EVALUATION OF A RURAL SCHOOL HEALTH EDUCATION PROJECT

II. A STUDY OF THE EFFECTIVENESS OF A RURAL SCHOOL HEALTH PROGRAM IN IMPROVING THE SCHOOL ENVIRONMENT[1]

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A SAFE and healthful environment adjustable to the physical needs of pupils is essential in any school. Hygienic, comfortable surroundings not only provide a background for efficient and effective school work, but also are conducive to healthful living practices. It is the community's responsibility to make provision for an environment which will fulfill these requirements, and the teacher's responsibility to adjust the environment to individual needs.

The traditional red schoolhouse of the past around which much romance has been built was a place in which little provision was made for healthful living. Today, as never before, states are recognizing their responsibilities to children who will spend their early school life in these small schools. Many states are reorganizing schools into larger administrative units where changes can be effectively accomplished, but at the same time are increasing financial assistance to the smaller schools in order to equalize educational opportunities. They are recognizing the fact that many children will know no other school than the small one during the important early years of development. Federal figures show that despite the trend toward larger units in 1934 there were 162,953 small one and two-teacher schools still remaining in the United

[1] This is the second of a series of papers on evaluation studies which have been made of the school health program in Cattaraugus County through grants from the Milbank Memorial Fund. Appreciation is extended to Mr. Nelson M. Fuller, Sanitary Engineer, Cattaraugus County Department of Health, for assistance in analyzing material for this paper, and to Mr. Gilbert A. Farwell, District Superintendent, for help on state and local school policies.

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States with an enrollment of approximately 4,635,147 children.[3] In New York State alone, where centralization of schools is growing steadily, there were 6,719 one and two-teacher schools during 1933-1934.[4]

An important part of the school health program in the small rural schools of Cattaraugus County, New York, has been directing efforts toward the improvement of the school environment and its use. It is the purpose of this paper to study some of the changes that have taken place during a six-year period, 1931-1937, both from the standpoint of the factors that produced the changes and the results. This study for the most part is based on an analysis of information on the sanitation of buildings and health activities which is collected annually by the public health nurses during their spring check-up in the schools of the County (*see* Figure 1). Reports from 170 one and two-teacher schools will be used. These reports were selected from 234 reports in the school year 1931-1932, and from 203 reports in the school year 1936-1937, and represent schools from which complete reports were received for the two periods.

As a perspective to the present study a brief picture of rural schools previous to 1931 is revealing. Out of 157 schools from which sanitary reports were gathered in the school year 1929-1930, only twenty-five schools, or 15.9 per cent, had first aid kits; forty-three schools, or 27.4 per cent, served hot lunches; 123 schools, or 78.3 per cent, supplied soap; 100, or 63.7 per cent, provided toilet paper; and twelve, or 7.6 per cent, used paper cups. Conditions even more startling than these are described in the RURAL SCHOOL SURVEY OF NEW YORK STATE published in 1922.[5] This survey showed common towels in use in 61.0 per cent of the schools studied; first aid

3 Cook, K. M.: REVIEW OF CONDITIONS AND DEVELOPMENTS IN EDUCATION IN RURAL AND OTHER SPARSELY SETTLED AREAS. Bulletin No. 2. Washington, D. C., Department of Interior, Office of Education, 1937.

4 These figures were obtained from the New York State Department of Education.

5 The Joint Committee on Rural Schools: RURAL SCHOOL SURVEY OF NEW YORK STATE. Ithaca, New York, 1922.

CATTARAUGUS COUNTY SCHOOL HEALTH SERVICE

Building and Sanitary Report and Health Activities

Supervisory District No._____
Town_____ School No._____ Trustee_____ Address_____
PRINCIPAL OR TEACHER_____ Enrollment_____

LIGHTING AND SEATING
Number of windows on Front_____ Rear_____ Right_____ Left_____
How many windows will open?_____ How many are screened?_____
Shades: Dark Light Single Double mounted (circle correct answers)
Seats: Single Double Adjustable Movable (circle correct answers)
Are seats arranged for best light?_____ Are they in good condition?_____

ROOMS
Smoky ceilings Glossy blackboards Draperies covering windows (circle correct answers)
Are walls painted or papered a light soft shade?_____ Do shade trees prevent proper light in room?_____ Are there artificial lights?_____ Kinds
Kerosene Gas Electric Semi-indirect electric (circle correct answers)

TOILETS
Flush Privy Chemical Septic (circle correct answer) Is odor from toilets noticeable in schoolroom?_____ Is toilet paper provided?_____ Is it in place?_____ Are toilet stools clean?_____ Are they cleaned regularly?_____

GROUNDS
Free from litter Adequate size Well drained (circle correct answers)
Is there playground equipment?_____ If so, is it built sturdily?_____

HEATING AND VENTILATING
Common stove_____ Jacketed heater_____ Other (specify)_____
Is foul air accumulation evident upon entering room?_____
Is there a cellar?_____ Is heater located in cellar?_____
Has school a thermometer?_____ Are readings taken at desk height?_____

WATER SUPPLY
Circle correct answers in all of the following:
Spring Dug well Driven well Drilled well Village
If spring water is used, is it Piped to school? Carried in containers?
If pump is used, is it Hand? Power? Is drinking apparatus clean?
Type of drinking apparatus: Pail Tank or stone crock with faucet
Tank with bubbler Fountain Individual cups Paper cups

HAND WASHING
Is handwashing equipment clean?_____ Is running water system of handwashing employed?_____ Is running hot water available?_____ Circle any of following that are present: Lavatory Wash basin Cake soap Liquid soap Powdered soap. Is there a mirror?_____ Is it at height for pupils' use?_____
Are individual towels used?_____ Are they paper towels?_____

REPAIRS NEEDED
What are the outstanding needs in sanitation and equipment for health protection?_____

IMPROVEMENTS
What improvements have been made in building, sanitation and playground equipment during past school year?_____

BOOKS
List all health texts and supplementary readers: (use back if necessary)_____

FIRST AID
Is there a first aid kit?_____ Adequately supplied?_____

HOT LUNCHES
Was hot lunch served during the year?_____ If not, state reason_____
_____ If so, for how long_____ How many pupils had hot dish regularly while hot lunches were served?_____
Method: Cooked at school Hot jar Thermos (circle correct answer)

INSPECTION
Do you have morning inspection?_____ Kind: Teacher Selected pupils Each child his own (circle correct answer)
Have you a school club which includes health activities?_____

INSTRUCTION
Is health instruction given regularly?_____ This should include correlations, health projects, and practices of healthful living throughout the school day. (specify)_____

WEIGHING
Is there a scale in the school?_____ If not, do you use one in the neighborhood?_____ How often were pupils weighed?_____
Were parents notified of weight?_____

Please note on back of this sheet ways in which the School Health Service can be of help to you in planning your program for next year.

Date Inspected_____

_____
Public Health Nurse

Fig. 1.

kits in only 10 per cent; and lighting, heating, and sanitary conditions appallingly bad.

FACTORS INFLUENCING ENVIRONMENTAL CHANGES

The changes which have taken place since these earlier years can be attributed to several factors, perhaps the most important of which has been increased State aid. Beginning with the school year 1931-1932, public school monies from the State of New York have been apportioned and paid to each district employing one teacher at the rate of $1,500 minus a sum of money equal to four mills for each dollar of actual valuation of the taxable property of the district. This is the maximum amount which any one-teacher school not contracting for the instruction of grade pupils may receive. In actual practice districts usually are not spending the full $1,500, in which case the State aid is the difference between the amount of the expenses and the sum represented by four mills per dollar of actual property value. In 1930-1931 the maximum amount was $1,400 with the same deductions and in 1929-1930, $1,300.[6] In 1928 and earlier the amount was very much less and was based on district valuation. This amount of State aid makes possible, through careful and intelligent planning, progressively better schools.

The actual bringing about of improvements depends upon the human factor. According to the State Education Law[7] a district superintendent of schools has the power and is invested with the duty to "direct the trustees of any district to make any alterations or repairs to the schoolhouse or outbuildings which shall in his opinion be necessary for the health or comfort of the pupils." The five district superintendents of Cattaraugus County have accepted this responsibility and have done much to improve the schools through long-time planning with the trustees, of which there is one

6 ————: EDUCATION LAW. Albany, New York, The University of the State of New York, 1936. Section 491, No. 3.

7 ————: EDUCATION LAW. Albany, New York, The University of the State of New York, 1936. Section 395, No. 5.

for every one-teacher school. Persuasion and education, rather than coercion, have been the methods employed by the superintendents in working for improvements. They often have used the technical assistance of the Cattaraugus County School Health Service and the Cattaraugus County Department of Health, most especially the public health nurses and the sanitary engineer. They also have been aided by the teachers who through their daily contact with the local community and through their educational program frequently are able to stimulate a desire for improvements.[8]

An early activity of the school health education project, established in the County through grants from the Milbank Memorial Fund in the summer of 1931, was to enlist the help of committees of rural teachers in the preparation of a school inventory form. This inventory contains questions on the school environment and its use and has been instrumental in focusing attention of local groups on their needs. Provision is made for checking conditions twice a year over a three-year period, a plan which aids a teacher in watching progress year by year and helps a new teacher in surveying the needs as seen from her own point of view and that of her predecessor. Frequently the pupils help to take this inventory.

The sections of the inventory deal with sanitation; heating, ventilation, and lighting; room arrangement; cleanliness; safety; school lunch; weighing and measuring program; school program and health; individual health behavior at school and at home; and home environment. The schools are encouraged to select a few problems on which to work each year, and are given assistance in meeting these problems.[8] Teachers are helped to see that the improvement of an environmental condition, such as the water supply, is not just a matter of physical change, but also an opportunity for vital educational experiences on the part of the pupils.

[8] Grout, R. E.: HANDBOOK OF HEALTH EDUCATION, A Guide for Teachers in Rural Schools. New York, New York, Doubleday, Doran and Company, Inc., 1936.

Grout, R. E.: A Project in Rural School Health Education. Reprinted from The Milbank Memorial Fund *Quarterly Bulletin*, July, 1933, xi, No. 3, and from the *Quarterly*, April and October 1934, xii, No. 2 and 4; January and April, 1935, xiii, No. 1 and 2.

The building and sanitary reports and the reports on health activities referred to previously are tabulated in the office of the school health service. The findings are summarized yearly, and the results are made known from time to time to those working in rural schools. Each year, in addition to the attention given by nurses and teachers to local problems, special emphasis may be placed on some county-wide condition which needs improvement, such as first aid kits, screens, or lighting. County-wide campaigns for one particular problem to the exclusion of all others, whether it be one connected with the school environment or with some other phase of school health, have been avoided.

In view of these favorable conditions for making the school environment both healthful and comfortable one might expect to find ideal situations in the 190 small rural schools still open in Cattaraugus County. Perhaps such would be the case if energies of all concerned had been concentrated on these problems only. This obviously is an impossibility. However, it is anticipated that this study will help to renew efforts to make needed changes through directing attention once more to weaknesses, and pointing to accomplishments which have been made possible as a result of concerted action.

CHANGES IN THE SCHOOL ENVIRONMENT AND ITS USE

Some difficulty was experienced in summarizing the building and sanitary reports and reports of health activities from which the following figures for the most part were obtained. It has been necessary to omit a number of items entirely on account of the ambiguity of the answers. A few questions were changed during the six-year period, thus changing the meaning of the answers. In general only those questions which give evidence of being answered adequately and consistently both in the spring of 1932 and the spring of 1937 will be used. Sources of information other than the above will be explained as they are brought into the summaries.

Water Supplies, Drinking, and Cleanliness Facilities. The small

rural school ordinarily depends upon a spring or well water supply. A well preferably should be located in the school building or on the school grounds. Spring water may be piped from a neighboring hillside. In an ideal situation both running hot and cold water are provided. In practice these are not found in most rural schools at the present time. Equipment for both cleanliness and drinking which is reasonably satisfactory from a sanitary point of view is required within the financial limitations of the school.

Information obtained from the sanitary reports is incomplete in respect to the sources of water supplies in Cattaraugus County, but reports from the public health nurses made at the time they collected samples of water for laboratory examination in the spring of 1937 give a fair picture of conditions at that time. One hundred and forty-four of the 170 schools have their own supply while sixteen schools obtain water from private supplies. (Reports from ten schools are uncertain.) One hundred and eight of the school supplies are from driven or drilled wells, three from dug wells, twenty-three are from springs, and two from municipal supplies. (Reports from eight schools are uncertain).

Regular bacteriological examination of all rural school water supplies twice a year was begun in the fall of 1936 at the instigation of the County Department of Health. 22.3 per cent of the supplies on which single samples were obtained were unsatisfactory. Until a more adequate system of follow-up can be provided for retesting and for making sanitary surveys at the sources of the supplies these figures cannot be considered conclusive.[9]

9 The problem is made more complex by the fact that many samples of water are obtained from driven wells equipped with pitcher pumps. Since samples of water collected from such pumps are apt to be contaminated it is difficult to interpret these laboratory findings. In the case of spring supplies, previous work carried on in the County has shown that springs located in the most inaccessible spots, and therefore unquestionably free from any human pollution, show evidence of colon organisms in sufficient numbers to indicate an unsatisfactory water for domestic consumption. This may be due to salamanders which inhabit the shale formations from which springs are ordinarily developed in this County. *See:* Hassler, W. G.: Salamanders and Water Hygiene. New York, New York, American Museum of Natural History. Reprinted from *Natural History,* 1932, xxxii, No. 3, pp. 303-310.

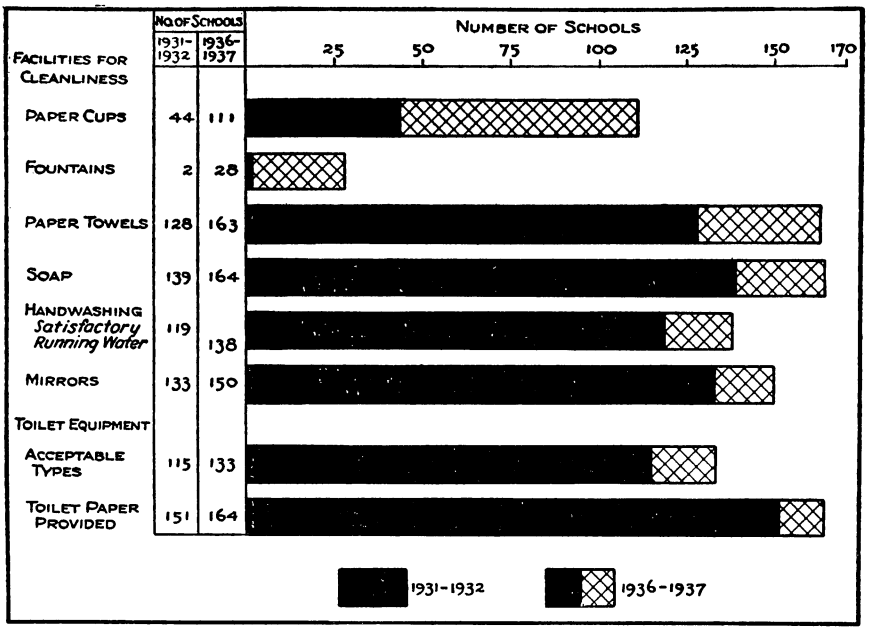


Fig. 2. Comparison of cleanliness facilities and toilet equipment in 170 rural schools in Cattaraugus County in the spring of 1931-1932 and 1936-1937.

Types of drinking apparatus have shown considerable improvement in the 170 schools during the six-year period (*see* Figure 2). Schools with paper cups have increased from forty-four to 111, and those with fountains from a running water supply have increased from two to twenty-eight. Every school reports the use of individual cups in 1937 while in the fall of 1931 ten of the 170 did not have them. In 1937, reports for 136 schools indicate that 62.5 per cent of the schools were supplied with water coolers, stone or metal containers with faucets, for dispensing water. 9.6 per cent of the schools still take their drinking water from a pail.

In this northern climate it seems desirable to have equipment for both drinking and handwashing within the school building. Many schools have added small rooms to their buildings in which are located well or spring water taps together with lavatory equipment. Others have built additions for toilet and lavatory.

Types of handwashing equipment will vary according to the

source of the water supply. In some schools hands may be washed directly under the pump. However, lavatories have increased during the six-year period from 46.2 per cent to 72.7 per cent (the latter is based on 154 reports). The old wash basin, so often a menace to cleanliness, has decreased in about the same ratio as lavatories have increased. Soap is now found in practically every school, whereas in 1932 only 139 of the 170 schools reported a soap supply (*see* Figure 2). The water cooler when placed on a shelf over a lavatory provides an efficient arrangement for a running water system of handwashing. In 1937, 138 schools reported washing hands under running water and in 1932, 119 schools reported a "clean, satisfactory arrangement of handwashing."

Mirrors placed at a level for children's use are helpful in stimulating neatness of appearance. Schools with mirrors have increased from 133 to 150 in the six-year period. With a little effort there is no reason why every school should not have at least one mirror.

Paper towels have become almost universal. In 1937 only five schools reported no paper towels as against forty in 1932 (*see* Figure 2). All of these five schools reported the use of individual towels in 1937. This is a far cry from the common towel in 61 per cent of the schools surveyed by the State fourteen years ago.

Toilet Equipment. Acceptable types of toilets for rural schools, provided they are of the correct design, properly installed, in good repair, and suitably maintained, are septic closets, which may or may not be connected with a flush system, and chemical toilets. The privy is not considered acceptable in Cattaraugus County where climatic conditions in winter make it undesirable and where funds are available for better types of toilets. However, in some supervisory districts no great effort is made to substitute a better type in schools which probably will be closed permanently in a short time, especially if the registration in these schools is small.

Between 1930 and 1932 the schools were very active in installing improved types of toilets. Among the 170 schools there were fifty-

five privies left in the spring of 1932. By 1937, privies were reported in thirty schools and the type of toilet was uncertain for seven other schools. A study of school registrations for the year 1936-1937 shows that twenty-three of these thirty schools had fewer than ten children. Acceptable types of toilets increased in proportion to the decrease in privies.

At the time of the last survey a number of toilets appeared to need attention. Odor was noticeable in the schoolroom from one of the chemical types and sixteen of those with septic tanks. Ten out of these sixteen schools are in one supervisory district where a number of poor installations were made prior to 1930. One hundred and forty-six of the 170 toilets were reported by the nurse as clean in 1932, and 152 as clean in 1937. Toilet paper was lacking in eighteen schools in 1932 and four schools in 1937 (reports from two additional schools were uncertain).

Heating and Ventilation. One of the most unsatisfactory conditions in rural schools is that of heating and ventilation. From December 1926 to May 1929 the New York State Commission on Ventilation made a detailed study of rural school ventilation in Cattaraugus County "with reference to heating conditions in the classroom and the incidence of respiratory illness."[10] The Commission reported:

> Conditions of general overheating in the classrooms, and very poor lateral distribution of temperature and cold floors were found. Overheating was most noticeable in the case of rooms heated by the so-called jacketed stove and least so in rooms heated by ordinary unjacketed stoves. The furnace heated rooms were intermediate in this respect. Distribution of temperature was most even in the case of furnace heated rooms and least so in the rooms with ordinary stoves. Twenty-five per cent of the observations among the latter showed differences in excess of thirteen degrees when the seasonal average temperatures at various desks about the room were compared. Fifty-five per cent of the observa-

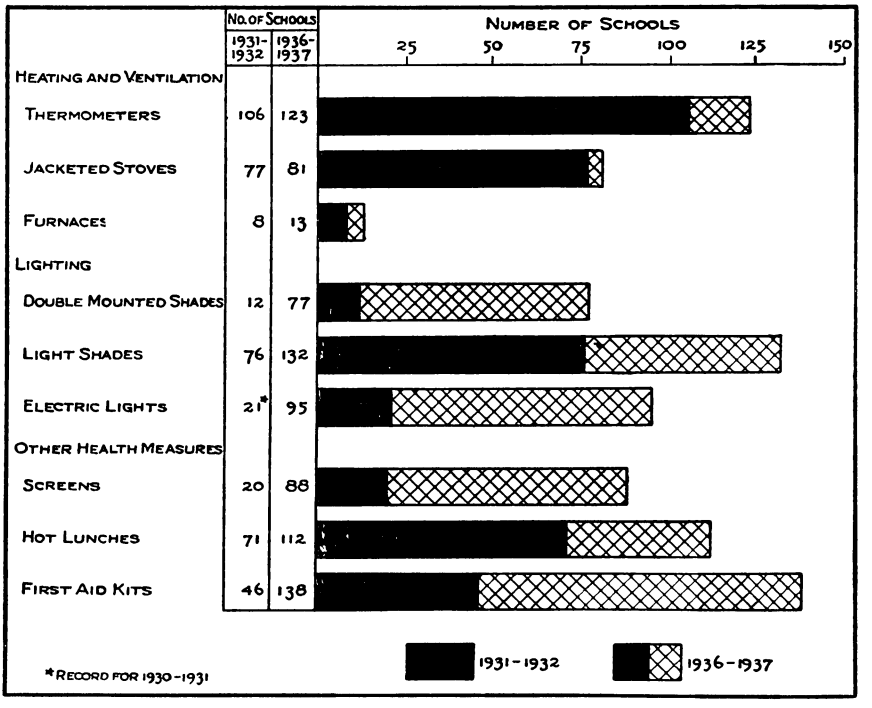
[10] Cole, R.; Kimball, D. D.; Lee, F. S.; Palmer, G. T.; Phelps, E. B.; Thorndike, E. L.; Winslow, C.-E. A.: A Study of Rural School Ventilation in Cattaraugus County, New York. Reprinted from *The American Journal of Hygiene,* July, 1931, xiv, No. 1, pp. 49-78.

> tions on these same rooms disclosed floor temperatures below sixty degrees. . . . One local factor which apparently influences such minor illnesses (respiratory illnesses) appears to be overheating or overchilling of the schoolroom.

The one-room school seems poorly adapted to any ordinary system of heating. Some improvement is indicated where cellars have been built. These cellars hold the furnace and in addition provide added space for play and for work shops. In the six-year period there has been little change in heating systems as shown in Figure 3. Although a number of new installations of jacketed heaters have been made, in several instances it is known that the jackets have been removed.

Thermometers are provided, are broken and then are replaced. Seventeen more schools had thermometers in 1937 than in 1932, but

Fig. 3. Comparison of the heating and lighting facilities and miscellaneous health measures provided in the rural schools of Cattaraugus County in the spring of 1931-1932 and 1936-1937.



nearly fifty schools still are without them (*see* Figure 3). At the county-wide teachers' conference in the fall of 1936 special emphasis was placed on the use of thermometers. There seems little excuse for every school not having a thing so essential as well as so inexpensive. At these same meetings suggestions were given for taking thermometer readings at desk height. It is gratifying to note that 101 of the 123 schools with thermometers employ that method of taking the temperature.

Lighting and Seating. Standards for classroom lighting are the same for all schools whether single one-room schools, or larger schools with several classrooms. Essentials for a well-lighted classroom are too numerous to outline here, but among them are light walls and ceilings; window area one-fifth the floor area; light-colored, double-mounted shades (that is two shades mounted on two rollers attached at the middle of the window, one shade operating downward and the other upward); and artificial lights of adequate intensity. The omission of other requirements from the above list does not in any way minimize their importance.[11]

Lighting problems have received special attention in the rural schools of Cattaraugus County during the past four years. Groups working for better classroom lighting have found their efforts made easier as a result of the county-wide educational program of the local Farm and Home Extension Service, and the far-reaching rural electrification program of the Federal government which has brought electricity for the first time to many isolated communities.

Among the special activities to promote better classroom lighting have been: special lighting surveys of poorly lighted schools conducted by the local power company and the district superintendents; the use of a light meter by the health education consultant on her visits to schools; a County Fair exhibit consisting of an almost full sized model of a well-lighted schoolroom which all the school

[11] Smith, M. E.: A PROGRAM OF EYE HEALTH IN A SCHOOL SYSTEM. New York, New York, National Society for the Prevention of Blindness, Inc., 1935. Publication 143.

trustees were invited to inspect; and special units of work on lighting developed by teachers and pupils. Although a complete picture of the changes that have occurred in the six-year period is not available, certain improvements are evident. (*See* Figure 3.) Light-colored shades are found in 82.5 per cent of the schools in 1937 as against 49 per cent of the schools in 1932 (based on 154 reports). Schools with double-mounted shades have increased in the same period from 7.1 per cent to 45.3 per cent. Ninety-five of the 170 schools reported electric lights in the spring of 1937, a contrast to the twenty-one schools having them in 1930-1931 (reports for 1931-1932 are too incomplete to use). There is much education necessary, however, before schools will install lighting units of sufficient intensity to meet the standards for good schoolroom lighting.

Light walls were reported in 152 of the schools in 1937. Information on this point is lacking for the earlier period, as is also information on structural changes, such as increased window area, for both periods. It is known, however, that a number of the schools have been remodeled to provide for increased window area. Possibly the fact that the knowledge of some of these conditions is incomplete, especially for the earlier period, is in itself indicative of the progress that has taken place in attention to lighting problems.

In the spring of 1933, at the instigation of the school health education office, a lighting survey was made of thirty-one small schools which presented unusual lighting problems. This was done by the local power company assisted by the district superintendents and the sanitary engineer of the County Department of Health. Following the survey, educational materials were left with the teachers who were encouraged to help the pupils make a special study of the problems found. Table 1 shows the changes that have occurred in these schools during a five-year period. The figures are complete for twenty-seven of the thirty-one schools. The remaining four have closed, and the pupils have been transferred to larger schools where lighting conditions presumably are better.

	Number		Per Cent	
	1933	1937	1933	1937
Walls A Light Soft Shade	No Info.	25	No Info.	92.6
Double-Mounted Shades	2	17	7.4	63.0
Light-Colored Shades	2	23	7.4	85.1
Electric Lights	13	22	48.1	81.5
No Shades	No Info.	1	No Info.	3.7

Table 1. Lighting conditions in twenty-seven schools taken from surveys in 1933 and 1937.

Seating, which has a direct bearing on the amount and quality of light that a pupil receives, has been given special attention, also. The figures for types of seats are very incomplete for both periods, but an increasingly large number of schools are purchasing movable seats, or tables and chairs each year. The unadjustable, unmovable seats are fast disappearing.

Hot Lunches. One evidence of a teacher's interest in the welfare of her pupils, as well as of the degree of home-school cooperation which exists in a community, is the presence or absence of a hot lunch plan. The school health education program each year places emphasis on the value of a warm dish for a part of the noon meal at school and gives teachers assistance in making plans. The public health nurses also have given much help in promoting school and community interest in hot lunches.

Several methods for serving the lunch are employed, each school being encouraged to work out its own plan. In 1932 there were seventy-one schools out of 170 serving hot lunches at noon, while in 1937 the number had increased to 112. (*See* Figure 3.) An analysis of the methods used in 1936-1937 shows that in fifty-two the lunch was cooked at school; in forty-six, the hot jar method was used; in ten, lunch was brought in thermos bottles; in one, the meal was cooked at a neighbor's; and for three schools the information was lacking. A majority of the schools serve hot lunches from fall to spring, or longer. In 1937 only seven schools reported serving

lunches for two months or less. Among the fifty-eight schools reporting no hot lunches in 1936-1937 the reasons stated for not doing so were: children or parents not interested, thirteen; no equipment for heating lunches, twenty-three; children go home, nineteen; other reasons, three.

Weighing Program. For a number of years the public health nurses have carried portable scales to the small schools for an annual weighing. In addition, some schools have arranged to use neighborhood scales for more frequent weighing. In 1936-1937 only eleven of the 170 schools reported scales of their own, while twenty-eight reported using neighborhood scales. In the same year only fifteen schools were weighing pupils monthly. This unsatisfactory state of affairs has led to a drive for more scales in the schools in order that frequent weighing, with emphasis on steady growth, may be accomplished. A large number of schools are purchasing scales during the present school year. In some schools there has been difficulty with the accuracy of the scales, especially where cheap ones were purchased, but even in these schools teachers report a great interest on the part of the children in improving their health habits for better growth.

Screened Windows. In the program for bettering the school environment little emphasis has been placed until recently on equipping schools with screens. In 1931-1932 only twenty of the 170 schools reported having screens. The number had increased to eighty-eight by 1936-1937, but the condition remains far from ideal (*see* Figure 3). One can easily see why extensive building changes are hard to finance, but it is difficult to understand the slowness with which school districts have equipped their school buildings with screens. Screens are within the budget of any district and important for the comfort of children as well as the cleanliness of the interiors.

First Aid Kits. A well equipped first aid kit is an essential in any school. An inexpensive home-made kit stocked with supplies pur-

chased with the school's needs in mind is as satisfactory as an expensive, commercially-made kit. The number of schools with kits has increased from forty-six to 138 during the period from 1931-1932 to 1936-1937 (*see* Figure 3). In addition it is felt that many schools have the benefit of kits furnished by individual teachers, but not reported as possessions of the schools.

Continual educational effort has had its effect on the increase in kits. For the past two years letters have gone out from the school health education office to teachers in schools lacking kits. These letters have suggested ways of making kits and have contained educational materials which the teachers might use while working on the problem of safety and first aid.

Textbooks. The health textbook as a reference book for the pupil is an important aid to good health teaching. Schools in Cattaraugus County have been encouraged to add to their libraries at least one set of up-to-date pupil health books. In addition many schools avail themselves of the books on loan from the school health education office. A more or less arbitrary classification of the schools according to the adequacy of their supply of health books is as follows: very good, 13.1 per cent; good, 13.1 per cent; fair, 50 per cent; poor, 19.7 per cent; none, 4.1 per cent. In few schools could one rate the supply as excellent.

Improvements in General. During the six-year period covered in this study yearly environmental improvements have been made, on the average, in 60.7 per cent of the schools. It is worthy of note that the greatest number of improvements occurred in the year (1934-1935) that special emphasis was given for the first time in the teaching program to problems of the environment.

Although $250[12] annually ($50 by trustee and $200 at direction of superintendent) may be spent for improvements in building and equipment in excess of the amount which the district votes to spend,

[12] ————: EDUCATION LAW. Albany, New York, The University of the State of New York, 1936. Section 275, No. 14 and Section 395, No. 5.

the sum available for improvements each year is not enough for extensive alterations. If radical changes, such as constructing a cellar, or remodeling the building are made money must be borrowed for the purpose. This is being done in some districts, but others are reluctant to become involved with debts when the future is uncertain. Nevertheless, there still are many needed improvements which could be made within the yearly financial limitations.

In the six-year period forty-two of the small schools have closed and now are transporting their pupils to large central schools, or in a few instances, to a neighboring village school which is not centralized. Three new central schools and one new village school have been built in this time, and three other village schools have been remodeled and enlarged. Since the large schools on the whole provide better environmental conditions, these shifts may well be considered steps in advance.

Beneficial effects from environmental improvements in the small school may extend beyond the school itself. A new well, a new septic toilet, or some other improvement in a school often is followed by similar changes in homes of the neighborhood. Community pride is aroused when a building is well equipped and in good condition. Then, too, a school with conveniences is more likely to become a center for community social activities.

Since the small rural school provides a home for school children during half their waking hours, and since it also has potentialities for raising living standards of the community at large, efforts should be continued toward making it healthful and safe.