ADMINISTRATIVE PRACTICES FOR TOWEL SERVICE IN PHYSICAL EDUCATION AND ATHLETICS IN ONE HUNDRED SELECTED CLASS "A" IOWA SECONDARY SCHOOLS

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by
Dennis E. Frerichs
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ADMINISTRATIVE PRACTICES FOR TOWEL SERVICE IN PHYSICAL EDUCATION AND ATHLETICS IN ONE HUNDRED SELECTED CLASS "A" IOWA SECONDARY SCHOOLS

by

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Charles J. Heilman
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[Signature]

Earle L. Campfield
Dean of the Graduate Division
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CHAPTER I

THE PROBLEM

The theory that it is just as important and logical to provide towel service as it is to provide other source materials, such as textbooks, paper, resource materials, audiovisual materials, and other course materials is being supported by students, teachers, parents, and administrators.¹

For years participants in physical education classes and athletics have been delegated the responsibility of laundering their own towel, but seldom did they do so. It was the accepted practice for students to take several towels to school during the course of the year. These towels were seldom laundered; nor were they very often returned home at the end of the year. This most ineffective program, which delegated laundry responsibility to the student or family, has been, to some degree, changed in the last few years. A new trend is developing to replace this procedure.

This concept involves the maintenance of a school laundry or an arrangement with a commercial laundry to provide for all the athletic and physical education laundering needs.

It is a well accepted fact among many authorities that the student-parent delegation of laundry services is, in most cases, not satisfactory.¹,²

Unless a rigid program is in effect, the students do not take the necessary steps to provide themselves with clean physical education equipment. This is the major reason that commercial laundries, with an arrangement of a nominal fee paid by the school or student, and school laundries financed by these same sources, are becoming more and more popular.³

With the growth and development of athletic and physical education programs, it is important for aesthetic, as well as for health and safety reasons, that all materials be kept clean and sanitary.⁴

I. STATEMENT OF THE PROBLEM

It was the purpose of this study to determine the administrative practices for towel service in physical education and athletics in one hundred selected class A

¹Ibid.
³Ibid. ⁴Ibid.
secondary schools in Iowa.

The investigator planned to use the data compiled in this study as a guide for the development of a towel service practice for the school in which he was teaching.

It was not the purpose of this study to investigate the type of laundry equipment used by schools which had a towel service program.

II. RESEARCH DESIGN AND METHODOLOGY EMPLOYED

A review was made of pertinent professional literature. From this review, and from an investigation of commercial laundry services and motel laundry practices, a questionnaire was developed. The questionnaire was validated by submitting it to physical education personnel at eight Iowa high schools, for critical analysis. The questionnaire was constructed for the purpose of collecting the following information: (1) the types of towel service generally found in class A schools; (2) the types of financing used for provision and care of towel service in class A schools; (3) the types of service feasible for like-sized schools in the future.

The questionnaire was then sent to physical education directors in 100 class A schools with an enrollment of over 200 students, as listed in the Iowa Educational Directory. Eighty questionnaires were returned for a return
percentage of eighty. The information was then tabulated and the data were analyzed.

III. DEFINITIONS OF TERMS

**Towel service.** Towel service is that service which provides for the supplying and laundering of towels used by students in connection with physical education and athletic activities.

**Commercial laundry.** Commercial laundry service is that service which furnishes towels to a school and, for a stipulated cost, assumes full responsibility for maintenance of the towels.

**School laundry.** School laundry service is that service which is operated fully by a school to provide students with clean towels at a cost to the student, to the school, or to both.

**Warp.** Warp is yarn that runs lengthwise in a woven fabric.

**Pick.** Pick is yarn that runs crosswise in a woven fabric. These fillings are carried over and under the warp yarns.

**Filling.** Filling is the horizontal thread in a woven fabric.

**Pile.** Pile is the velvety surface on a fabric, produced by the interweaving of extra horizontal (filling)
threads that form raised loops which are cut out and sheared.

**Selvage.** Selvage is the edge of a woven fabric, so formed as to prevent raveling.

**Durability.** Durability is the power of resistance to destructive agencies.

**Absorbency.** Absorbency is the power to suck up in the manner of a sponge.

**Sizing.** Sizing is a finish to give linen and cotton fabrics stiffness and smoothness and to improve their appearance.

**Mercerization.** Mercerization is the process of treating cotton fibers or fabrics with a solution of caustic alkali in order to strengthen the fiber, make it take dyes better, and often, to give it a silky luster.
CHAPTER II

REVIEW OF LITERATURE AND DATA

The study of towel service practices in class A schools in Iowa included: (1) information concerning commercial and motel laundry practices, (2) a review of pertinent literature, (3) information about towel manufacturers, and (4) information concerning towel content.

I. LITERATURE

Much of the literature which dealt with the laundering of equipment indicated that school districts were reluctant to allocate money for the cleaning of towels.¹

Several different plans have been suggested for towel service. Grieve has written that towel services can be operated in several different ways. In addition to the plan of having the student supply his own towel and laundry service, Grieve suggested that schools furnish the towels in one of three ways: (1) the school furnished one or two towels plus washing equipment, and provides a plan which would insure that towels were laundered; (2) the school

uses a laundering system by which athletes trade a soiled towel for a clean one, with the laundering done by the school; (3) a commercial laundry furnishes the towel service for a fee.\(^1\)

Williams, Brownell, and Vernier listed three possible methods of solving the clean towel problem: (1) delegating responsibility to the student or family; (2) arranging with a commercial laundry to provide clean towels at a nominal cost; (3) maintaining school laundries. It was their opinion that delegating the responsibility for towel service to the student and family seldom proved successful. They commented:

Some adolescent youths follow the course of least resistance and neglect to bring clean equipment. The result is obvious; soiled uniforms are used over and over again, while towels could easily be mistaken for the janitor's dust cloth except that the latter presents a less offensive odor.\(^2\)

II. COMMERCIAL AND HOTEL LAUNDRY PRACTICES

Because a survey of towel service practices in selected class A schools in Iowa must, of necessity, include information concerning local laundries and motel laundries,


this study attempted to get such information.

An investigation on one local laundry, Clean Towel Service in Des Moines, Iowa, revealed that the size towel which this company used was twenty inches by forty inches. The type of towel and the weight of the towel were not given. The only other information provided was the fact that all of their towels were purchased from a mill outside the state of Iowa. This company had its own washing formula, and used a specific marking for items.

Large motel chains were reluctant to give any information with regard to their towel service program. Holiday Inn revealed the firm owned its own towels and also laundered them. Investigation included large operations such as Howard Johnson's, Clayton House, and McNeal Motels, that own their towels but send them to a local laundry. The firms would not give the name of the towel services employed.

Some individually owned motels such as the Western Motels and Johnny and Kay's owned their own towels and operated their own laundry service.

Small independent motels almost always owned their own towels and laundry facilities.
III. TOWEL MANUFACTURERS

The procuring of towels was one of the necessary adjuncts to the organization of a towel service plan. Therefore, information was obtained concerning a manufacturer of towels popular among class A schools in Iowa. This manufacturer was Iowa State Industries at Anamosa and Fort Madison. The products they manufactured were available to all tax supported and non profit organizations in the state of Iowa.

Cloth towels. As of May 15, 1968, their price for the best selling 22 inch by 44 inch, heavy weight bath towel was eight dollars and fifty five cents per dozen. These heavy weight towels were made of 22 inch bleached cotton material called grege goods. The material was bleached after it was woven into towels.

The warp (pieces of yarn in the length of the towel size 22 inches by 44 inches) had 60 ends per inch. The filler measured 637 ends per inch. The total ends per inch one way had a 97 count. The total ends for one towel measured 1,464. This was 36 picks per inch in the number six filler.

The warp on the bottom of the loom used a size ten thread and the warp on the top of the loom used a size fourteen thread. The shuttle used size six filler thread.
Paper towels. At the time of this study, only two schools in this area were known to be trying the paper bath towel. The towel was made of a pure white softwood pulp paper. They cost less than two cents per towel and eliminated the expenses in connection with extra handling, replacement of towels and pilferage.

It was estimated that the average person might use two paper towels for each shower, which would make the total cost considerably less than the cost of laundering individual cloth towels in local establishments. The change from cloth to paper towels is a difficult one, however, and takes some adjusting. Very few people prefer paper bath towels to cloth on first use.

IV. TOWEL CONTENT

The purchasing of towels is a complex problem, with many factors to be considered. One cannot purchase towels merely by brand name because the name identifies only the manufacturer and not a particular quality. A company may manufacture many different grades and qualities of towels under the same brand name. In information received from Iowa State University, the Home Economics Department suggested the quality of a terry cloth or turkish towel depended, basically, on five things: (1) number and length of pile loops; (2) tightness of weave; (3) strength of
yarns; (4) selvage; (5) workmanship.¹

The important characteristics of towels listed in the report from Iowa State were durability and absorbency. The following information was from their laboratory. Absorbency is obtained by these procedures: (1) using cellulose fibers; (2) using low twist yarns; (3) using staple fibers; (4) using low count; (5) using large surface area, long floats or pile loops; and (6) mercerization. The cellulose fibers also provide easy washability, and were found to be absorbent because of their many hydroxyl (CH) groups which made the fibers hydrophilic or water loving.²

Cotton was found to be the most widely used fiber because of the low cost. Cotton fabrics looked fairly good on the rack and they were found to pack well in drawers and stack well on shelves. A new process has been discovered which blends rayon with cotton to produce softness and luster. Regular rayon was much weaker than cotton, and was found to lose fifty per cent of its strength when wet, thus making a less durable towel. If hi-wet modulus rayon was used in the blend, the resulting fabric reacted like cotton during use and care.

Absorbency was affected greatly by the kind and the

¹Iowa State University, "Towels" (Home Economics Department, 1968), p. 2. (mimeographed.)
²Ibid.
type of yarn used in a fabric. Low twist yarns, staple fiber yarns, and coarse yarns were found to have a larger surface and provided an easier access for the entry of water into the fabric.

Fabric construction was a very important factor in absorbency. The larger the surface area the more absorbent the fabric. A large surface area was obtained by using a pile weave as in terry cloth, or by using filling floats in small designs. Low count fabrics were found to be more absorbent than high count fabrics. Finishes also affected absorbency. New towels which still had some sizing left from the weaving process were not as absorbent as old towels.

Some research was done to show the relationship of white versus colored towels, in absorbency. The results have indicated that the white towels are more absorbent. However, the percentage difference is probably too small to be noticed by consumers.¹

Absorbency is also obtained by the large pile surface on a terry towel. Little information about absorbency is given on a label; therefore, the consumer can predict absorbency only by comparing the number of loops per square inch

in different towels.

The second characteristic, durability, listed by the Iowa State Home Economics department is obtained by the following procedures: (1) using strong fibers; (2) using high twist yarns; (3) using ply yarns; (4) using high count yarns; (5) using short floats; and (6) mercerization.\footnote{Iowa State University, \textit{loc. cit.}}

Attention is called to the fact that the characteristics which give absorbency are often opposed to those that give durability, and that a judicious combination of the factors must be used to obtain towels that are both absorbent and durable.

Durability in terry cloth is determined by the ground weave. The more threads per square inch the stronger and the more durable the towel, and the more firmly the loops are held in place. Most towels have some flat area either in borders or in designs and the consumer can compare these areas. In terry cloth yardage, the comparison of durability can be made by weight, the heavier fabric having the greatest number of threads. The comparison can also be made by holding the towel up to the light. If the light shows through in tiny and regular pin points, the weave is uniform and good; if the light shows loose and open spots, then the weave is poor. The best towels for durability, then, are those which combine a high count ground weave with a dense
The yarns, as well as the weave, are constructed for both durability and absorbency. The pile yarns are loosely twisted for absorbency and the ground yarns have a higher twist for durability. Ply yarns are used for both the pile and ground yarns in better quality towels.

J. C. Penney Company, Incorporated, in their Education Relations Department printed a consumer buying guide with regard to towels:

1. Closeness of weave means long wear. The under-weave in the body of the towel and near the border should be firmly woven. When the towel is held to the light, no open spots should be seen.

2. The side edges of the towel, called "selvage" are important points of wear. There are three kinds of selvage. The fast selvage should be tightly woven and uniform; the overedged selvage should be evenly stitched; the hemmed selvage should be sewn with small, even stitches. If the selvage is properly finished, regardless of the kind, it will give satisfactory wear for the life of the towel.

3. Hems should be sewn with small, close stitches. In towels with fringed hems, the fringe should be dense and uniform in length; the plain area above tightly woven.1

The same bulletin also gave the following suggestions for the laundering and care of towels: (1) towels should be laundered often before they become too soiled, because hot water and chemicals used to remove dirt and stains weaken

towels and can cause shrinkage; (2) thorough rinsing is important to keep towels soft and fluffy and to remove all traces of detergent or soap; (3) a perborate bleach is safe for all fabrics, and if bleaching is needed, this kind will not harm towels; (4) fabric conditioner, or softener, coats fibers giving them a feeling of softness, but it actually renders them "waterproof" over a period of time, by building up. After several washings, towels will lose their absorbency.  

In addition to the study from Iowa State University Home Economics Department and the Guide from Penney's Education Division, a number of books on textiles included information on towels and the materials which were used to produce the towels. Very few of these books were written within the last ten years; however, much of the information they gave agreed with information received from towel manufacturing companies or concerns that are in operation today.

Hess stressed the importance of durability, and the ability of towels to absorb moisture, when she wrote,

The mass or amount of cotton used determines to a great extent the amount of water a towel holds; and the looseness of the construction of the yarns and fabric greatly influences the rapidity with which water is taken up. On the other hand, durability, or the strength of the fabric, is increased by the tightness
of the construction of the yarns and fabric.\textsuperscript{1}

Hess also commented on the number of filling yarns that interlace with the ground warp and the pile warp. She indicated there is a variance of one to five or more filling yarns in fabrics, and that fabric having less than three filling yarns for each loop (three pick terry) is not satisfactory.\textsuperscript{2}

Potter and Corbman gave their point of view in regard to a well-constructed towel when they stated that moisture which is absorbed should remain in the surface loops and should not reach the underweave. Therefore, the loops of pile which absorb moisture should be loosely packed. A better-quality towel will absorb more moisture and dry faster after use. Also the longer the loops, the greater the absorbency of the towel. Loosely twisted loops are more absorbent than tightly twisted ones; however personal choice must be a factor in the selection of a towel. Some people prefer soft towels with loosely twisted loops; others prefer a rough hard towel with tightly twisted loops. In a well-constructed towel, good absorbency may be expected, since the close weave will result in a close, thick pile.\textsuperscript{3}

\textsuperscript{1}Katherine Paddock Hess, Textile Fibers and Their Use (Chicago: A. S. Lippincott Company, 1941), p. 424.

\textsuperscript{2}Ibid.

CHAPTER III
QUESTIONNAIRE SURVEY RESULTS

One of the major purposes of this study was to collect and analyse data concerning towel service practices in one hundred selected class A schools in Iowa, and from this data to structure and initiate a towel service program for a specific high school.

I. TYPES OF TOWEL SERVICE

In this survey, one hundred questionnaires were distributed to physical education directors of selected class A schools in Iowa. Eighty questionnaires were returned. Of the eighty schools responding, thirteen schools had no towel service of any kind. The responsibility for towel laundry was delegated to the students and parents. Eight of the thirteen schools expressed a desire to start a towel service program, or felt a need to have such a program, but noted the school lacked sufficient funds to begin the operation of such a program, and to maintain it, successfully.

Respondents from five of the thirteen schools expressed no desire to initiate such a plan, and had no future plans for such a program. One of the five schools had, at one time, started a towel service program which was discontinued because of the cost.
Several of the respondents, who desired to have a towel service program, commented that perhaps the installation of some type of towel service in schools will, in the future, become an accepted facility. They felt it would constitute a major improvement in the field of physical education and athletics.

Of the several possible types of towel service plans, four were reported to be in use by the schools surveyed. The number of schools using each plan is shown in Table I.

The first plan was one in which the school provided the towels, the washing and drying facilities, and the personnel to operate the equipment. This plan was the most popular with forty-five respondents who indicated its use. Under this plan, the school purchased the towels, washers, and dryers. In this way a self-sufficient laundry and towel service was provided.

A favorable questionnaire comment, with regard to a school operated laundry plan, was that this plan gave the school the privilege of purchasing types of equipment and towels which were best suited to individual school needs. It also provided equipment that was available at all times, in one location. A clean towel was furnished to all participants in physical education and athletics after each activity. In forty-one of the forty-five school operated towel service programs reported, the administration of the
plan was self-supporting, with the use of student fees.

Regardless of the popularity of this plan, eight schools felt that the initial cost was prohibitive. The up-keep on facilities was necessarily provided by the schools; and, in some situations, the delegation of responsibility for the washing and drying of towels was not satisfactory.

**TABLE I**

TYPE OF TOWEL SERVICE USED IN SIXTY-SEVEN CLASS A SCHOOLS IN IOWA, 1967-68

<table>
<thead>
<tr>
<th>Towel Service</th>
<th>Number of Schools</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>School provides towels, washing and drying</td>
<td>45</td>
<td>67.2</td>
</tr>
<tr>
<td>School provides towels, and commercial laundry provides washing and drying</td>
<td>17</td>
<td>25.3</td>
</tr>
<tr>
<td>Commercial laundry provides towels, washing and drying</td>
<td>4</td>
<td>6.0</td>
</tr>
<tr>
<td>Physical education students and athletes provide towels, and school provides washing and drying</td>
<td>1</td>
<td>1.5</td>
</tr>
</tbody>
</table>

The second plan, which was used by seventeen of the sixty-seven schools replying, provided for the school to assume responsibility for the purchase of towels, and for a local laundry to do the washing and drying. Twenty-five
per cent of the schools responding employed this plan, eliminating any initial cost other than the purchase price of towels. There was no purchase or maintenance cost for laundry equipment, and no delegation of responsibility for washing or cleaning of towels. However, respondents pointed out that the plan depended upon the schedule of a local laundry, and that the laundering cost tended to be somewhat higher than in the self-operated program. The plan was financed by collecting fees from students.

The third plan used by schools surveyed, was one in which a commercial laundry provided towels, as well as the washing and drying service. Four of the sixty-seven schools, or six per cent, employed this plan. As was true with the first two programs, a clean towel was provided each time for each student involved in physical education or athletic activities.

Only one of the sixty-seven schools responding used the fourth plan. This plan was one in which the physical education student and athlete provide the towel, and the school provided the washing and drying.

Among the forty-five schools using the first plan there was a wide variation in the personnel to whom laundry service responsibility was delegated: (1) fifteen schools had custodians who performed the service, (2) eight schools used a combination of coaches and students, (3) five
schools delegated the work to coaches, (4) five schools had students who assumed the responsibility, (5) four schools assigned the duty to a combination of coaches, students and custodians, and (6) eight schools indicated that the services were performed by other personnel as indicated in Table II.

**TABLE II**

PERSONNEL DELEGATED THE RESPONSIBILITY OF SCHOOL OPERATED LAUNDRY SERVICE

<table>
<thead>
<tr>
<th>Types of Personnel</th>
<th>Number of Schools</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custodians</td>
<td>15</td>
<td>22.4</td>
</tr>
<tr>
<td>Combination coaches and students</td>
<td>8</td>
<td>11.9</td>
</tr>
<tr>
<td>Coaches</td>
<td>5</td>
<td>7.5</td>
</tr>
<tr>
<td>Students</td>
<td>5</td>
<td>7.5</td>
</tr>
<tr>
<td>Combination coaches, students and custodians</td>
<td>4</td>
<td>6.0</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>11.9</td>
</tr>
<tr>
<td>Plan other than school operated laundry</td>
<td>22</td>
<td>32.8</td>
</tr>
</tbody>
</table>

II. TYPES OF FINANCING

Financing. A very important ingredient in the success or failure of the towel programs in existence was the method of financing the program. More than one half of the
schools with a towel service program in use financed the plan through student fees. Although authorities have suggested that the Board of Education assume the major part of the expense, in schools where this was not feasible student fees and a combination of athletic fees per year or per sport seemed to be very successful in the financial operation and organization of a towel service program.\textsuperscript{1}

Table III indicates the types of financing used by respondents in this survey. Sixty-eight per cent of the schools that used a towel service plan financed their programs by assessing student fees on a semester or a yearly basis. In the sixty-seven schools which responded, the fees charged to students ranged from one dollar to four dollars. The average fee per year in the sixty-seven schools questioned was two dollars.

Another important facet in the financial operation of towel service programs is the purchasing of towels. Sixty-two of sixty-seven schools with towel services purchased their own towels. Twenty-five of the sixty-two schools purchased towels at the discretion of the administration. Fifteen delegated this responsibility to the

athletic director. The remaining fifteen schools delegated the responsibility to either physical education instructors and/or coaches, with three schools not responding to the question. Four schools did not delegate the responsibility for towel purchasing, but rather purchased them by bid.

TABLE III

METHODS OF FINANCING TOWEL SERVICE PLANS IN SIXTY-SEVEN CLASS A SCHOOLS IN IOWA, 1967-68

<table>
<thead>
<tr>
<th>Types of Financing</th>
<th>Number of Schools</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student fees</td>
<td>46</td>
<td>68.6</td>
</tr>
<tr>
<td>General budget</td>
<td>7</td>
<td>10.4</td>
</tr>
<tr>
<td>General school budget and student</td>
<td>4</td>
<td>6.0</td>
</tr>
<tr>
<td>Athletic budget</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td>Physical education budget</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Student fee and physical education budget</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Physical education budget and athletic budget</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>No answer</td>
<td>4</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Types of towels. As indicated in Table IV and Table V, the sizes and markings of towels purchased were varied. The most popular towel was the 20 inch by 40 inch
size with twenty-eight of the sixty-seven schools using this type. Eighteen of the schools used a smaller 18 inch by 36 inch size. Nine schools used a 22 inch by 44 inch size towel, and three schools used a combination of towel sizes. Nine schools failed to respond to this question.

TABLE IV
SIZE OF TOWELS USED IN SIXTY-SEVEN CLASS A SCHOOLS IN IOWA

<table>
<thead>
<tr>
<th>Size</th>
<th>Number of Schools</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 inch x 40 inch</td>
<td>28</td>
<td>41.8</td>
</tr>
<tr>
<td>18 inch x 36 inch</td>
<td>18</td>
<td>26.7</td>
</tr>
<tr>
<td>22 inch x 44 inch</td>
<td>9</td>
<td>13.5</td>
</tr>
<tr>
<td>Combination of sizes</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td>No answer</td>
<td>9</td>
<td>13.5</td>
</tr>
</tbody>
</table>

Some schools reported using more than one design of towel. Twenty-seven used a white towel with a colored stripe. Seventeen used a plain white towel, and eleven schools used the school name or initials. Three schools used a solid color towel with no markings. The remaining three schools used towels with various markings, varying from the local laundry name or initial to a combination
white towel with colored stripe and school name or initial. Six schools failed to respond to the question.

TABLE V

TOWEL MARKINGS USED BY SIXTY-SEVEN CLASS A SCHOOLS IN IOWA

<table>
<thead>
<tr>
<th>Markings</th>
<th>Number of Schools</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>White with colored stripe</td>
<td>27</td>
<td>40.3</td>
</tr>
<tr>
<td>Plain white with no marking</td>
<td>17</td>
<td>25.3</td>
</tr>
<tr>
<td>School name or initials</td>
<td>11</td>
<td>16.4</td>
</tr>
<tr>
<td>Solid color with no marking</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td>Commercial laundry name or initial</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Combination solid color with no marking and white with colored stripe</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Combination white with colored stripe and school name or initials</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>No answer</td>
<td>6</td>
<td>9.0</td>
</tr>
</tbody>
</table>
CHAPTER IV

SUMMARY AND RECOMMENDATIONS

The purpose of this study was to determine the types of towel service programs that existed in class A schools in the state of Iowa.

Preparatory to an investigation concerning the types of towel service employed in school systems, a review was made of local laundry and motel laundry practices and of current literature relative to school laundry service. As a result of this review, a questionnaire was developed, validated, and sent to one hundred of the largest class A schools in the state of Iowa. The results of this questionnaire survey were reported and tabulated in Chapter III.

I. FINDINGS

The study has provided the following data:

1. Of the eighty schools responding, thirteen had no towel service. Of these thirteen schools, five respondents expressed no desire to start such a plan, or had no such plans for the future. Of the eighty schools, sixty-seven use some type of towel service plan.

2. Of the several types of towel service plans, four were reported as being used by responding schools.
The first plan was one in which the school provided the towels, washing and drying facilities, and the personnel to operate this equipment. Forty-five of the sixty-seven responding schools used this plan. The second plan, used by seventeen of the sixty-seven schools replying, provided for the school to assume responsibility for the purchase of towels, and for a local laundry to do the washing and drying. The third plan used by schools surveyed was the one in which a local laundry provided towels, along with washing and drying service. The fourth plan, used by one school, had the students provide the towel. The school provided for the washing and drying.

3. Sixty-eight per cent of schools using a towel service plan financed their program by using student fees assessed either on a semester or a yearly plan.

4. The average fee for the schools replying was two dollars.

5. The most popular towel size was twenty inches by forty inches with twenty-eight of the sixty-seven schools using this size.

6. Twenty-seven schools that responded used a white towel with a colored stripe; seventeen used a
plain white towel; eleven schools used a towel with school name or initials. Three schools used solid color with no markings. The remaining three schools used towels with various markings, varying from the local laundry name or initial to a combination white towel with colored stripe and school name or initial. Six schools failed to respond to the question.

II. RECOMMENDATIONS

After an investigation of the types of towel services employed by sixty-seven Iowa high schools, it is the writer's recommendation that all class A schools in the state of Iowa employ a towel service program that best fits their individual needs. Delegating to students the responsibility of providing and laundering their own towels does little to further the rules of health and sanitation which every school should promote. By initiating a towel service program in each school, each student would be assured of having a clean towel after each strenuous physical activity.

Type of towel service. The Urbandale Community High School should initiate a towel service plan whereby the school would provide towels, as well as laundry equipment. The choice of this particular plan best fulfills the needs
of Urbandale High School in providing a clean towel for physical education students and athletes without being dependent on commercial laundry concerns.

Type of financing. The initial cost in starting a towel service program would be too high to be financed by the department of athletics or the physical education programs; therefore, the cost should be met by the Board of Education. Included in the initial cost would be such things as the purchasing of laundry equipment and towels, and the providing of a room which had the proper plumbing facilities for this equipment and an area large enough to store the number of towels needed.

A student fee of two dollars per year should be assessed each physical education student. Boys and girls participating in athletics would be charged an additional one dollar per student per year. The amount of the fee per student would meet the cost of soap to launder the towels and replace towels lost or discarded due to wear. The remaining money would be applied to the maintenance of the laundry equipment.

Assigned student managers, who operated the laundry equipment, would receive free towel service.

Responsibility of purchasing towels. Purchasing towels should be the cooperative responsibility of the
administration and the athletic director. However, before a final decision is made on quality, marking, size and quantity, the physical education teachers and coaches should be consulted.

**Type and quantity of towels.** The size of the bath towel used for physical education students and athletes should be 20 inches by 40 inches. This size is large enough to dry the student adequately, and yet is not so large as to cause a washer overload problem, as might be the case with the increased weight of a larger towel. The towel should be white with a blue stripe down the middle to serve as a mark of identification.

The material for the towels should be a bleached cotton. The warp would have 60 ends per inch with the filling measuring 637 ends per inch. The total ends for one towel should measure 1,464. The selvage should be tightly woven and uniform. The construction of this towel would give both durability and absorbency.

The school should purchase ninety dozen towels as described above from the Iowa State Industries. This would provide a ratio of two towels per student, making possible the rotation of towels every twenty-four hours. The purchase of towels would be subject to the approval of the administration.
BIBLIOGRAPHY
BIBLIOGRAPHY

A. BOOKS


B. PUBLICATION


C. UNPUBLISHED MATERIAL

Home Economics Department. "Towels." Iowa State University, 1968. (Mimeoographed.)
Dear Sir:

As partial fulfillment for a Master of Science Degree in Education with major emphasis in the area of Health and Physical Education at Drake University, I am conducting a survey of Class "A" schools in the state of Iowa. This survey involves the practices used in providing towels and towel service for physical education students and athletes. From the information gathered, a planned service will be suggested to the Administration at Urbandale Community High School.

If convenient, please complete the following questionnaire. I sincerely appreciate your time and cooperation with this project. This has the approval of my advisor Doctor Charles Heilman. Find enclosed self-addressed envelope for your convenience. Thank you for your cooperation.

Sincerely yours,

Dennis E. Frerichs
1. Does the school in which you are employed have a towel service?
   
   a. Yes  
   b. No  

   If you answered yes, please complete the following questionnaire.  
   If you answered no, please explain future plans, if any, for towel service. (use back of this page if necessary)  
   If you are interested in the results of this questionnaire, check appropriate answer at the end of this questionnaire.

2. What type of towel service is used in the school in which you are employed?
   
   a. School provides towels, washing and drying.  
   b. School provides towels, and a commercial laundry provides the washing and drying.  
   c. School provides towels, and the physical education students and athletes provide washing and drying.  
   d. Commercial laundry provides towels, washing and drying.  
   e. Commercial laundry provides towels, and the school provides washing and drying.  
   f. Commercial laundry provides towels, and the physical education students and athletes provide washing and drying.  
   g. Physical education students and athletes provide towels, and the school provides washing and drying.  
   h. Physical education students and athletes provide towels, and commercial laundry provides washing and drying.  
   i. School provides bath sized paper towels.  
   j. Others (please list)
3. Who operates the school laundry equipment?
   a. Coaches
   b. Students
   c. Custodians
   d. Others (please list)

4. What type of financing is used for the provision and care of towel service at the school in which you are employed?
   a. General school budget
   b. Student fees
   c. Student deposit
   d. Physical education budget
   e. Athletic budget
   f. Others (please list)

5. If student fees are charged, what are the costs? (please list costs)
   a. Physical education student per semester
   b. Physical education student per year
   c. Athlete per semester
   d. Athlete per year
   e. Athlete per sport
   f. Intramural participant per semester
   g. Intramural participant per year
   h. Intramural participant per activity
   i. Combined fee for all activities
   j. Others (please list)

6. If student deposits are charged, what are the costs? (please list costs)
   a. Physical education students per semester
   b. Physical education students per year
   c. Athlete per semester
   d. Athlete per year
   e. Athlete per sport
   f. Intramural participant per semester
   g. Intramural participant per year
   h. Intramural participant per activity
   i. Combined fee for all activities
   j. Others (please list)
7. What portion, if any, of student deposit is refundable? (please list amount)

$___a. Physical education students per semester
$___b. Physical education students per year
$___c. Athletes per semester
$___d. Athletes per year
$___e. Athletes per sport
$___f. Intramural participant per semester
$___g. Intramural participant per year
$___h. Intramural participant per activity
$___i. Combined fee for all activities
$___j. Others (please list)

8. If the school provides towels, how are they purchased?

   ____a. Purchased by bids
   ____b. Purchased at the discretion of administration
   ____c. Purchased at the discretion of the athletic director
   ____d. Purchased at the discretion of the physical education instructor
   ____e. Purchased at the discretion of the coaches
   ____f. Others (please list)

   If 8a is checked, please list or describe your bid specifications

9. What size towel is used in the school in which you are employed?

   ____a. 18"x36"
   ____b. 20"x40"
   ____c. 22"x44"
   ____d. Combination of above
   ____e. Others (please list)

10. How are the towels marked at the school which employs you? (you may indicate more than one)

   ____a. Plain white with no marking
   ____b. Solid color with no marking
   ____c. White with colored stripe
   ____d. School name or initials
   ____e. Commercial laundry name or initial
   ____f. Others (please list)
11. Please give the enrollment figure for September 1967 for each unit of the school system whose students utilize the towel service.

   a. Senior high
   b. Junior high
   c. Elementary

12. Approximately how many towels does the school have on hand at this time? (please list)

   a. Used towels
   b. New towels (unused)

13. Approximately how many towels were on hand at the beginning of the 1967-68 school year? (please list)

   a. Used towels
   b. New towels (unused)

14. On a peak day in a school year, what is the maximum number of towels used? (please list)

15. On an average day in a school year, what is the number of towels used? (please list)

16. Approximately how many towels have been discarded due to wear during the school year of 1967-68?

17. What is the approximate wearing durability of the towels?

   a. One school year (9 months)
   b. Two school years
   c. Three school years
   d. Others (please list)

18. What is your expected annual towel loss, if any, due to carelessness, misplacing and theft?
19. If school purchases towels, what is the name and address of the manufacturer and/or distributor?

_________________________________________

_________________________________________

20. If school uses commercial laundry, what is the name and address?

_________________________________________

_________________________________________

21. If you are interested in a copy of the results of this questionnaire, please check yes, if you are not interested, please check no.

   a. Yes
   b. No