was devoted to health material and of two other textbooks more than 40 per cent was given to health content. He stated, "As a whole, the biology textbooks devote a higher percentage of subject matter to health content than do textbooks of any other natural science analyzed."[15]

Chapplear classified the distribution of health content treated in these biology textbooks and found that food, digestion and nutrition, and the cause and prevention of disease were most fully treated.

---

[13] Meier, Lois. *Health Material in Science Textbooks. An Investigation of the Health Material in General Science, Biology, Chemistry, and Physics Textbooks.* New York, New York: Bureau of Publications, Teachers College, Columbia University, 1927.

[14] Chappelear, C. S. *Health Subject Matter in Natural Science,* Contributions to Education, No. 341. New York, New York: Bureau of Publications, Teachers College, Columbia University, 1929.

[15] *Ibid.,* p. 12.

Mental hygiene and psychology; cleanliness, personal and general; alcohol, tobacco, and drugs; air, ventilation and breathing; heart and circulatory system; posture and exercise; and first aid were next in order.

An analysis of reports submitted from 50 schools to the Division of Health Education of the American Child Health Association[16] indicated that the following health topics were correlated with biology: Interest in out-of-door nature activities, interest in life process, sound viewpoint of sex problems, interest in personal and public health, health habits, and more intelligent regulation of diet.

Bechtel found that approximately one-third of the total subject matter in biology textbooks related to health. He stated that,

> "There is considerable repetition of health material in biology that has been taught in general science. Although part of this repetition is needless, in many instances subject matter is approached from an entirely different viewpoint, making the repetition highly desirable."[17]

The possibilities of biology in health instruction are probably best discussed in *Health in Schools* and may be summarized as follows:

1. Biology develops the concept that all forms of live have a few common basic needs which must be met if life is to be sustained. The fundamental processes of digestion, assimilation, respiration, excretion, sensory stimulation, and muscular response are important in the maintenance of animal life and vicariously boys and girls gain a knowledge of the importance of their own fundamental processes.
2. The adaptations of an organism to its environment is another phase which holds implications to the pupil. Animals and plants are constantly adjusting and adapting themselves to the influence of their environment. Many of the adjustment problems of man are based on biological faults that have been created by him such as lack of sunshine, fresh air, and space for muscular activity.
3. A very important aspect of biology is the relation of man to microscopic organisms. As stated by Laton,

> "The biological generalization to which material relevant to communicable disease control can make the greatest contributions are those centering around the interrelationship of living things, and around parasitism as a way of living."[18]

Man has made tremendous strides in the past seventy-five years in the control and prevention of disease. In biology,

---

[16] American Child Health Association. *Health Trends in Secondary Education*, Division of Health Education, 1931, pp. 66-67.
[17] *Op. cit.*, p. 26.
[18] Laton, *op. cit.*, p. 27.

the pupil gains a knowledge of how man has combatted organisms and conditions dangerous to his welfare. A discussion of prevention and control of disease is suggestive of such important topics as antiseptics, asepsis, quarantine, immunization, sanitation, and health supervision.

4. If the pupil wishes to know how best to care for his body, he must know how it functions. The transition from a study of the anatomy and physiology of the rats, cats, guinea pigs, and rabbits to the human body is not too radical a one to assist him in a better understanding of the function of his own body.
5. Organisms require food for growth, repair and energy but the food cannot be used unless digested. Health, too, depends upon the right choice of food and the presence of vitamins in the food digested.
6. A study of the nervous and endocrine systems shows how interdependent they are in the normal functioning of man.

A review of the studies of Meier and others as well as the summarized statements from *Health in Schools* indicates that biology is an important area for correlation in health instruction. In fact, it has been suggested by the Committee on Health in Schools of the American Association of School Administrators that "if there is no special course in health in the high school curriculum, the emphasis upon such teaching in biology classes should be increased."[19]

A study of the following examples of correlation of health instruction in biology by Kentucky secondary school teachers indicates the variety of health topics considered:

> In biology, facts and principles are presented in relation to the problem of living. Since man is the most important of all living things and all other living things are studied in relation to man, his health and well-being are of prime importance.
>
> In our very first unit in biology we study ways of overcoming superstitions and fake treatment of disease. Students bring to class advertisements of many patent medicines and we study them for truth in advertising and for safety to health. Scientific instruments and their effect upon health are discussed. Special attention is given to training in the use of the microscope.
>
> We study campcraft and camping sites in the United States and all the recreational opportunities offered in the study of plants, animals and gardening.
>
> Man's health depends upon proper foods and proper eating habits. Students study scientific methods in the production of foods, correct selection of food according to body needs, and the digestive machinery of man. This latter topic includes the study of the structure of the teeth and their care, and a knowledge of the diseases that attack the digestive track. For healthy bodies we must

[19] *Health in Schools, op. cit.*, p. 100.

know the life habits of microbes, the diseases they cause, and methods of protecting the body.

In one unit, we study ways of preventing accidents and first aid for accidents when they do occur. This leads up to a study of the circulatory, respiratory, muscular, and skeletal systems. Effects of tobacco and other narcotics are studied.

Man's adjustment to his enviroment and his relation to lower animals might well be considered health instruction. Other health problems studied are: The Behavior of Man and the Function of His Nervous System; The Senses of Man and the Organs Involved; The Effect of Physical Health Upon Mental Health; The Glands That Affect Mental Health; The Laws of Heredity and Their Effect Upon Social Problems.

In conclusion, we might say that of the twelve units taught in our biology course, the student is receiving health instruction in ten of the units.

—(Mrs.) Edwin Charles, Frankfort High School, Frankfort, Kentucky

We introduce our study of health by showing the steps that may be taken to combat superstition and fake treatments. We look up magazine reports and medical histories as to some of the fake treatments that were used and are used now. The class brings in reports of all the superstitions they can think of relating to diseases and cures.

We study the part played by the pioneers in medicine and their fight against beliefs of their times and the contributions they made; finally, we analyze present day superstitions and patent medicines as to their medical value. Further, we take trips to the health department and clinic to find out some of the community's health problems and to bring about an awareness of the part each one must play in the control of communicable diseases. We keep our own vital statistics as to days lost by pupils due to illness and this practice helps to teach the value of prevention. We visit the disposal and water plants to find out how the city takes care of its sanitation.

We use a unit devoted to eating for good health in which we plan diets, keep records of our meals and their health value. With the high cost of food, we study the value of cheaper foods to show that health does not depend upon the choicest cuts of meats or most expensive vegetables. We have found the charts prepared by the American Meat Institute most helpful in this discussion. We use experiments with white rats to show the effect of different diets upon them. This helps the students to see the effects of proper and improper diet.

We devote some time to the study of mental health and discuss what forces inside and outside the human body affect mental health. We compare the present day living with that of fifty years ago to emphasize the reason we must strive harder to keep mentally healthy today.

—J. W. Johnson, Dunbar High School, Lexington, Kentucky

Home Economics. Since home economics has as its general objective instruction in what people should know to make a healthful and comfortable home, it has many contributions to offer in health education—especially in the field of nutrition, preparation for family life, home and social living. In fact, many areas in home economics

and health education are so closely interrelated that correlation is largely a matter of working out the procedures.

Home economics has taught home care and sanitation from its earliest beginning. When a member of the school staff in Kentucky schools, the home economics teacher is either in complete charge of the lunchroom or cafeteria, or supervises the preparation and serving of hot lunches in the school. Units on the care of the sick in the home are not so frequent as to be standard in Kentucky schools, but are taught by the home economics teacher in cooperation with the American Red Cross or the visiting nurse and frequently by the visiting nurse. Home economics has a most important function in Kentucky, especially in the consolidated schools of the rural areas. As matters stand, the home economics teacher is the only means in many localities of instruction in healthful home practices, nutrition, home nursing, child care, and sanitation, yet it is surprising how many schools do not include a qualified home economics teacher on the school staff.

A review of sources[20] which discuss the correlation of health instruction in home economics indicates that this area presents many and varied possibilities. In fact, Bechtal stated that of the textbooks analyzed by him, 50–90 per cent of the subject matter was devoted to health instruction. A composite list of health topics from these sources, without duplication, is given below:

1. Development of home and family life.
2. Child care and development.
3. Sanitation and prevention of disease.
4. Food and nutrition.
5. Home care of sick.
6. Personal adjustment to home, school, and community.
7. Personal hygiene.
8. Recreational sources in home and community.
9. Interest in community and national health.
10. Development of the school lunch as an educational activity.
11. Problems of school housekeeping.
12. Consumer education in terms of household supplies and home remedies.
13. Adjustments to standards of living.
14. Healthful attitudes toward clothing.

[20] Bechel, *op. cit.*, p. 58; *Health Trends in Secondary Education, op. cit.*, p. 67; *Health in Schools, op. cit.*, pp. 96–98; National Education Association. *Health Education.* Washngton, D. C. Joint Committee on Health Problems, National Education Association and the American Medical Association, 1201 Sixteenth St., N. W., 1941, pp. 225–227.

15. Cooperative projects with the departments of science and agriculture in relation to problems in home and school living.

Examples in the correlation of health instruction in home economics have been chosen from 6 expositions. The first example is of a course entitled "Home Economics," while the second includes separate phases of home economics arranged as courses:

Home Economics

In Home Economics, there are very few units, if any, in which health is not taught in some form or other. In the unit on good grooming, we study the health and care of the teeth, hair, finger nails and entire body, health and cleanliness in relation to being well groomed.

We study our personalities—how to get along with other people—how to adjust ourselves at home, at school and elsewhere. How we may develop mentally and physically into pleasing or unpleasing persons. We also study the health and habits of small children and their relationship to the rest of the family.

In our foods and nutrition units, we teach foods and nutrition in relation to body health—how to select and plan nutritious meals as well as meals that are appetizing, of good color combination and of good texture, foods that are suitable to different age members of the family, how to prepare food to preserve food value, how to serve food attractively and graciously, table etiquette, food preservation and the effects of micro-organisms on food, calories, vitamins, minerals, and deficiency diseases.

We learn the fundamentals of first aid. We study the anatomy and physiology of the body, common emergencies, how to apply bandages, wounds, shock, heat and cold injuries, artificial respiration, poison and methods of moving injured persons.

In room improvement and decoration, we consider designs of wall coverings and other furnishings, furniture and its arrangement, artificial and natural lighting, colors, ventilation, usability, and safety and convenience in relation to mental and physical health.

We think of our physical and mental health in choosing clothes for ourselves and for smaller children.

In practically all units, there are some safety precautions to be taught in the use of equipment and other materials.

These are some of the methods in which we correlate health to home economics. There are still other ways that I have not mentioned here.

—(Mrs.) Mary Campbell, Jamestown High School,
Jamestown, Kentucky

High School Clothing Courses

The comfort of well-fitted, appropriate garments as well as the value of the hygiene of clothing and good grooming are stressed in all of the courses. Likewise, the need for correct posture while sewing is shown to be just as important as when wearing clothing to make the most pleasing appearance.

In the first semester of clothing, after orientation, the material itself is stressed. Whether in the construction of garments or the purchase of ready-to-wear ones, the problems of identification for

proper use and cost to the consumer are basic. The definite need for coordination to develop correct sewing techniques is automatically impressed on the student.

Clothing II emphasizes that the wise choice of garments necessitates a three-fold consideration of style, color and texture. Continued study of materials and development of skills allow the student to attain self-desired outcomes.

Clothing III gives greatest stress to techniques. The correct use of trimmings to increase the attractiveness of garments, the climatic and economic problems of fur-buying as well as current events in the textile world round out this last elective course in clothing which most students choose for the satisfaction of learning to do for themselves.

Foods and Nutrition

In Food and Nutrition classes we contribute to the health education of the pupils by the study of the physical surroundings found in the laboratory as to convenience, safety, and sanitation. Emphasis is made by special instruction in how to arrange the furniture orderly, to take the proper care of foods materials and books, to light an oven, to clean an icebox, to wash and dry dishes and towels, to store foods safely, and to dispose of waste materials correctly. The students are requested to wear clean aprons, hair nets, and have clean hands when they are working with foods.

We study and learn to plan and prepare meals suitable for the family. The pupils learn rules for selecting a healthy diet; examine the nutritive values of foods; discuss the effect of heat and water on the nutrients; and learn the principles of cookery best suited to food substances.

We examine foods found in our markets; compare their value as to cost; plan and prepare menus suitable for persons in this community. The most common diet deficiency found in our community is compared to that found in other localities and the foods needed to prevent poor nutrition are emphasized.

Table service and good manners are stressed in the service of foods to improve the poise of the pupil and physical comfort.

—(Miss) Blanche I. Clarke, J. M. Atherton
High School, Louisville, Kentucky

General Science. In Chappelear's study of the health content in 5 general science textbooks, he found that 4 of the 5 books in common use devoted an average of approximately 37 per cent of the total content to health and materials. The fifth textbook consigned approximately 25 per cent of its content to health material. An analysis of health topics by Chappelear indicated the following were most frequently treated in the 5 textbooks:

1. Food, nutrition and digestion.
2. Disease, cause and prevention.
3. Air, ventilation and breathing.
4. Cleanliness, personal and general.
5. Clothing, hygiene and care.
6. Safety, personal and property.
7. Mental hygiene and psychology.

8. Eyes, structure and defect.
9. Heart and circulation.
10. Alcohol, tobacco, and drugs.
11. Health agencies.
12. First aid.

Bechtel, in his analysis of general science textbooks, stated approximately one-third of the total subject matter was applicable to health instruction.

In an analysis of 10 expositions furnished by Kentucky teachers in the correlation of health instruction in general science, the following health topics appeared most frequently:

1. Light, heat, and ventilation.
2. Water supply.
3. Communicable diseases prevention and control.
4. Food and nutrition.
5. First aid.
6. Safety.
7. Structure and function of the human body.
8. Posture.
9. Personal and community health.
10. Alcohol, tobacco, and drugs.
11. Recreation.
12. Correction of physical defects.
13. Weather and climate.
14. Patent medicines.

There are about as many methods of treating the health topics as there were expositions. For an example, the water supply was treated in relation to the soil, methods of purification, sanitary precautions, relation of impure water to disease, effect on human body, visits and study of the city water plant and how large communities secure their water. Several examples of correlation in general science are presented below:

> The science of public health rests upon medical science and upon the sciences of chemistry and engineering applied to such matters as disinfection and drainage and other physical aids to sanitary conditions.
>
> In the first unit on air and man's uses of it, we study the composition and influence of the air on the human body. Water is studied as a necessity and a luxury to the human body. We also study methods of purifying the water supply, diseases carried to the human body, and ways of testing the water supply. Then too, we discuss keeping clean with water.
>
> We also learn about heat and light, accenting the health side. We describe best heating systems and proper ventilation of our

schools and homes. The care of the body in relationship to proper clothing is discussed in this unit. Much time is spent on the effects of light on the eyes and the proper care of the eyes. The common defects of vision and correction of the defects are also studied. And too, light is studied as a means of recreation and pleasure.

We have one unit on work in which we learn how to work for pleasure, or how to enjoy our work. Foods necessary for certain types of work, the rest period the body needs during work, and work with relation to our health are discussed.

What are living things like? In this unit we use charts on foods and stress foods that are necessary to health. We keep a record of number of calories we take in and they are compared with the number each person needs. We continue to study how to improve living things. At this point, we take up heredity, enviroment, and training. We study how to improve the family.

One of the most interesting things we learn about is the human machine. We learn about the skeleton, the heart, and trace the flow of blood. With a classmate, each pupil demonstrates how first aid should be given in drowning or gas poisoning. We study special health laws and regulations that are enforced by our local board of health. We use a first aid book with our text. We spend several days on the treatment of burns, electric shocks, cuts, bleeding, and infected wounds. Then, we learn effective ways of fighting diseases. Individual, family, and community health are given special attention. Special reports are given on inoculations, sanitation, and vaccination. Lists of good and bad habits in health are made for bulletin board.

The study of human conservation is an important subject. We find and bring to class articles from papers and magazines on health. We learn the value of play and recreation for everyone. It is important to our daily life that we spend some time in having fun. Our class members select hobbies that are enjoyable and at the same time increase knowledge. We collect scrapbooks, write science dramas, plan a balanced aquarium, and make a study of our national parks.

—Knox Central High School, Barbourville, Kentucky

In our course, General Science, a part of the time is devoted to the study of health. Five units of the twenty taught in the course are directly related to health. They include such topics as: Food for the Body, Physical Condition of the Body, Diseases, Heat, and Water Supply. Three other units dealing with Fire, Weather and Relation of Living Things are closely related to the health and welfare of the individual, so we may say that those units in our course are also correlated with the health instruction program.

We study the structure of the human body—its bones, muscles, glands, and organs. A great deal of emphasis is placed upon correct posture. The posture of individual students is studied and suggestions are made for improvement. We study ways of keeping the respiratory organs, heart, kidneys and skin in good physical condition. In this unit, we have opportunity to study the effects of alcohol and tobacco upon the body. Prevention of accidents is stressed and training is also given in first aid treatment.

One of our main health units is "How The Body Uses Foods." The different food needs of the body at different ages are studied. Since we do not have a school lunch program and most of the students obtain their lunches at nearby restaurants, emphasis is placed on proper selection of food. Each student studies his diet for one week and, if it does not follow all the rules of a good diet, makes suggestions for improving it.

A special study is made of communicable diseases, including their causes and methods of control. This leads to a study of normal

body defenses, vaccines, anti-toxins and serums. Since malaria has spread since the war, we spend extra time on the subject of insect-carriers, the diseases that they transmit and methods of controlling them.

Heat is essential to body health and comfort. One entire unit is devoted to methods of heating our homes. We also study refrigeration of foods.

A pure water supply is definitely a health problem. Methods of obtaining a water supply and ways of purifying water are studied. At this time we study our own city water supply and purifying system.

—(Mrs.) Edwin Charles, Frankfort High School
Frankfort, Kentucky

Science. A study of expositions by Kentucky secondary school teachers who correlated health instruction with science showed that the treatment of health topics were very similar to biology and general science. For an example, the following appeared fairly frequently as health content in science courses: personal hygiene; water supply; sanitation; first aid; posture; foods and nutrition; clothing; communicable disease control; alcohol, tobacco, and drugs; and heating, lighting, and ventilation. An example of correlation including some of the health content mentioned above is presented in the following exposition:

The eighth grade science course includes units of work in these topics:

1. Sanitation
2. Pure water
3. Care of skin and hair
4. First aid

The ninth grade includes units in the following:

1. Skeletal structure and physiology
2. Body temperature—use of thermometer
3. Bacteria
4. Foods, calories, and vitamins
5. Home construction, heating, lighting, ventilation

Physiology and Health Readings are elective in the science department for grades ten, eleven, and twelve.

The biology courses contain a section on physiology. In studying plants, analogies are drawn between their cell structure and life needs and those of human beings.

Chemistry classes study the composition of air, water, drugs, cosmetics, deodorants and personal hygiene, safety, and fire prevention

—(Miss) Helen Peil, Shawnee High School,
Louisville, Kentucky

Social Sciences. The social science group such as civics, economics, government, current events, commercial law, and history courses, should provide an opportunity to discuss problems related to community organization to protect and promote health. Some problems that should contribute to a better knowledge of group action to improve living conditions might include:

1. State and community organization to protect the health of the individual.
2. Health service provided in the school.
3. Health as an economic asset to the worker.
4. A comparison of the sanitary conditions of the period studied and modern times

Gregg[21] states that history can and should be an important factor in the formation of health concepts and suggests the following possibilities for correlation of health in history:

1. Olympic festivals of the Greeks.
2. Private and public life of the Roman.
3. The training of the Spartan soldier.
4. Simple outdoor life of the American Indian.
5. The building of the Panama Canal and the measures taken to protect workers and soldiers from yellow fever.
6. Recreation of the southerner prior to the War between the States.

The following examples of correlation of health instruction in social sciences should suggest further methods of correlation:

Social Studies

In the ninth grade social studies classes there are units of work on health and recreation in the community that include the following points:

1. Public attitude toward health and disease.
2. Disease prevention.
3. Water, food, and air.
4. Garbage disposal.
5. Care of physically ill.
6. Care of mentally ill.
7. Care of the handicapped.
8. Individual responsibility in community health.

In the eleventh grade health correlation occurs in units on the following points:

1. Pure food and drug act.
2. Meat inspection.
3. Community health and sanitation laws.
4. Liquor and drug problems.

In the twelfth grade correlation with health occurs in units on such problems as these:

1. Public welfare.
2. Public health.
3. Mental health.
4. Community safety.
5. The home, the basis of a community.

All pupils subscribe for the "American Observer" which is discussed once a week in class. Current news on health and safety are included in the discussions.

—(Miss) Helen Peil, Shawnee High School
Louisville, Kentucky.

[21] Gregg, Arlie E. "Correlating Health Instruction with English and History," *Ohio Schools*, Vol. 19, No. 10 (December, 1941), p. 443.

History

The aspect of health most appropriately presented in the history classes is that of public health which includes the battles against epidemic diseases that have been won and those still going on, government food inspection, regulation of patent medicines, the nature of diseases of malnutrition such as rickets and pellagra and their presence in low-income areas of the United States, questions of slum clearance and socialized medicine. The methods of presenting these subjects are class discussion, illustrative films, class reports or papers on biographies of such men as Dr. Walter Reed and Dr. William Gorgas.

Health topics present themselves naturally in the United States history class in the fight to conquer yellow fever in the building of the Panama Canal, the pure food and drug acts of Theodore Roosevelt's Socialist Party, the story of the Tennessee Valley Authority and proposals of socialized medicine and Federal aid to backward areas growing out of the depression of the 1930's.

In Ancient History, also, health topics often spontaneously arise. For example, it was recognized very early that a pure water supply was necessary; that long before the Roman aqueducts the cities of Assyria piped pure water from a distance; that the disastrous plague in Athens during the Peloponnesian wars was caused by overcrowding, lack of pure water, and unsanitary streets; and that the undrained marshes of Rome caused the prevalence of malaria in the declining years of the Empire.

In Medieval History similar opportunities arise. The high mortality rate, the recurrent plagues and the unsanitary cities can lead to a lesson in public sanitation.

One interesting discussion of the conquest of puerperal fever arose from an inspection of an old Litany in the Prayer Book of Edward VI, and the question, "Why did they change the prayer for 'women in the **perils** of childbirth' to one for 'women in childbirth', as we say it today?"

The history class is not the place where a health lesson should be introduced for the first time, but rather a place where its application can be made in a new context.

—(Mrs.) Emily T. Hopkins, Margaret Hall School, Versailles, Kentucky

Physical Education. Physical education is not generally considered from the standpoint of subject-matter relationship but rather an activity relationship in the correlation of health instruction. As stated in *Health Education,*

> The opportunities in physical education for health instruction cover many areas of healthful living. The areas most frequently met are: conservation of vision, good ventilation, sensible dressing, personal cleanliness, good housekeeping, good mental hygiene, sanitary use of the school plant and equipment, maintenance of normal body temperature, prevention of organic strain, control of infection, and the prevention of accidents.
>
> The situations occur in the gymnasium, the dressing and shower rooms, the swimming pool, on the playground, in the home, or wherever physical education activities take place. The range of possibilities is great. The alert teacher interested in helping children to live more healthfully will find challenging occasions for guidance.[22]

[22] *Op. cit.,* p. 211.

Some of the specific activities inferred by the general headings of the statement quoted from *Health Education* are self-evident. Conservation of vision may easily include safety precautions in sport activities such as eyeglass protectors, non-shatterable lenses and removing eyeglasses during play. Sensible dressing involves the removal of sweaters and heavy clothing during exercise and putting on sweat clothes or a sweater after exercise. Personal cleanliness can be taught through the use of showers, clean costumes, and washing hands after play. Good housekeeping may include placing shoes and clothing in the locker in orderly fashion, keeping equipment in a specific place, and making the orderliness of the locker room a personal responsibility.

Physical education may contribute, under good leadership, much to the mental health such as playing according to rules of the game, accepting the officials' decision, cooperating with the team and those in leadership, being tolerant of teammates' mistakes or unskilled performance, and accepting defeat and victory as past experiences.

Specific examples of correlation of health instruction in the activities of physical education by teachers in Kentucky secondary schools furnish additional suggestions of methods of correlation:

> At Margaret Hall School the whole staff are concerned to some extent in health education as all help to carry out those rules whose chief purpose is to promote the good health of the students. It is an important plank in the policy of the school that the reasons for all rules should be understood. Therefore, the health rules of the school are explained to the girls both in groups and as individuals.
>
> The health rules in diet are an example. A well-balanced diet is served by a qualified dietitian. All girls except those who are overweight are required to help themselves to a portion of everything served at each meal and eat all that they put on their plates. Girls are excused from eating anything for which they have an allergy. Girls who are overweight are permitted to omit desserts and either bread or potatoes. To understand such a rule it is necessary to learn the nature of a balanced diet, of allergies, and the importance of weight to health.
>
> The school doctor gives a physical examination to all students soon after they enter in the fall. This is followed up by regular weighing and measuring by the infirmarian and by routine examinations for skin infections before the girls are allowed to go into the swimming pool. The school doctor also reports epidemics in the town and the reasons are explained to the girls when they are not allowed to go to public places for awhile. Typhoid shots are recommended and no girl is allowed to go swimming in the river on picnics who has not had typhoid inoculation.
>
> Cleanliness is emphasized by the Sisters in charge of the corridors and by the physical education director who requires a soap and water shower before entering the swimming pool.
>
> Early in the year an orthopedic surgeon visits the school and gives a posture examination. His recommendations are followed up by remedial exercises. A film on posture is shown and charts and posters used.

Safety measures against injuries and overstrain are emphasized in all sports. The students are encouraged to avoid overexhaustion in swimming and playing games. All injuries are reported to the infirmary immediately and given the proper treatment. Training and drill in the rules and skills of a sport as the key to the prevention of accidents is emphasized. A course for lifesavers in swimming is given.

—(Miss) Lillian Brown, Margaret Hall School
Versailles, Kentucky

When new students register in our school and report to physical education for the first time, there is much to be done in the way of acquainting them with the gym, shower and locker rooms, equipment, playground, lavatories, and the medical room.

One of the first topics we start talking about is healthful living, and we keep emphasizing this the entire school year. Clean uniforms (suit, shoes, socks) are required every few days—a certain number of showers must be taken—lockers are kept clean —use of foot pan to prevent athlete's foot—correct amount of clothing for playground use as well as gym use—proper ventilation—gym floor clean from dust and dirt—exclusion of those who have colds—first aid treatment—check on height and weight—and safety (in locker and shower rooms, playground, gym, and halls). In physical education the desire to be ready and fit for participation in sports is found to be one of the strongest motives for the observance of health rules.

Posture is another subject that is carried on through the year's program. Since many opportunities arise for such a study, we try to stress this as we go along. All of us realize that posture is important in this particular sport, that certain game, etc. Exercises for posture are given at various times. Dancing helps to bring about good posture. Marching is another means whereby we put emphasis on posture and its importance.

Diet and food combinations are important to those students who wish to lose or gain weight, and to those who have skin trouble. High school girls are concerned about their personal appearances, therefore they study these topics most carefully. We deal with these as individual problems.

Leisure time, and how to use it to good advantage, is brought out and discussed through many of the activities. The importance of it in our present-day living, and also in future years, is made conscious. We talk about the various activities (individual and team), quiet games, dancing, and stunts, and their carry-over values.

Family and school relationships are made possible throughout the entire school year by parents visiting the schools—Dad's Night —P. T. A. gatherings—final meetings at the close of semesters (graduating seniors, parents, and teachers work together here).

—(Misses) Betty Mumpower and Margaret Cates,
J. M. Atherton High School, Louisville, Ky.

Chemistry. According to Chappelear, chemistry textbooks varied in health content from about 4–14 per cent.[23] Health topics treated in chemistry books included foods, nutrition and digestion; safety, personal and property; clothing, hygiene and care; cleanliness, per-

[23] *Op. cit.*, p. 17.

sonal and general; disease, cause and prevention; air, ventilation and breathing; alcohol, tobacco, and drugs; first aid; and industrial hygiene. A review of courses of study by Chappelear in regard to health content in chemistry, showed as great a variance as in the case of chemistry textbooks. The author stated that chemistry should offer a splendid opportunity for teaching health subject matter concerning foods and that most textbooks on chemistry tended to repeat simple facts which should have been treated in general science or biology.

Health Trends in Secondary Education,[24] based on a report from 50 schools, found that the following health content was included in the instruction of chemistry:

1. Better selection and care of food.
2. Knowledge of coal gas dangers.
3. Knowledge in the treatment of burns.
4. Knowledge of acids and their neutralization.

Two examples of correlation in chemistry are presented. Both indicate a broader scope in health content than is usually provided in the general treatment of this subject in the school. Conventional lines have been abandoned to provide the pupil a wealth of practical and functional health knowledge.

> In the first days of the course we discuss and plan for economy of study time, emphasizing the importance of its relation to sleep, eating, lighting, and recreation. During this same orientation period we learn the proper handling of equipment and reagents in the laboratory to minimize accidents, the location of first aid materials and their use for minor cuts or burns.
>
> Within the content of the course proper as given in 1946-1947, the following units were included:
>
> 1. Chemistry of the individual dealing with foods and nutrition: disease, drugs, and medicine; cosmetics, and clothing.
> 2. Chemistry of the home treating preservation of food, fuels and heating, sanitation, construction materials, paints and home decorating.
> 3. Chemistry of the community, including water purification, sewage disposal, and industrial chemistry.
>
> —(Miss) Sibyl C. Knoth, The Louisville Collegiate School, Louisville, Kentucky

> In the teaching of high school chemistry we should be concerned with general education. Since **all** of the pupils will be consumers, one of our principal aims is to equip pupils with those skills which will enable them to become wise consumers of goods and services. As consumers we are bombarded daily through radio, magaznie, newspaper, streetcar, bus and billboard advertising to buy many varieties of goods. The average citizen has become an easy target because he buys for reasons that are not related logically to the uses that he makes of certain goods. Many of these products have a direct effect upon the consumer's health. Among these products are laxatives, headache remedies, cosmetics and preservatives in foods.
>
> Pupils are given the opportunity to study these types of goods through such references as:

[24] *Op. cit.*, p. 67.

1. **Consumers' Research Bulletin,** a monthly magazine published by Consumers' Research, Inc., Washington, N. J.
2. **Consumers' Research Test Manual,** a laboratory manual giving the procedure for performing chemical tests on various goods and the accompanying chemical reactions, published by Consumers' Research.
3. **Test It Yourself,** a laboratory manual of chemistry experiments with consumer applications published by Scott, Foresman and Co., Chicago.
4. **Living Chemistry** and **Laboratory Problems for Living Chemistry,** a textbook and manual emphasizing the practical applications of chemistry and published by Ginn and Co., New York.

In the study of laxatives pupils first discuss the evils of common practices in getting rid of constipation. They learn that many laxatives which are used as purgatives frequently produce additional constipation because of the fact that the large intestine is cleared of all waste matter; that constipation is not cured by use of a drug but by getting proper food, rest and exercise; that when one has pain in the abdomen a doctor should be consulted since there is danger of appendicitis.

The many laxatives are then classified. In this instance the active ingredients for each brand are listed.

Phenolphthalein is the active ingredient of some laxatives and when used habitaully ulcers and skin eruptions may result.

Another laxative is the saline type. Included in this group are Epson salts, milk of magnesia, citrate of magnesia, Glauber's salts and phosphate of soda.

Other forms of laxatives which may become harmful when used habitually are the cascara and the bulk-producing type.

Pupils receive practice in reading labels of all laxatives which they bring to class. They identify unacceptable drugs and later subject the laxatives to chemical tests to determine the active ingredients. They learn to test for the presence of oils, phenolphthalein, sulfates, magnesium, and phosphates. Presence of any one of the last three substances indicates that the laxative is of the saline type.

Pupils are encouraged to do much classroom research on the problem and a small classroom library is available for that purpose. They are required to make written reports of their findings. A similar procedure is followed in the study of headache remedies.

The American public is probably exploited most by the manufacturers of cosmetics. Many of the advertised claims of the manufaucturers cannot be fulfilled and in addition certain harmful chemicals are added to some cosmetics. Pupils are given such general references as **Skin Deep** (M. C. Phillips, The Vanguard Press, New York), and **100,000,000 Guinea Pigs** (Kallet and Schlink, The Vanguard Press, New York) from which they secure information concerning such undesirable practices as the use of poisonous bromo acid dyes for coloring some lipsticks, the use of abrasives in dentifrices, the use of harmful aniline dyes in eyelash and eyebrow preparations. They also learn that most hair removers are sulfide preparations and will dissolve the skin as well as the hair; that most hair dyes contain harmful metallic salts and that some hand and face lotions contain carbolic acid which is also harmful to the skin.

Pupils are given the opportunity to test many brands of face powder for the presence of starch. From their reading, they have learned that starch is used as a filler by face powder manufacturers. However, starch has a drying effect on the skin and is a skin

irritant. Some people are allergic to starch, developing colds as a result of inhaling the particles of powder.

Pupils also test many brands of toilet soap for free alkali since the alkali is hard on the hands. Lotions are analyzed for carbolic acid and lipstick for bromo acid dye. Since many dentifrices contain pumice or some other abrasive, pupils test brands of dentifrices for abrasives.

In the study of preserved foods pupils become acquainted with chemicals that are used to preserve foods. The following chemicals are studied:

1. Sodium sulfite—used in preserving such ground meats as sausage and hamburger.
2. Borax and boric acid—used to preserve crackers, biscuits, ice cream cones and cheese.
3. Salicylic acid and sodium benzoate—used to preserve jams, jellies and catsup.
4. Formaldehyde—used to preserve fresh milk.
5. Saccharin and coal tar dyes—used in soft drinks.
6. Chlorine and nitrites—used to bleach flour.

Pupils secure samples of sausage and hamburger for determining the presence of sodium sulfite. The use of this preservative indicates that a low quality meat was used to make the products. The sulfite tends to produce a rich red meat thus deceiving the buyer. In like manner a positive reaction in testing crackers, ready mixed biscuits and cheese for borax or boric acid indicates that inferior substances were used to produce the goods.

Pupils are given the opportunity to test sweet milk and chocolate milk for the percentage of butterfat present. The Babcock milk testing apparatus is used in performing this test. Since many pupils prefer chocolate milk to sweet milk, this test helps to change their eating habits because all chocolate milk is really skimmed milk with little or no butterfat. Some milk distributors use formaldehyde to prevent rapid souring of the milk. Since formaldehyde is harmful to the body, pupils also learn to test samples of milk for the presence of formaldehyde.

The use of salicylic acid and sodium benzoate or benzoic acid in preserving jams, jellies and catsup constitutes another undesirable practice. These chemicals when consumed habitually in foods cause headaches and upset stomachs. Pupils also learn to test foods for these preservatives.

Pupils test soft drinks for the presence of saccharin and coal tar dyes because manufacturers often substitute these substances for sugar and vegetable dyes. Neither saccharin nor coal tar dyes contribute any nutrients to the body when consumed. The coal tar dyes produce bright, alluring colors and the bright color is often the basis for choosing a drink.

Pupils test samples of flour for such bleaching agents as chlorine and nitrate because it has been shown that these substances destroy vitamin A which is present in flour.

Through these experiments pupils become very sensative to the need for reading labels carefully as they or their parents purchase various commodities.

—William N. Jackson, William Grant High School,
Covington, Kentucky

Physiology. This subject in the secondary school presents many possibilities for correlation in health education. Structure and functions of the human body provide a better understanding of the basic principles in first aid, nutrition, and personal hygiene. The following

exposition demonstrates the possibilities of health instruction in physiology as a high school course.

> Our course in Physiology emphasizse the hygiene and health side throughout. In the units including digestion, circulation, respiration, nervous system, and muscles we give attention to the harmful effects of alcohol, tobacco, and narcotics. Physiology becomes valuable insofar as it helps the students live healthier lives.
>
> In the study of the muscles and skeleton, we learn the proper use of bones and muscles in good posture, the value of good posture to appearance and good health, the care of the feet, and the importance of exercise in building a growing, healthy body. Also here, or in the unit on circulation we study the heart as a muscle and learn to know its limitations.
>
> In the unit on foods and digestion, we give much time to the study of nutrition as a contribution to health. We stress the importance of the proper food in building good tissues, the proper calorie requirement, the value of vitamins and minerals, and the importance of eating a good breakfast. At this time, too, we learn to appreciate why it is desirable to be happy and cheerful at all times, especially at meal times, and how this contributes to the healthful working of all the systems of the body.
>
> The proper amount of sleep and rest are discussed in connection with the study of the nervous system, as well as self-control and how good habits of mind contribute to mental health. It is here we can show that health—how one thinks, feels, acts, and behaves—refers to the whole of life.
>
> Knowledge of disease is considered important, especially from the standpoint of helping the young person realize the dangers that confront his health, growth, and development. In the study of cancer, its early symptoms and diagnosis, we can emphasize the importance of a periodical physical examination. In the information on tuberculosis and some other communicable diseases, we can point out that the individual may contract these when resistance is low.
>
> Charts, models and films are invaluable aids in teaching the health side of this course. The film on each unit summarizes and emphasizes the objectives so that the student takes with her a mental picture. Many other sources are used, especially in the unit including posture and in that on nutrition. The reading of periodicals such as **Hygeia** is encouraged.
>
> We feel that our course in Physiology provides guidance for the intelligent care of the body and contributes much to health.
>
> —(Miss) Mabel Slack, J. M. Atherton High School
> Louisville, Kentucky.

English. Gregg[25] offers an excellent treatment of the subject of correlation of health instruction with English. In the high school, English is generally taught in terms of drama, composition, oral composition, debating, and outside reading. Plays that make use of natural situations and real characters are of great value in building up health attitudes. By careful choice and presentation of subjects, in written composition, a teacher can acquaint the pupil with certain health principles. The same situation is true in oral composition.

[25] *Op. cit.*, pp. 442-443.

For an example, pupils may be asked to give a four-minute talk on "How Our School Heating System Works," "What We Owe Pasteur," or "How To Make a Torniquet." Subjects for debates may include: "Resolved: That Milk for Drinking Purposes Should Always Be Pasteurized;" "Resolved: That the State Should Pass a Compulsory Vaccination Law;" and "Resolved: That the School Should Organize a School-Community Health Council." Additional activities were suggested by the author such as letters written to request health pamphlets, editorials written for the school paper on health topics such as: "Make Use of the Showers," "A Good Noon Lunch," "Health Fads," "Hobbies," and "Accidents at School." Finally, outside readings on general health subjects, or the lives of scientists and individuals who have overcome health handicaps to succeed in life, are good correlatives of health education and English assignments.

Other Related Areas In Which Correlation of Health Instruction Is Attempted. As so well stated in *Health in Schools,* "Incidental health correlations will arise in practically every subject area in the school. The teacher should become conscious of these opportunities and utilize them educationally."[26] It is true that some subject areas lend themselves more easily to the treatment of health material because of more immediate relationship, but there is no subject area taught in the school which is not in some way connected with some aspect of health. The following exposition on correlation of health instruction in agriculture and physics bears witness to this statement:

Agriculture

During the present school year much time will be devoted to instruction in health in the teaching of vocational agriculture. This instruction will be given directly and indirectly as applied to human health. The phases of vocational agriculture that will be correlated to health instruction are:

a. Farm Animals. This will be a rather intensive course, during which approximately thirty class periods will be devoted to the subject, "Feeding Farm Animals." At this time a study will be made of the kinds of nutrients needed by livestock, requirements of a good ration, kinds of minerals to feed, and how to supply vitamins. Also included in this course will be instruction in diseases and parasite control. Several class periods will be spent in covering general problems, such as, what infectious (contagious) diseases are; the nature of parasites; moisture in relation to parasites and diseases; importance of farm sanitation; use of medicine and vaccines; use of disinfectants; and other problems which will concentrate on individual livestock enterprises.

b. On-the-Farm Instruction. During the year each boy is visited on the farm at frequent intervals. Here is the real opportunity to not only give the boys instruction in agriculture and check on

[26] *Op. cit.,* p. 90.

their progress, but also to point out needed improvements around the home to make it a more healthful and enjoyable place to live. Many boys have home improvement projects, so it is an easy matter for the agriculture teacher, in a diplomatic way, to suggest and supervise these improvements.

c. Farm Shop. About thirty class periods will be spent on farm shop. Most of the instruction will be on the use of wood-working tools and construction of farm equipment, made principally of wood. This knowledge and skill will aid in the prevention of accidents that otherwise might occur in the handling of such tools. Next year the agriculture students in farm shop will receive several hours in farm water supply and sanitation.

d. Gardening. Some of the boys will have improvement projects in gardening and sometime during the school year a study will be made of the various kinds of vegetables that should be included in the garden, the home storage of vegetables and food preservation. A part of this instruction in food preservation will be received in the school-community cannery.

In conclusion, the aim of vocational agriculture is to train present and prospective farmers for proficiency in farming. Improvement in health of farm people is one means of reaching this objective.

—Robert Goodpaster, Elkhorn High School
Frankfort, Kentucky

Physics

In the study of light pupils discuss the importance of illumination for the proper care of the eyes. They later determine the candle power of 25, 40, 60, 75 and 100-watt bulbs for the purpose of computing the amount of illumination that these bulbs provide for various activities in the school and the home.

From physics textbooks they compile a list of activities usually performed in the home with the corresponding requirements in illumination to avoid eye strain. The table below serves as an illustration:

Activity	Required Illumination
Reading and writing	10-20 foot candles
Fine print	20-50 foot candles
Critical reading	50 foot candles
Sewing	
On dark cloth	20-40 foot candles
On dark cloth	20-40 foot candles
Fine needlework	50 foot candles
Kitchen	5-10 foot candles
Laundry and workshop	10-30 foot candles
Living room	10-20 foot candles
Bedroom	10-20 foot candles
Hallways	1-2 foot candles
Stairways	2-5 foot candles
Recreation	5-10 foot candles

Pupils then compare the illumination in their homes with this table. They do this by drawing plans of each room indicating where pieces of furniture are located in each room and the distances of bulbs from pieces of furniture. The wattages of the bulbs

are also recorded. They then convert the wattages to candle power by reference to the first experiment in which they determined the candle power of various bulbs. For example, the illumination on a desk in a pupil's home is determined from the following formula:

$I = \frac{C.P.}{d^2}$ .....where I=illumination, C.P.=candlepower, and d=distance of bulb from object.

The candle power of the bulb (60-watt) is 65 and its distance from the writing desk is 3 feet, thus $I = 65/3^2$ or 7.2 foot candles. Since the standard for reading is 10-20 foot candles the pupil can request his parents to substitute a 75-watt bulb for the 60-watt bulb.

Pupils read concerning the effect of other objects on illumination. Such factors as color of walls, wallpaper and drapery, type of wall (smooth or rough surface) and type of lighting (direct or indirect) are discussed to determine their effect on illumination.

One class became so concerned about the proper care of the eyes that they decided to test the vision of all pupils in the school. A Snellen eye chart was used and a large number of pupils were found to have faulty vision. The parents of these pupils were informed concerning the results of the test. Most of the pupils were examined by ophthalmologists and glasses prescribed.

—William N. Jackson, William Grant School
Covington, Kentucky

Summary. Since the beginning of organized instruction in the schools, teachers have always seized the opportunity to teach health facts in connection with their teaching subject. This practice has become known as correlation of health instruction in related areas, or health instruction in contributory subjects. Since health instruction by correlation is a phase of health education in the school, this method of teaching was discussed from the standpoint of types of correlation, principles, limitations, and present practices of correlation in Kentucky secondary schools.

Examples and information concerning correlation of health instruction in related areas secured from books, periodicals and expositions on correlations were presented in the following areas or subjects: biology, home economics, general science, science, social studies, physical education, chemistry, physiology, English, agriculture and physics.

Bibliography

I. BOOKS, PAMPHLETS, AND THESES.

Arey, Margaret S., *Improvised Equipment for the Physically Handicapped.* New York, New York: Joint Orthopedic Nursing Advisory Service of the National Organization for Public Health Nursing and the National League of Nursing Education, 1790 Broadway, 1944.

Bechtel, P. C., *The Correlation of Health Instruction, An Experimental Study of Correlation of Health Instruction with Other Subjects of the Junior and Senior High Schools of Logan County, Ohio.* Columbus, Ohio: The Ohio State University, Master's Thesis, 1934.

Blos, Peter, *The Adolescent Personality, A Study in Individual Behavior.* New York, New York: D. Appleton-Century Company, Inc., 1941.

Byrd, Oliver E., *Health Instruction Yearbook 1943.* Stanford University, California: Stanford University Press.

Chappelear, C. S., *Health Subject Matter in Natural Science,* Contributions to Education, No. 341. New York, New York: Bureau of Publications, Teachers College, Columbia University, 1929.

Cromwell, Gertrude E., *The Health of the School Child.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1946.

Deaver, George G., *Fundamentals of Physical Examination.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1939.

de S. Bruner, Edmund, *Community Organization and Adult Education,* A Five-Year Experiment. Chapel Hill, North Carolina: The University of North Carolina Press, 1942.

Fulks, R. B., *A Plan for Health in the Schools.* Louisville, Kentucky: Kentucky State Department of Health, 620 South Third Street, 1947.

Fulks, R. B., *Compendium of Public Health Problems for Teachers.* Louisville, Kentucky: Kentucky State Department of Health, 620 South Third Street, 1947.

Gardner, Warren H., *Instructions for Conducting Audiometer Tests.* Washington, D. C.: American Hearing Society, 1537 Thirty-Fifth Street, N. W., 1945.

Horn, Ernest, *Health Education in the Curriculum,* Principles and Practice in Health Education. American Child Health Association, 1935.

Laton, Anita D., *The Psychology of Learning Applied to Health Education Through Biology.* New York, New York: Teachers College, Bureau of Publications, Columbia University, Contributions to Education, No. 344, 1929.

Leonard, Margaret, *Health Counseling for Girls.* New York, New York: A. S. Barnes and Company, 1944.

Macnutt, Edna G., *The Hard of Hearing Child in School.* Washington, D. C.: American Hearing Society, 1537 Thirty-Fifth Street, N. W.

Meier, Lois, *Health Material in Science Textbooks, An Investigation of the Health Material in General Science, Biology, Chemistry, and Physics Textbooks.* New York, New York: Bureau of Publications, Teachers College, Columbia University, 1927.

Morrison, W. R., and Chenoweth, L. B., *Normal and Elementary Physical Diagnosis.* Philadelphia, Pennsylvania: Lea and Febiger, 1928.

Mufford, Eleanor W., *Eye Health in Secondary Schools.* New York, New York: National Society for the Prevention of Blindness, 1790 Broadway. (Reprint from *Public Health Nursing,* October, 1941.)

Myers, Charles R., *Toward Mental Health in School.* Toronto, Ontario, Canada: The University of Toronto Press, 1939.

Nyswander, Dorothy B., *Solving School Health Problems,* The Astoria Demonstration Study, Fourth Edition. New York, New York: The Commonwealth Fund, 41 East 57th Street, 1942.

Rankin, Rome, *A Survey of Physical Education for Secondary Schools in Kentucky with a Suggested Program.* Lexington, Kentucky: University of Kentucky, Doctor's Dissertation, 1947.

Rood, Elma and Lingham, Gertrude. *Taking Care of the Family's Health, A Teaching Guide for Rural Classes.* Madison College, Tennessee: The Rural Press, 1938.

Stafford, George T., *Preventive and Corrective Physical Education.* New York, New York: A. S. Barnes and Company, 1928.

Strang, Ruth M., *Counseling Techniques in College and Secondary School.* New York, New York: Harper and Brothers, 1937.

Strang, Ruth M., *The Role of the Teacher in Personnel Work,..* Revised Edition. New York, New York: Bureau of Publications, Teachers College, Columbia University, 1935.

Tritt, Jessie A., *The School as a Unit in a Program for Better Hearing.* Washington. D. C.: American Hearing Society, 1537 Thirty-Fifth Street, N. W.

Turner, E. C.. *Principles of Health Education,* Second Edition. Atlanta, Georgia: D. C. Heath and Company, 1939.

Walker, W. F., and Randolph, Carolina R., *School Health Services, A Study of the Programs Developed by the Health Department in Six Tennessee Counties.* New York, New York: The Commonwealth Fund, 1941.

Wickman, E. K., *Children's Behavior and Teachers' Attitudes.* New York, New York: The Commonwealth Fund, 41 East 57th Street, 1928.

Williams, J. F., and Shaw, Fannie B., *Methods and Materials of Health Education.* New York, New York: Thomas Nelson and Sons, 1937.

Wyatt, Clarence Hodges, "The Status of Health and Physical Education in the Secondary Schools in Kentucky (1945-46)," *Kentucky State Department of Education Bulletin,* Vol. 14, No. 5, July, 1946.

II. EDUCATIONAL PUBLICATIONS

A Guide for Planning Facilities for Athletics, Recreation, Physical and Health Education. Chicago, Illinois: The Athletic Institute, Inc., 209 South State Street, 1947.

American Association of School Administrators, *Health in Schools.* Washington, D. C.: National Education Association, 1201 Sixteenth Street, N. W., 1942.

American Child Health Association, *White House Conference on Child Health and Protection, Report of the Subcommittee on Health Education in the Elementary Schools, 1930* (Unpublished manuscript.) New York, New York: 450 Seventh Avenue.

American Child Health Association, *Health Trends in Secondary Education.* New York, New York: 450 Seventh Avenue, 1927, 1931.

American Public Health Association, *Educational Qualifications of Health Educators.* New York, New York: Committee on Professional Education, 1790 Broadway, 1943.

Health Education Council, *Suggested School Health Policies.* New York, New York: 10 Downing Street, 1945.

Illinois State Department of Education, *A Basic Plan for Health Education and the School Health Program.* Springfield, Illinois: Centennial Building, July, 1944.

Illinois State Department of Education, *Health and Physical Education Syllabus,* Circular No. 301, Springfield, Illinois: Centennial Building, 1939.

Kentucky State Department of Education, *Code for School Sanitation Survey* (prepared by the State Departments of Education and Health). Frankfort, Kentucky: February 18, 1946.

Kentucky State Department of Education, "Getting the Health and Physical Education Program Under Way in the Elementary School," *Educational Bulletin,* Vol. 15, No. 3, May, 1947.

Kentucky State Department of Education, *Questions and Answers Concerning the Health Code.* Frankfort, Kentucky: Division of Health and Physical Education, 1947.

Kentucky State Department of Education, *Regulations Concerning School Grounds and Schoolhouse Construction.* Frankfort, Kentucky: Division of School Buildings and Grounds, 1946.

Kentucky State Department of Education, "Standards for School Buses, Laws and Regulations for their Operation," *Educational Bulletin,* Vol 15, No. 10, December, 1946.

Kentucky State Department of Health, *Communicable Disease Manual.* Louisville, Kentucky: Division of Communicable Disease, 620 South Third Street, 1947.

Kentucky State Department of Health, *Instructions for the Grading of Food Handling Establishments and Hotels.* Louisville, Kentucky: Division of Foods, Drugs and Hotels, 620 South Third Street, 1946.

Kentucky State Department of Health, "Parent-Teacher Number," *Bulletin of the Department of Health,* Vol. 19, No. 11, June, 1947.

Kentucky State Department of Health, *State Plumbing Code.* Louisville, Kentucky: Bureau of Sanitary Engineering, Sixth and Main Streets.

Kentucky Tuberculosis Association, *The Physically Below-Par Child, Changing Concepts Regarding His Care and Education.* Louisville, Kentucky: 620 South Third Street, 1940.

Louisiana State Department of Health, "The Telebinocular Test as a Method of Screening," *Bulletin of the Department of Health,* Vol. 33, No. 2, June, 1942.

Metropolitan Life Insurance Company, *The School Health Program.* New York, New York: School Health Monograph, No. 12, 1942.

Metropolitan Life Insurance Company, *What Teachers See.* New York, New York: School Health Bureau, Health and Welfare Division. (Accompanied by film strips, *Teacher Observation of School Children,* sound and color. Furnished without cost to school administrators and teachers.)

National Commission on Safety Education, *Minimum Standards for School Buses.* Washington, D. C.: National Education Association, 1201 Sixteenth Street, N. W.

National Education Association, *Health Education.* Washington, D. C.: Joint Committee on Health Problems of the National Education Association and the American Medical Association, 1941.

National Society for the Prevention of Blindness, Inc., *An Eye Health Program for Schools.* Publication 398, New York, New York: 1790 Broadway.

National Society for the Prevention of Blindness, Inc., *How to Test for Visual Acuity.* New York, New York: 1790 Broadway.

National Society for the Prevention of Blindness, Inc. *Screening, Eye Examinations and Follow-up,* Publication 443. New York, New York: 1790 Broadway, 1945.

Ohio Public Health Association, Advisory Committee on Health Education, *A School Health Policy for Ohio.* Columbus, Ohio: 1575 Neil Avenue, 1941.

Ohio State Department of Education, *Ohio High School Standards, 1946,* Health, Physical Education, Recreation and Safety. Columbus, Ohio, 1946.

Ohio State Department of Education, *School and Community Health Education.* Columbus, Ohio: Sponsored jointly by the Ohio State Departments of Health and Education, 1946.

III. PERIODICALS

"A Suggestion for a Good School Health Program," (Editorial) *Journal of Health and Physical Education,* Vol. 15, No. 4, April, 1945.

"Definition of Terms in Health Education," Committee on Terminology, *Journal of Health and Physical Education,* Vol. 5, No. 10, December, 1934.

Gregg, Arlie E., "Correlating Health Instruction with English and History," *Ohio Schools,* Vol. 19, No. 10, December, 1941.

Jahr, H. M., "Streamlining School Health Service," *Hygeia,* 23, September, 1945.

Kerr, Lorin E., "Coordinating School-Community Health Education," *Ohio Schools,* Vol. 22, No. 4, April, 1944.

Nyswander, Dorothy B. "The Astoria Study: Educational Implications," *Journal of School Health,* Vol. 12, No. 1, January, 1942.

Oberteuffer, D., "An Eventual Development in Health Education," *Department of Secondary School Principals,* Vol. 22, No. 77, 1938.

"Proposed Lighting Standards," *Nation's Schools.* Vol. 21, No. 2, February, 1938. (Mineographed copies available from Division of School Buildings and Grounds, State Department of Education, Frankfort, Kentucky.)

Rogers, J. F., "Health Education and Health Service in Schools," *The Journal of the American Medical Association,* Vol. 109, September 11, 1937.

Sellery, C. M., "Organizing the School Health Program," *Hygeia,* Vol. 20, September, 1943.
Strang, Ruth, "Forward to More Effective Health Education," *School and Society,* Vol. 57, No. 1487, June, 1943.
Wheatley, George M., "The Astoria School Health Study: Medical Aspects," *Journal of School Health,* Vol. 12, No. 1, January, 1942.

IV. MISCELLANEOUS

Board of Trustees of the Highland Park Graded Common School District, No. 46 vs. McMurtry, 184 S. W. 390, 169 Ky. 457, 1916; Hill vs. Beckers, 188 S. W. 766, 171 Ky. 703, 1916.
Kentucky Revised Statutes, 1946, Sections 97.010, 97.020, 156.160, 212.210, 212.470.
Kentucky State Department of Education. *Kentucky State Board of Education Adopts Code for Health and Physical Education.* New release, December, 1946.
Kirkpatrick Admx. Bronaugh vs. Murray, et al., 294 Ky. 715 (June 15, 1943).
Ruling of Attorney General, March 19, 1947, on file in the State Department of Education, Division of Health and Physical Education, Frankfort, Kentucky.
Thacker vs. Pike County Board of Education, 301 Ky. 781 (March 15, 1946).

FERRY PUBLISHING COMPANY
FRANKFORT, KENTUCKY
PRINTERS TO THE COMMONWEALTH OF KENTUCKY