

# THE EFFECT OF AN EDUCATIONAL PROGRAM UPON THE SANITATION STANDARDS OF RESTAURANTS IN PEORIA, ILLINOIS<sup>1</sup>

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(Received for publication August 4, 1962)

A course in Food Service Sanitation was developed in 1953 by the Division of University Extension in cooperation with the Department of Food Technology, College of Agriculture, University of Illinois, Urbana. The course is of eight weeks duration with one two-hour session of class each week. Lecture, discussion, films, filmstrips, and slides are utilized in conducting the course. Enrollment is limited to restaurant managers and supervisory personnel.

Class topics include: Fundamentals of Nutrition, Fundamentals of Microbiology, Sources and Kinds of Additive Debris, Food Spoilage, Food-Borne Illnesses and Food Poisoning, Standards of Food Storage, Standards for Food Preparation, Standards for Food Serving, Good Housekeeping and Cleanup Techniques, Insect and Rodent Control, and Safety. Local and state laws pertaining to food service are fully reviewed in each class. An outline of the course and syllabus are furnished each enrollee.

Upon the successful completion of the course, each student is presented with an appropriate certificate by the University of Illinois, Division of University Extension.

Initial presentation of the course occurred in Chicago the spring semester of 1953-54, when a class of down-town restaurant managers was organized under the joint auspices of the Chicago Restaurant Association and the Chicago Board of Health. During 1953-54, four groups were given the course, three in Chicago and a city-wide class in Peoria, Illinois. By the end of the year 1960-61 the course had been given 90 times; 33 classes for commercial food service management, 31 classes for hospital food service, 21 classes for school lunch management, and 5 classes for food service personnel of Illinois penal institutions.

Between the years of 1953 and 1960 the course was presented 11 times in the city of Peoria. Since no advance notice had been given, it was decided that Peoria could well be the location for a study which would attempt to evaluate the impact of class

participation upon degree of compliance with the standard of food dispensing operations as established by the rules of the City of Peoria Food Ordinance<sup>2</sup>.

## METHODS AND MATERIALS

The restaurant inspectors of the City of Peoria use the inspection form recommended by the United States Public Health Service. The first 9 items on this form pertain to physical features of the establishment not readily modifiable by procedural studies. Items 10a to 17 and Section 9 (Disease Control) - a total of 15 items on the inspection report sheet - pertain to standards of day-to-day operation and therefore may be readily responsive to an instructional program.

Mean number of violations per inspection per year were calculated for each member of each group for the years 1952 through 1960. Since no classes were given prior to the year 1953-54, none of the restaurants would have participated in more than one class that year.

It should be noted that all city restaurant inspectors were required to take the course. Actually the inspectors have participated in all the courses offered in Peoria.

## RESULTS

It may be noted (Figure 1) that the mean number of violations per inspection of the nonparticipating restaurants (group B) declined during the years 1952-1960 from 4.46 to 1.70 (38.1%). This improvement in the sanitary condition of these establishments may have resulted from a combination of a number of factors. One may have been an awareness by managers of this group that the city health department was placing more and more emphasis upon maintenance of health standards within the public food service with resulting attention being paid more diligently to their compliance. Another factor may have been a direct result of the participation of the restaurant inspectors in the classes. Each inspector was required to attend one course. But, in fact, all the inspectors have participated in nearly

<sup>1</sup>This study is based upon data drawn from 1806 inspection reports of 64 firms participating in the program, compared with 1710 reports of 60 firms from the same geographical area of Peoria, Illinois, that did not participate during the years 1952-1960.

<sup>2</sup>Class membership was of two sources—those who wanted to participate, and those urged to participate because of conditions disclosed by inspection of their establishments.

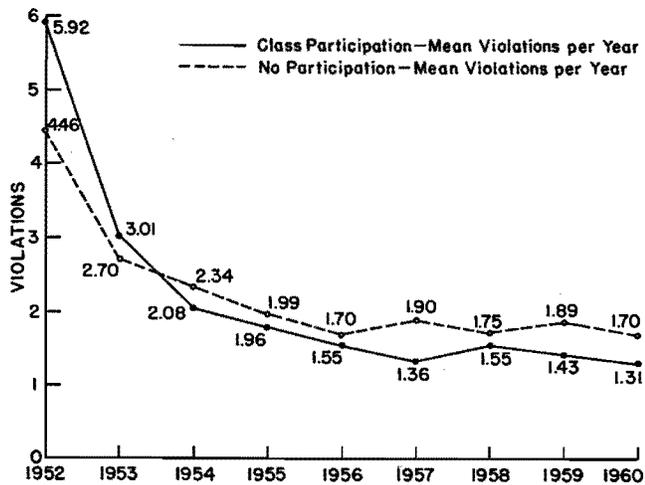


Figure 1. The mean number of violations per inspection of participating restaurants (Group A) and of non-participating restaurants (Group B) are compared through the years 1952-1960.

all of the courses presented in Peoria. A consequence of such active participation on the part of the inspectors may have been a shift in emphasis from a role of "checking the inspection sheet" to concern with correction and improvement; a shift from "policing" to "educating"; attention from *what* is in violation to *why* it is a violation, its significance, and what steps can and must be taken to maintain a satisfactory standard of operation.

We would like to believe that restaurant management by the nonparticipating group, may thus have been somewhat influenced both indirectly by the sustained and continuing educational program and directly by the understanding resulting from participation of the city inspectors in the classes. In any event, significant improvement can be noted in the group of institutions that never had participated in the course.

Mean violations of the participating group per year for the period 1952-1960 are compared with the mean violations of the nonparticipating group (Figure 1). Group A (participating) had a mean violation in 1952 of 5.92 per inspection (39.5%), compared to a mean violation of 4.46 (29.7%) among the non-participating group of restaurants (Group B). After initial class participation (1953-54) Group A dropped *below* Group B in violations and retained that relationship to the end of the study in 1960 where Group A had fallen to a 1.31 (8.7%) violations per inspection and group B to 1.70 (11.3%). Expressed another way, Group A *improved* 87.9% and Group B *improved* 62.9%.

In trying to pin-point the time of maximum impact within Group A, a comparison was made of mean violations before, during, and after class participation (Figure 2). Mean violations (Group A)

prior to *any* educational program (1962) was 5.92, and was plotted for each year for (a) those that had not yet participated, (b) those that were that year participating, and (c) those that already had participated. Obviously, only one mean figure was available in 1952.

Two additional means could be calculated for 1953 (had participated and were now participating). From 1954 through 1959 all three means of Group A could be plotted. But since our study stopped with 1959-1960, all of Group A would have participated by the end of 1960 and only one mean figure (1.31) would be available. Figure 2 therefore indicates the effect of participation on members of Group A. Violations after participation were consistently below violation means prior to participation. The immediate effect of being in the class is indicated by the line plotted for year of participation. With one exception, 1959, violations were less after having completed the class than during the year in which participation occurred.

#### EFFECT OF NUMBER OF CLASS PARTICIPATIONS

We next asked ourselves whether the number of classes in which the restaurant participated was associated with change in mean violations. Figure 3 indicates the impact of the number of classes of participation. Violations were at a higher initial level for those participating in more than one class (3.65, 5x; 10.16, 4x; 4.23, 3x; 4.20, 2x compared to 2.79, 1x). But the final mean index of that group having the highest initial index of 10.16 was 1.15 compared to the final mean index of Group B of 1.70 (Figure 1). All participants by numbers of classes involved (1 to 5 per restaurant) decidedly reduced their mean violations before, during, and after participations, to within 0.76 of a violation between greatest and least number of violations - 1960.

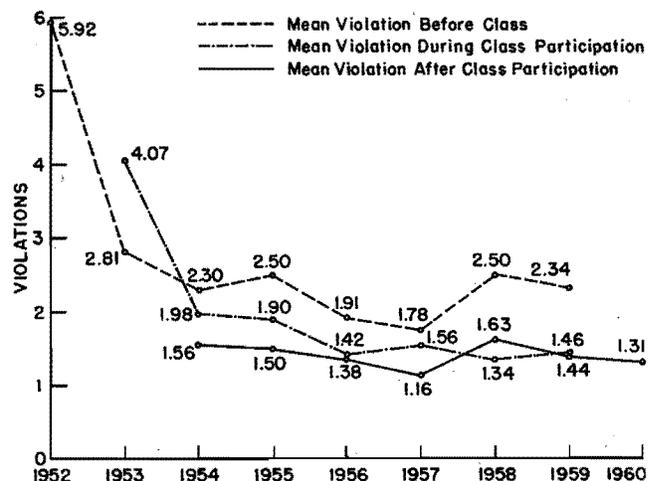


Figure 2. The effect of class participation upon violations of the restaurant sanitation code.

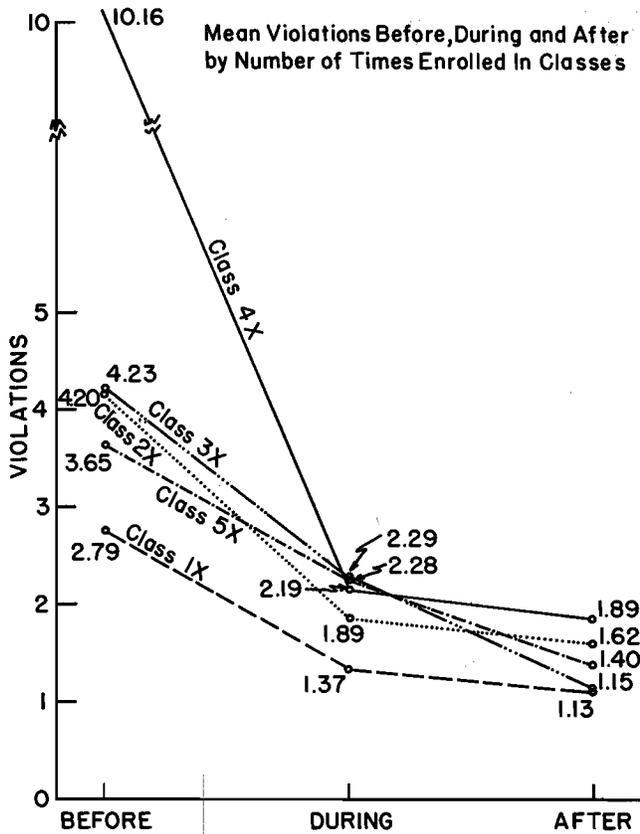


Figure 3. Effect of frequency of class participation upon violations of the restaurant sanitation code.

CLASS PARTICIPATION AND CONTINUITY OF OWNERSHIP

On the basis of data obtained from licensing records, a study was made of the number of times ownership of restaurants changed within Group A (participants) and Group B (nonparticipants) within the eight-year period. Table 1 shows this distribution. In Group B (total of 60) only 34 (56.67%) were under the same licensee in 1960 as in 1952.

Out of Group A (participants) only 6 out of 64 had changed owners, and only once. Fifty-eight of the 64 (90.62%) were under the same owner in 1960 as in 1952. Two conclusions may be drawn from these data: (a) the more serious management participated in the course and (b) principles of the course, applied to operations, retained customers and permitted the business to continue as a healthy operation.

In an attempt to evaluate sustained interest and acceptance of course content, certain class statistics were studied. From Table 2, it may be noted that some (15) apparently enrolled only to "please the inspector", 27 started the class but did not finish due to (a) transfer of job, (b) illness, and (c) lack of interest. Of the 319 who started the classes, 292 (91.5%) successfully completed the course. For a primarily voluntary course for which no academic

TABLE 1. NUMBER AND PERCENT OF CHANGE IN RESTAURANT OWNERSHIP AMONG MEMBERS OF THE NON-PARTICIPATING GROUPS.

No. of changes	Group B (nonparticipating)		Group A (participating)	
	Number	Per cent	Number	Per cent
7	1	1.67		
6	0	0.00		
5	2	3.33		
4	1	1.67		
3	2	3.33		
2	8	13.33		
1	12	20.00	6	9.38
0	34	56.67	58	90.62

Totals 60 100.00 64 100.00

credit is awarded, this would seem to indicate a high level of acceptance and sustained interest.

SUMMARY AND CONCLUSIONS

From the above study, it may be concluded that a continuing program of systematic instruction in principles of sanitation for food service industry contributes to a significant up-grading in terms of compliance with state and city Food Service Codes and Ordinances.

Although both participating and nonparticipating restaurants showed improvement of sanitation as described by inspectors' reports of violations, greater improvement was made by those that participated in the class program. The improvement was sustained, after participation, throughout the study period (1952-1960). Those firms that participated in the educational program had a better record on continuity of ownership than did the nonparticipants. The number of students completing the 16 clock-hour course, compared with the number originally enrolled, would seem to indicate that the content of the course, as well as the methods of presentation, hold a sustained interest for the enrollees.

TABLE 2. SUMMARY OF THE RELEVANT STATISTICS ON CLASS ENROLLMENT

Number of classes in Peoria, 1953-1960	11
Total number of persons enrolled	334
Average class enrollment	30
Enrolled, but did not begin the class	15 - 4.5%
Enrolled and started the class	319 - 95.5%
Started class but did not finish	27 - 8.5%
Started class and finished	292 - 91.5%

ACKNOWLEDGMENTS

We wish to express our appreciation to Dr. Fred Long, Director, Mr. Louis Pickles, Chief Sanitary Engineer, and the inspection staff of the City of Peoria Health Department for their kindness in making available their records for our study, and to the inspectors and the secretarial personnel for assistance in drawing data from the report records.