

ELEMENTARY PRINCIPALS' PERCEPTIONS OF 1970-1971  
WITH AN EMPHATIC TEACHERS' COLLECTIVE REACTION

By

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Abstract of Dissertation Presented to the Graduate  
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ELEMENTARY PRINCIPALS' PERCEPTIONS OF THEIR ROLES  
WITH AND WITHOUT TEACHERS' COLLECTIVE NEGOTIATIONS

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The study was done in order to investigate the impact of teachers' collective negotiations on the perceptions of principals of their role in elementary public schools.

The problem of this study was to determine if there were significant differences in the ways that randomly selected samples of elementary school principals perceived their role depending upon whether they served as principals in public school districts which had collectively negotiated teachers' contracts during 1969-1972 or whether they served as principals in public school districts which had no collectively negotiated teachers' contracts during 1969-1972.

The perceptions of principals were focused on four aspects of the role of principals: (1) knowledge and skills needed by principals (2) role as institutional head of a school; (3) role in regard to collective negotiations for principals and (4) opinion on about effects of collective negotiations by teachers on principal's role.

Elementary principals in Florida and Illinois were selected and invited to participate in this study in equal number from rural, urban, and central city public school districts which had or did not have teachers' collective negotiations during 1960-1970. Of 86 principals prepared for this study, responses from 35 provided usable data. A 60-item Q-sort was used to collect the data.

Discriminant function analysis showed that responses to a set of four items formed an efficient system that could classify accurately into two groups more than 75 percent of the principals according to whether they did or did not have experience with teachers' collectively negotiated contracts. Next, discriminant function analysis indicated that responses to another set of three items formed a system that could classify accurately into three groups more than 65 percent of the principals according to whether they worked in rural, urban, or central city school districts. Further, discriminant function analysis indicated that responses to a set of six items formed a system that could classify accurately into two groups more

than 90 percent of the principals according to whether they worked in Florida or in Illinois.

A factor analysis of 4-sort data was attempted, but the small sample size resulted in the production of 23 factors which after certain items that overlapped and the contributions of items produced did not seem to have logical content relationships with each other. The factor analysis treatment of the data did not yield statistically useful factors that would help to interpret the data. After viewing the data in a simple descriptive way, a decision to employ discriminant function analysis was made with the results summarized previously.



CHAPTER I  
THE ROLE OF THE STUDY

Introduction

Since 1961, the increased use of collective negotiations between teachers and boards of education to establish formal written agreements about matters such as salaries, working conditions, and grievance procedures has created confusion in the role of the principal-- "the man caught in the middle" (37:1). Edwards and Burnell observed that, generally speaking, the principal's role is negative-- "he has not been defined at the time of this study and that principals find themselves "on the fence," coming under the fire of teacher groups as well as boards of education (41:311). Tompkins has noted this role conflict:

Traditionally, the principal has acted both as the representative of the board and the superintendent, and as the spokesman for the teachers before the superintendent and the board. With the increased recognition of the right of the teachers and their chosen representatives to negotiate directly with the board, the principal's dual function has been challenged. In the light of such role change and conflict, it is understandable that the principal's new function is not clear. Even in states with legislation covering membership in collective bargaining groups, the divisions frequently fail to define, or to define clearly, the place of the principal in the negotiation process (37:2).

Local Teachers' Organizations

among school districts which encompassed many small schools within a small geographical area. In some states it is difficult to generalize concerning the role of the principal in collective negotiations. In some states principals were separated from teaching personnel for purposes of collective negotiations. In other states principals were admitted to membership in the local teachers' organizations and were members of the bargaining unit. In still other states principals were grouped with teachers, however, they could establish their own organization if they took independent action to do so. Some diversity of approaches taken by the various states serves to indicate the rather ambiguous positions in which principals may find themselves in the early 1970's stage of the development of collective negotiations.

Through the process of collective negotiations, teachers' organizations tended to be attempting to achieve shared control over policy formulation and administrative decision making (28-1200). Watson found:

The provision of several bargaining agreements between teachers' organizations and boards of education show that increased power is being granted to teachers. Some boards, the passing of authority and control from other sources within the school to teachers may be expected to continue until a major realignment has occurred by the decision makers of the organization. The basic issue behind the principal's stance on collective negotiations is how much final authority is to be granted to teachers when important educational decisions are to be made (4-24137).

The two major negotiating groups in public schools are teachers' organizations and decision making was centralized in superintendents' organizations between teachers' organizations and boards of education. In many cases the bargaining relationship, to some extent, substituted centralized decision making for decentralized decision making on the management side (44-45).

In 1949, Anderson offered the principal three alternatives for regarding the role in policy determination he lost through direct teacher-board negotiations: (1) organize a separate bargaining unit, (2) adopt an internal structure within the school system providing representation for all administrators, or (3) combine the above two alternatives. If principals objected to negotiation, Anderson believed that they should not be represented by the same group that spoke for teachers. He saw promise in the management team concept as principals, superintendents, and boards realized their need for cooperative working relationships in negotiations with teachers (41-42). In a 1950 paper, Anderson discussed the management team as a substitute for collective negotiations for principals because he believed that effective working relationships among administrators at various organizational levels were best served by a management team approach that produced greater job satisfaction (4-12).

Collective negotiations between teachers' organizations and boards of education are ecologically

defined collective bargaining as "an organized process during the 1970s (PA) which took place in public school districts which had collectively negotiated teachers' collective bargaining contracts during 1969-1970."

### Statement of the Study

The purpose of this study was to determine if there were significant differences in the ways that elementary school principals perceived their role, depending upon whether they served as principals in public school districts which had collectively negotiated teachers' contracts during 1969-1970 or whether they served as principals in public school districts which had not collectively negotiated teachers' contracts during 1969-1970. The perceptions of principals were focused on four aspects of the role of principals: (1) knowledge and skills required by principals; (2) role as institutional head of a school; (3) role in regard to collective negotiations for principals; and (4) opinions about effects of collective negotiations by teachers on principal's role.

### Delimitations and Limitations

This descriptive study generated data using the Q-methodology as the research procedure and utilized a modification of the Q-sort developed by Ted Nelson's study at Purdue University in 1970 (40:18-40). Selected random

samples of 40 Illinois elementary school principals and 40 Florida elementary school principals were selected. Twenty-one principals from each state who served as principals in public school districts which had collectively negotiated teachers' contracts during 1969-1978 and 21 principals from each state who served as principals in public school districts which had no collectively negotiated teachers' contracts during 1969-1978 comprised the sample selected.

The limitations of a descriptive survey field study apply to this study. Generalizations from the data obtained for this study were restricted since it was limited to small samples of elementary school principals in two states who worked in public school districts either with or without collectively negotiated teachers' contracts during 1969-1978.

#### Justification for the Study

During the decade of the 1960s, the process of collective negotiations between teachers' organizations and boards of education became established in many school districts, so that by the latter half of the 1960s, books, periodical literature, and pamphlets produced by a variety of professional educational organizations often focused on the topic of collective negotiations. However, the proper place or designated role of the public school principal

which the various activities of the school are carried out and thereby in the hands of collective organizations realized into an organized fabric having the lines that remained as even in 1992 (Gallin). Within the past few years there seemed to be friction among researchers and authors of articles for professional journals to ensure the success of collective negotiations by teachers with boards of education on the principal's role. Collective negotiations meant the loss of power by school principals and they responded in a variety of ways. Watson analyzed these developments:

When teachers negotiate at length on issues such as class size, promotion, assignments, transfers, discipline of the principal is asked...There is little doubt that many principals resent the curbing of their discretionary powers and, in many cases, they are taking active steps to check or reverse the trend. There is evidence from a number of school systems that principals are beginning to write an appeal or petition as a means of securing a stronger voice in decision making...Certain principals feel that if they resist rule and procedure, things will return to "normal". Some openly resist the changes and view they will never accept them, while others have adopted a "wait and see" attitude. A few perceive the developments as an opportunity to expand their role and deal with the new demands...The concept of collective negotiations or bargaining does not mean that the management function is any less important or vital to the organization. It does, however, raise the question of who will have the special function of leading the organization to the new relationships which negotiations bring. For the principal, this dictates asking himself how he can adjust his role in order that he may maintain effective avenues for the exercise of professional and administrative leadership (W-233-24).

Principal's Role in Educational Negotiations

...and the need for the principal to be involved in the negotiation of the contract. However, as we saw earlier, the principal is identified with the current status of the negotiators (40). A neutralization of the role of the principal was agreeable to both teachers and district administrators. Trieb and Smith concluded that the school principal has to establish and sustain his job responsibility and functions amidst a high degree of accountability either to functions or others than he ought to exercise. With superintendents, in all but a few instances, delegating direct negotiations to someone else: the school district leader, the business manager, the assistant superintendent, the third negotiator, and/or the principal, the role of the principal or middle management emerges as a critically important position in educational collective negotiations (41:9-11). Trieb and Smith explained:

...The principal has to implement the words of the contract. Someone has to ensure performance in the educational setting. It is middle management. It can be no other category (41:12).

There has been little field research to determine how principals themselves perceive their roles as a result of the impact of collective negotiations between teachers' organizations and boards of education. This study attempted to provide some current data about whether or not elementary

union/professionalized. Several participants reported participating with teachers' unions, but none reported an indication of commitment toward being elementary school principals of ten states as groups tend to have regarding acceptance of the management team contract, the feasibility of independent negotiating units, or some combination of both.

### Definition of Terms

Charter School—a public school having curriculum offerings in any combination of kindergarten through grade eight or nine, including primary, intermediate, middle, junior high, and kindergarten-eight schools.

Principal—the administrative and supervisory head and official professional leader responsible for a school.

Role—behavior patterns or functions expected of or assigned out by an individual in a given societal context (S.B.70).

Teachers' Collective Bargaining—the systematic process by which teachers, through their designated representatives, negotiate with the board of education, through its designated representative(s), with reference to salary, working conditions, and other matters of interest to the negotiating parties. At the conclusion of this process, the product is a mutually agreed-upon document, which contains the terms of the negotiated contract and which binds the parties to certain actions for a specified period of time (S.B.71).

### Assumptions

1. The quantitative distances between all adjacent categories on the 4-point used in this research were assumed to be equal, and



4. Methods or techniques of variables used in the analysis generally to study them.

### Statistical Analysis

The statistical null hypothesis tested at the 5% significance level by discriminant stepwise ~~analysis~~<sup>analysis</sup> of variance techniques applied to the data collected from the Q-sort of this study were:

1. The mean of 60 Q-sort item scores for principals working in districts having had teachers' collective negotiations during 1968-1978 and principals not having had teachers' collective negotiations during 1968-1978 were not significantly different.
2. The mean of the 60 Q-sort item scores for principals working in rural districts, urban districts, or central city districts were not significantly different from each other.
3. The mean of the 60 Q-sort item scores for principals working in Florida and principals working in Illinois were not significantly different.

### Findings

#### Methods

The primary data for this study were collected by using a modification of a Q-sort developed by Ted Ulrich (1973-1974). Ulrich developed his Q-sort of 60 items by

... books, journals, and publications of professional and business organizations describing the bargaining process and the various roles of the principal in collective negotiations. Emphasis is on a technique for probing for multiple attitudes and perceptions of groups of people.

### Sample Selection

The sample consisted of elementary school principals estimated who had been employed as principals since 1960 in the public school districts of Florida and Illinois. Forty-two were selected from districts in each of Illinois and Florida. Florida encountered a statewide teachers' strike in February, 1968. Illinois encountered school district teachers' strikes in various sections of the state during the past five years. In 1979, neither state had passed a collective negotiations statute regulating public education employees.

Three categories of school districts based upon population density were developed: central city school district, urban school district, and rural school district. A central city school district was defined as having a population of 50,000 inhabitants or more living in an incorporated place within the boundaries of the school district. An urban school district was considered as being

to the extent that it is possible to make comparisons

places containing public schools (approximately 1000) school districts was identified as Florida school districts having less than 5,000 students. In this type school district boundaries. Because Florida has several school districts and Illinois has each district and each school superintendent of all in county school systems, districts were selected on comparable criteria. Information was provided by state department officials in order to classify districts as either city, urban, or rural.

At a meeting with the Executive Secretary of the Florida Association of District School Superintendents, the Executive Director of the Florida School Boards Association, Inc., and a Florida State Department of Education Consultant in Tallahassee on March 30, 1973, the author received designations of representative Florida school districts according to size and status of collective negotiations. These are listed in Table 1.

The Associate Superintendent of Public Instruction for the State of Illinois, in a letter to the author received on May 4, 1973, designated representative Illinois school districts according to size and status of collective negotiations. These are listed in Table 2.

Principals from each of the districts were assigned a number and the sample was obtained by drawing from a table of random numbers. Seven principals were

TABLE 1

CONGRESSIONAL SUBJECTS, 1900-1910

1900	Education, Higher Education, Education
1901	Education, Higher Education, Education, Higher Education
1902	Education, Higher Education, Education
1903	Education, Higher Education, Education, Higher Education
1904	Education, Higher Education, Education, Higher Education
1905	Education, Higher Education, Education, Higher Education
1906	Education, Higher Education, Education, Higher Education
1907	Education, Higher Education, Education, Higher Education
1908	Education, Higher Education, Education, Higher Education
1909	Education, Higher Education, Education, Higher Education
1910	Education, Higher Education, Education, Higher Education

TABLE I

CONSERVATIVE ENDANGERED SPECIES DATA

State	Maricopa 2122, Collective Reporting
Spells	Boyd, Jenner, Edwards
Field	Gretna City, Peckah, Lockport, Washburn, Egan, Colorado
Large	Rockford, Chicago
State	Maricopa 2122, Collective Reporting
Spells	Boyd, Jenner, Edwards, Egan, Peckah
Field	West, Denver, Coffeyville, Jacksonville, Lawrence, Kansas, Great Plains, East Colorado, Kansas
Large	Springfield, Peoria, Decatur, Quincy, Washington

principals were not informed of the purpose of the study and a posttest was conducted that they were indicate whether or not they intended to participate in the study.

Half of the Florida sample of principals was offered a summary of the study results for participating and the other half was offered five dollars as a stipend for their responses. All of the Illinois sample were offered five dollars as a stipend for participating, due to the closeness of the school year when they received their initial invitations to participate in this study. This difference in soliciting participation of principals in Florida and Illinois may confound the comparison of data by state location of principals. It was interesting to note that an offer of a stipend for participation generated a greater returned response (80 of 81) from principals in the Florida sample than the offer of a study summary (11 of 81) for participating in this study.

### Instructional

A list of 88 statements comprised the Q-sort. According to called instructions, participating elementary school principals were asked to sort the 88 situational statements on an approval-disapproval continuum having a quasi-normal forced distribution, namely, 2, 3, 6, 11, 16,

U. S. I. N. Teachers' collective bargaining agreements. The items included were previously used in several regular propositions reported on by the I. N. T. during the process of collective bargaining among groups of the collective negotiations approach. Tables 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

### Data Forecasts

In an attempt to reduce the number of variables, a factor analysis was completed. Due to the small total sample size (55 principals returned within 8-weeks), the 48 items were reduced to 17 variables which did not prove statistically useful in interpreting the data. Next, the data were subjected to stepwise discriminant analysis. The results of stepwise discriminant function analysis indicated that responses to four items yielded significant multivariate  $F$ -ratios between principals who had experienced teachers' collective negotiations and those who had not. Further, the results of stepwise discriminant function analysis indicated that responses to three other items yielded significant multivariate  $F$ -ratios among principals who worked in rural, urban, or central city wide school districts. Finally, the results of stepwise discriminant function analysis indicated that responses to another six items yielded significant multivariate  $F$ -ratios between

of the role of the individual in the process of collective bargaining (see Table VI) and the role of the individual in the process of collective bargaining (see Table VII) and the role of the individual in the process of collective bargaining (see Table VIII) and the role of the individual in the process of collective bargaining (see Table IX) and the role of the individual in the process of collective bargaining (see Table X).

### Organization of the Study in Chapters

The study has been organized in the following

manner:

- |           |  |
|-----------|--|
| Chapter I | The Design of the Study                                    |
| II        | Review of Related Literature and Research                  |
| III       | Presentation of Data                                       |
| IV        | Discussion of Data   |
| V         | Procedure Summary, Findings, Conclusions, and Implications |



## Summary 8)

Author: [Name] (Journal Title)

### Summary

The review of related literature is presented in three main parts:

1. Discussion of principal's role and collective responsibility:
  - A. Examination of the ambivalence of the principal's role;
  - B. Definition and discussion of the management role concept;
  - C. Futuristic predictions about the principal's role and collective responsibility;
2. Discussion and criticism of Goffman's theory; and
3. Summary of the review of related literature and research.

### Principal's Role and Collective Responsibility

#### Ambivalence of Principal's Role

Ulrich and Hewitt revealed the conflicting expectations held concerning the principal's role in collective responsibility. They measured the amount of agreement among rural, urban, and central-city superintendents, principals,

and teachers' organizations. The principal's role and the organizational structure of the school are important factors in determining the findings. Principals' roles are complex and require teacher organization involvement in the collective bargaining process and also the principal's role as a representative of the board of education. Secondary school teachers valued a strong teacher organization involvement and did not feel that the principal should be spokesman for the teachers' organization as well as for the board. Elementary school teachers rejected teachers organization militancy, considered the principal to be a member of the teacher organization, and looked to him for leadership. Results indicated that the principal must formulate a role for himself at the collective negotiation table or be left out.

Crowin agreed that principals will be "sold out" in the bargaining process between teacher groups and local school boards unless mechanisms are developed to strengthen the potential of principals in helping to shape school policies (P:187-189). Anderson identified the isolation of principals from the bargaining process as a serious mistake in judgment by superintendents and board members in the collective bargaining process, resulting in agreements principals found difficult to administer. In many cases, communication was in one direction to the principal (S:104-115). In their 1991 pamphlet Harvey and George noted that many school principals suddenly found

1964 study (1964) and the 1971 study (1971) of elementary school principals, finding beyond the lines given in their generalizations.

Since formal school structures are less of an hierarchy for a spot on the government side you continue from the labor side because of our managerial role. Berliner has noted in 1968 that the principal was frequently left out of the bargaining process (1968-69). English and Scharif reported that in some school districts, collective bargaining had reduced the principal to the level of shop foreman (1971).

Berliner wrote the following observation in his 1971 study of elementary school principals.

Increasingly, the elementary school principal appears to be excluded from involvement in group decision making that affects his method of leadership and determines the operating policies within his school. As school districts increase in size, the elementary school principal becomes just one more subadministrator. Policies for the allocation of resources, the employment of personnel, and the operating relationships within the district become more hierarchical and centralized. The principal, feeling in an essential that he be able to convey the needs of his school to the central administration, is concerned that he has little or no opportunity to participate in districtwide decision-making processes. He deeply resents being thought of as a "second-class" administrator and attributes much of his frustration as an elementary school principal to this discriminatory situation.

The elementary school principal is equally uneasy about his relationship to his teaching staff. His association with teachers, once close, has been weakened by the growing intensity of teacher militancy. Consequently, the principal must enforce policies decided around the bargaining table; he frequently has no voice in formulating these policies, however, nor has he the opportunity to effectively

Robert is the author of several books on school administration and he served as a consultant to the U.S. Department of Education for his leadership qualities in the 1960s.

Conflict also characterized the pre-negotiation situations and performance in negotiation. Roberts' longitudinal study that assessed the usefulness of Cross' theory of role-conflict resolution in predicting role choice by administrators who became involved in formal collective negotiations for the first time. Roberts (31) concluded that (1) the Cross theory provided a useful framework for examining internal and external environmental factors, (2) the administrator role in negotiation will increasingly identify with board expectations as older and more experienced administrators refuse to seek other responsibilities, and (3) role ambivalence characterized the subjects studied. In essence, role performance was consistent with an emerging "managerial" concept of school administration, but role preference was identified with the more traditionally oriented "instructional leader" image of the administrator.

Robert concluded that whether the principal is a manager or employee in a school system was a moot question. The principal has managerial functions and at the same time is an employee of the board of education. Robert suggested that the principal's role in negotiations should be related to and given out of the role he performs in the school system (18:87).

...the hearing conducted by the superintendent of the

...and many other factors, the superintendent

possible role the principal should play in respect to these

...individuals who are the superintendent's immediate staff. The superintendent's immediate staff should be considered in a very uncomfortable position, without an effective power base. The establishment of such a role in a satisfactory manner is a very real concern today. Some teachers feel that such individuals are basically teachers and while not currently assigned to full time teaching have such a community of interest through past service and present concern that they should belong to the teachers' group. Many teachers, as well as other individuals, feel that supervisory and curricular workers, together with principals and others who are not regularly in the classroom, are part of management and that such recognition need not diminish their concern for instruction nor inhibit their working with teachers (43:44-47).

...many felt that if these supervisory personnel were included on the superintendent's immediate team, they could serve a useful purpose by working with representatives from the teachers' team and the superintendent's team in fact-finding committees to provide information at the negotiation table. Charles Young, superintendent of Schools, Illinois State, testified to this view in 1970:

It may well be that the superintendent's most significant role is selecting the negotiating team, which in my opinion must include principals, and leading them and the board through the stages preparatory to actual negotiations. Together they must formulate objectives, guidelines, limits, and tactics from which the board's negotiating team proceeds (45:38).

Sam Lambert, National Education Association Executive Secretary, offered a different view in a 1971 report on negotiating legislation before a federal advisory

commission on labor relations in Massachusetts, Inc. 1970.

...The crucial element in the administrative system is the appropriate negotiating units and the nature of interest among the employees and the management organizations....All groups of employees have some conflicts, and it is not clear that the management is sufficiently responsive to that these conflicts can be resolved internally or whether they are so diverse that the group cannot function as a single cohesive unit vis-a-vis the representatives of management....The administrative answer of the American Association of Teachers is that first-line supervisors should always be excluded and, if the state gives a clear message the right to participate in negotiation at all, it should include that they form their own negotiating unit. The answer is based upon the theory of class consciousness - that supervisors are, in themselves, in conflict with the rank-and-file employees whom they supervise. The administrative answer of some of our affiliates, on the other hand, is that first-line supervisors should always be excluded with non-supervisory employees in a single negotiating unit. This answer is predicated upon the assumption that supervisors and rank-and-file employees are inextricably bound together by the so-called "unity of the profession"...in point of fact, both all-employee negotiating units and units excluding supervisors have succeeded in the satisfaction of management, first-line supervisor, and rank-and-file teachers in different school districts. That reality is factual reality...In short, the state should not allow the step on any development which might be effective and mutually agreeable, and should provide for the application of the most pragmatic community of interest test (R3:3).

In 1970, Eisner and Barrett stressed the importance of the principal's role as the instructional leader in the school. They presented arguments for including the principal on the teachers' negotiating team:

- (a) Administrative and faculty decisions cannot be separated rationally,
- (b) decisions cannot be less likely to be used when the principal is allied with teachers.

- (c) All bargaining units should be established on the basis of administrative functions, not on job classification, (Shannon, 1970).
- (d) Teachers' principals should have administrative educational functions, not educational, and
- (e) teachers and principals are both members of the board of education (11-2181).

Other writers see the pressures of collective negotiation pushing all administrators closer together. Shannon observed in 1970 that all administrative roles were changing and that the principal was becoming less a feudal lord in his school and more a part of a management team. Shannon believed the principal was a central figure in collective negotiations, grievance procedures, and strikes, because he was the administrator who must work most closely with teachers after disputes were settled (13:51-56).

Underwood held a similar view but noted a conflict in 1969 (23-46). He cited National Education Association Research Service figures indicating that 92 percent of all the school districts in one survey reported administrator salaries were attached to teacher salary schedules. He considered this a contradiction of the current management team approach that defined all administrators as part of the superintendent's team. Underwood proposed that principals and all other administrators be paid on a separate administrative schedule. This would result in a highly committed and closely knit administrative staff that was functionally as well as ideologically bound to management.

In the past, school and professional associations of professionals of teachers' unions have been. In 1976, according to Lickerson, the very top of school management (principals, assistant principals, superintendents, and department chairs with administrative functions such as hiring) supported collective negotiations (see Schultz (1976)). The issue was whether middle management, feeling bypassed in teacher-board negotiations, would conduct its own negotiations with the board. Lickerson noted, however, that there were better methods of gaining recognition and that board negotiating teams usually included capable middle management people (27:10-11).

In a 1968 report on administrative interest in the management role concept, Anderson described the issues as interpreted through the eyes of the principal, the superintendent, and the board of education. He offered the principal three alternatives for regaining the role in policy determination he lost through direct teacher-board negotiations: (1) organize a separate bargaining group, (2) adopt an interest structure within the school system providing representation for all administrators, and (3) combine the above two alternatives. If principals chose to negotiate, Anderson felt they should not be represented by the same group that spoke for the teachers. He was precise in the



words relating to the use of the management team approach with teachers (19:11).

In the following year a. 1961, Anderson (19:12) discussed the management team as a "committee" or "collective negotiation for principals (4:189-191)". He suggested that principals were aware of the great power and financial progress teachers gained through collective negotiation, he understood the appeal of such results to administrators. However, he believed that the limitations of collective negotiation produced long-term disadvantages to working relationships among administrators. Harvey and George concluded similarly:

In some districts, administrators have sought a voice in policy formulation solely through collective bargaining procedures similar to those adopted by teachers' organizations. This procedure has usually depended on forcing appropriate recognition of principals through a position of strength. This approach, used in isolation, could foster attitudes that are counter-productive when advice from principals and other administrators is needed to improve internal administrative conditions (19:13).

Such effective working relationships were best served by a management team approach that produced greater job satisfaction. In implementing a management concept, Anderson emphasized two factors as essential:

- (1) the acceptance by the superintendent of the desirability of involving all school administrators in administrative planning and in policy formulation, and (2) the absence of a formal structure which ensures a system of open communication with all administrators (4:177).

...the best solution is prescribed by the ...  
gaining position.

This approach requires working through an internal administrative structure to influence major decisions affecting the education system and operation of the schools. It also recognizes the need for administrative units to have a formal agreement with the board of education to protect and ensure their employment and economic benefits (19:100).

Wilder and Ferrelle reported in 1952 that in Pleasantville, New York, principals rejected the notion that they must oppose the board and yet recognized that to be effective, certain conditions were best expressed in writing. The result was a new management team contract (44:4).

Adams observed that teachers and administrators alike can be faulted for lacking an historical sense in adopting the later-management model for negotiations. Paralleling the recommendations of Hersey and George for principals, he suggested that the alternative to the continuation of administration was a deal process for negotiations, a process that entailed collaboration as well as contention between boards of education and their professional employee groups.

Negotiations on teacher salaries, fringe benefits, and general welfare of teachers can be carried on without subjecting collaborative measures to a hard line confrontation. Occasionally a mutual agreement must be arranged as an atmosphere of good faith if the deal process is to function satisfactorily.

1980-1981  
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and  
Department of Education  
relations to education

### Historical Evolution of Principals' Role and Professional Organization

Like Ambrose, Southworth found the analogy of principal and teachers to management and labor to be completely untenable. It was an attempt to make it tenable that added to the already complicated relationship existing between principals and teachers (WALMI). Southworth projected an optimistic prediction of the elementary school principalship of 1985. The features included:

The principal will recognize, and work on the basis of, the two discrete professional relationships of the teachers in his building. First, all teachers of the building are primarily teachers of the state... Second, teachers of the building form a group, with their principal, to nurture the development of the children of the building and as this group, develop loyalties to the group, and to the principal... By 1985, principals will have learned to live easily with inevitable drives between boards and teachers... By 1985 collegiality relationships among school people will have developed to the point where an easy relationship will exist, based on each group's knowing its role and participating in that role... To the principal of that time, group participation will be the basis on which he makes most of his decisions... The teachers will demand to know what the principal does, and why he does what he does; but they will not try to substitute his position as principal... What they will demand, via the negotiating tools, is clear role definitions and role differentiation... While more will be demanded of the principal in the area of professional leadership, he will have the expectation of additional salary, more clearly defined role responsibilities, and a relationship with his staff that is grounded in agreement

...will be a very difficult one to handle, especially if the principal is to be held responsible for the results. It is expected that the principal will be a very important figure in the future and will be expected to be more active in the community and to be more responsible for the success of the school system.

Frank, superintendent of schools in Quincy, Illinois, predicted the following new role for school principals:

Need for a single person in charge may provide pressure on the principal's title but in no sense will it eliminate his role. Although still in charge, he is now heading up a staff and organization. In the next decade or the next he becomes the manager, ensuring that resources are brought together in the most effective combination, always with a cautious eye to cost effectiveness and a positive program of public relations. Principals will devote an increasing portion of his time. Undoubtedly he will relinquish much of his direct supervisory role over individuals in the building (139:3012).

At the 1972 Convention of the American Association of School Administrators, Radford addressed a session on "School Management: Administrator Under or Management Team?". He made the following predictions about the principal's role and collective negotiations:

1. More consolidation laws. More states will enact statutes governing negotiation procedures either for public employees including public school personnel or for the latter separately. Twenty-nine states have such laws in 1970. It is expected that by 1975 the total will have increased to a

Principals' Association

status:

2. Principals' collective structure- The question of whether principals should be organized as a union in the negotiation process will be resolved affirmatively by state negotiation boards' rulings based on the "community of interest" doctrine which holds that the nature of duties and responsibilities assigned to principals and other administrators and supervisors identifies them as managers.
3. State's bargaining guide for public educators- Large school systems boards of education are expected to resist the trend of middle managers joining together in administrative and supervisory units for bargaining purposes, however, the decision concerning recognition procedures for these groups will be made by state level employment-relations governing bodies.
4. Small school systems will structure "meet and confer" procedures for middle managers- Meet and confer procedures to gain professional and welfare goals will be sought by middle managers in small school systems where formalized bargaining is unfeasible.
5. Issues from state and national principals' associations- State and national principal associations

For this purpose to require by law that all organizations be middle management groups.

6. Alienation between top and middle management:

Although adversary behavior across the bargaining table is appropriate for collective negotiations between top and middle management, adversary behavior need not be pursued in other operational relationships between top and middle management. Both groups will resent such alienation.

7. Collaboration across all management organizations:

There is a strong possibility that all groups in the management component will join together in a collaborative relationship, perhaps in a confederation of managers. This will be at all levels national, state, and local. Collective negotiations need not and should not invalidate overall worker-bossive relationships and work relationships (14).

In 1971, Liebman suggested that it may be that unless and until federal legislation brings about a more consistent approach to the role of middle management, especially principals and supervisors, that there will be no definitive resolution of the negotiations issues pertaining to them (15). The Advisory Commission on Labor Relations held in Washington, D. C. in 1971 concluded:



principals were uncertain if they had received all the pertinent administrative negotiations and if they were aware of what their primary responsibilities will be in ten years. Thus would prefer to remain an instructional leader in their schools; few would prefer being delegated managerial responsibilities (19-138-255).

In a letter dated July 18, 1971, from a consultant of the Florida Elementary School Principals Association to the author, a survey of elementary school principals in Florida undertaken during the 1970-71 school year indicated that more than two-thirds of the principals (211 of 317) preferred a proposed organizational pattern in which there would be a merger of all administrative and supervisory powers within the state to form an independent organization. This would agree with the Florida Educational Association and National Education Association at the conclusion of the feasibility study with each group maintaining its identity, but being served by a central secretariat (see Table 3). The data in Table 3 indicated that elementary principals in Florida preferred to maintain independent professional status as a group while maintaining a collaborative identification with other administrative groups through the designation of a central secretariat.



STATEWIDE EDUCATION ASSOCIATION

MEMBER LIST

1. Ye spruce - continue as Chapter 88 of Florida Education Association . . . . .	88
(Members-14; Non-Members-3; Not Indicated-4)	
2. Four statewide Teachers Unit open to all elementary and supervisors with strong ties with NEA and SEA . . . . .	42
(Members-30; Non-Members-6)	
3. Operate as elementary school teachers group, independent of any other administrative and supervisory organization and NEA SEA . . . . .	31
(Members-21; Non-Members-4; Not Indicated-3)	
4. Merge all administrative and supervisory groups within the state to form an independent organization, covering ties with NEA and SEA at the conclusion of the feasibility study with each group maintaining its identity, but being served by a central secretary . . . .	212
(Members-147; Non-Members-41; Not Indicated-30)	
STILLS . . . . .	14
(Members-8; Non-Members-3; Not Indicated-3)	
Total responses received . . . . .	317

### QUESTIONNAIRE DESIGN

[11] G. G. Brown (1953) *Psychological Bulletin* 59: 1-10

general term to label the groups of psychometric and statistical procedures to be developed. These procedures included the sorting of statements, phrases, or items and the correlation among responses of different subjects to the Q-sort items. Q-technique is a sophisticated form of rank-ordering of items with the assignment of numerical values or weights to subsets of the items for statistical purposes.

Springer (28) differentiated Q-sorts as being either unstructured or structured. The method used for selecting items to be included in the Q-sort determined its classification. An unstructured Q-sort is composed of items that have been assembled without specific regard to factors underlying the items. Since all of the statements presumably deal with a single broad variable, the items comprise a homogeneous population. On the other hand, a structured Q-sort contains the theory to be tested in its very construction since the items selected purposely reflect the underlying factors as determined by pilot testing and factor analysis. There is no random selection of items in a structured Q-sort. The Q-sort instrument of this study was presumed to be categorized as structured since it was a modification of Brick's structured Q-sort (40).

According to Stephenson (33), the simplest way of devising a Q-sort was to define a domain of broadened coverage

and there is considerable evidence suggesting that the isolation of such items is usually accomplished by such a procedure as that described above. It would be advantageous, however, if the instructions given for isolating such items originally allowed the investigator's domain would be functions of the domain being involved rather than a conceptualization of items which investigators could agree truly represented a given domain. Regardless of this criticism, many users of the Q-sort have used this method.

Stephens (20) suggested that a second method of designing a Q-sort involved setting initially the operational specifications of the domain being investigated. As defined by some operational criteria, all statements which comprise the specific domain are selected. From this usually large and numerous batch of items, samples of items are drawn strictly at random to form the Q-sort instrument. Miles (21) used this Q-sort design method in his research.

Black (4) again was critical of this method of item selection, for he pointed out that such a method provided no assurance that the selected Q-sort items would be an authentic replication of the abstractly defined domain. Balanced representation among items is not guaranteed and the possibilities for overbalance or omission of certain portions of the domain pose threats to the validity of the resulting Q-sorts.

*Structuring Learning Objectives of the Analysis of a 4-Card Learning Task*

Stephenson (19) conducted a learning experiment in which 4-card sets are selected randomly and the 4 cards are analyzed. Black (20) conducted a similar experiment with a 4-card analysis of various 4-card sets and reported on their verbal accounts. A 4-card analysis of a 4-card set represented the whole spectrum of the 4-card set. Black (20) believed that this method would produce 4-card results which upon analysis would bear upon the interactions of the independent variables. Such a design, in which the number of items required for the various sections of the 4-card instrument were stated in the design plan and the nature of the items were specified prior to search and selection, enabled an investigator to minimize the danger of undue weighting of unknown factors which was a potential weakness of unstructured 4-card designs.

Black (21) was skeptical that this procedure for constructing a 4-card would achieve what Stephenson purported it would. Black questioned the item search and item assignment. He asked for an explanation of appropriate criteria to be used and their applications in item selection and item assignment to specific concepts within the domain of study. Black concluded that Stephenson failed to demonstrate that this method for selecting 4-cards was effective. In their 1998 review of Stephenson's book, Grestock and Glasser (22)

constructing a list of items. The items were designed to represent a wide range of concepts and relationships. The items were:

Block (1) presents the items and definitions.

Block (2) presents the definitions and instructions. Form 1:

1. Each Q-item was to be written in a grammatically neutral form.
2. Each Q-item was to be written to suggest a conclusion, rather than to have either-or implications.
3. Each Q-item was to be written to express a single psychological "element."
4. Each Q-item was to be written to include only variables that were conceptually independent of each other.
5. It was desirable to include related, but not identical, variables in the Q-deck in order to express the many exceptions to usual correlations.
6. It was recognized that, often enough, logical or verbal opposites are not necessarily psychological opposites. Therefore, an additional component of redundancy was incorporated into the Q-deck to cope with such equivocal possibilities.

Q-technique has been criticized by some for its forced-choice feature of writing. Creech and Glass (11) wrote that this forced-choice feature was of "dubious value." In 1956 James (12) also considered the forcing feature to be a drawback. In conclusion, as have Creech and Glass, that the forced-choice procedure loses possibly important information about differences in sources that result in data to which analysis of variance techniques cannot be applied appropriately.

... the Q-sort method is a useful and powerful technique for the study of individual differences in personality. It is a method which has been used successfully in many studies and has been found to be a valuable tool for the study of individual differences.

Karliniger [22] listed many advantages of the Q-sort method in his 1959 book. He viewed the Q-sort as being affinity to theory as one of its main strengths. By definition, the structured Q-sort is linked to theory-testing. Karliniger further maintained that an investigator can use the Q-sort to assess sensitive attitudinal changes of single individuals by using analyses of variance and factor analysis of the data of structured Q-sorts. Although structured Q-sorts have not been used extensively in educational studies, Q-methodology could be used to develop theory through testing and refining based upon current data collection. Finally Karliniger observed that many people seem to enjoy sorting Q-items. Subjects find the task to be interesting because the method is realistic and challenging.

Q-sort methodology has been used successfully by educational researchers. King [23], in working with school administrators, and Curcioval [24], in working with teachers, performed research in education by using the Q-sort method.

Q-sorting has received most of its adverse criticism based upon statistical grounds. Sumland [25], Frestock and Glasser [26], and Jones [27], have provided the most notable criticisms.

... the use of Q-sorting ...

(19) ... (20) ... (21) ...

... these procedures ... of comparing the placement ...

... (22) ... (23) ... (24) ...

... the use of Q-sorting ... produce the data.

Q- methodology is controversial. It has been both  
 defined and criticized. Presently the method is not as prog-  
 ficial and encompassing as some have claimed it to be, nor is  
 it as weak and defective as some critics have described it.  
 Although it has limitations, the Q-sort can be a flexible  
 and useful tool for the educational researcher (35).

**Summary**

The introduction of direct teacher-school team  
 collective negotiation confused the role of the principal  
 in the negotiation process. Previously the chief representa-  
 tives of both the board and the teachers, the principal  
 bore an optional partispant in the new negotiations.  
 Often bypassed by the superintendents and boards, as well  
 as by teachers, principals had to choose (where legislative  
 statutes permitted) to join either the teacher or the  
 superintendant-board team. Although some principals  
 preferred to define themselves as "instructional leaders"

... the principal as a part of management and to view him in an active role as a manager's team (1945).

WILSON S. STEPHENSON has been given credit for devising the Q-sort method of data collection. This varied centers around a forced sorting and ranking of related items (statements, phrases, or words) into a specified frequency distribution. The Q-sort, as devised by Stephenson and reported in his book in 1953 (3), was used for collecting individualized data to be processed by the Q-technique, a factor analysis procedure making use of associations between test items rather than individuals. Since then, the Q-sort method has been used in various ways, some making use of Stephenson's factor analytic Q-technique and some making use of other statistics.



## CHAPTER IV RESULTS AND CONCLUSIONS

The purpose of this chapter is to report the methods used in the collection and analysis of the data for this study. Results of stepwise discriminant analyses are reported. Most of the null hypotheses are rejected and several null hypotheses are accepted. A discussion of the relationships of the findings will follow in Chapter IV.

### Collection of Data

As noted in Chapter I, the principals were selected on a random basis from the school districts in Florida and Illinois that had been identified by state officials (see Tables I and II) according to the status of teachers' collective negotiations and size of school districts. Seven elementary school principals from each category were invited to participate. Sixty-five principals indicated a willingness to participate and were mailed the 9-sort materials. Follow-up phone calls and letters resulted in the final total of 13 usable 9-sort responses being used as the data treated in this study. The distribution of the principals responding by states, negotiation status, and school district size characteristics is shown in Table 4.

TABLE 4

NUMBER OF PRIMEVAL, SECOND, THIRD, AND FOURTH GRADE, READING, WRITING, AND ARITHMETIC STUDENTS, BY GRADE AND SEX

State	Sex	Grade	Reading	Writing	Arithmetic
Florida	Boys	Primeval	4	7	6
		Second	5	7	6
	Girls	Primeval	4	7	6
		Second	5	7	6
Alabama	Boys	Primeval	4	4	5
		Second	5	6	6
	Girls	Primeval	4	4	5
		Second	5	6	6
Totals			16	18	21

1910  
1911  
1912

1913  
1914  
1915

participate voluntarily and their participation was not coerced. Their involvement, commitment, and knowledge that they would participate and receive follow-up care by phone and letter did not return their consent responses. Limitations of time and money prevented the researcher from expanding the study to include a larger sample size.

#### Analysis of Data

The following steps were undertaken in analyzing the data:

1. A factor analysis was performed.
2. A simple data description was made. The mean, standard deviation, standard error of the mean, minimum score, maximum score, and range for each Q-sort item were obtained.
3. A stepwise discriminant analysis was performed on the data grouped according to principals with or without teachers' collective negotiations experience. Next, the data was grouped according to principals who worked in rural, urban, or central city area school districts. Then, the data was grouped according to principals who worked in Florida or in Illinois.

The factor analysis computer program (FACETS, Bollen,)

reduced the 60 G-chart items to 23 factors. There was some overlapping of items. For example, item #36 (see Appendix B) appeared in five factors, whereas item #12 was not listed in any of the factors. A review of the 23 factors resulted in the judgment that the factor analysis did not provide sufficiently useful constructs to add in interpreting the data.

Next, a simple data description program (MDSOBS, Dixon,) was computed. Fourteen of the 60 items had a range of scores of three or four points, indicating that some items tended to be scored similarly by elementary school principals, whereas 46 items had a range of scores of seven or eight points indicating a wide divergence of opinion among principals (see Table 5).

The question becomes: Can the variability in item scores be related to the independent variables of: (1) experience or lack of experience with teachers' collective negotiations by a principal, (2) the size of the school district where the principal worked, or (3) the state where the principal was employed? Stepwise discriminant analyses (MDSOBS, Dixon,) of the data produced three subgroups of items useful in classifying group membership of principals in significant percentages, according to status of teachers' collective negotiations, size of the school district where they worked, and the state where they were employed. The means, standard deviations, and univariate F-ratios for

TABLE 1. (continued) *Salmonella* serotypes and their phage types

Year	Salmonella	Country	Enteric	Phage type	Salmonella	Country	Enteric	Phage type
1	7	8	9	10	11	12	13	14
2	4	5	6	7	8	9	10	11
3	5	6	7	8	9	10	11	12
4	6	7	8	9	10	11	12	13
5	7	8	9	10	11	12	13	14
6	8	9	10	11	12	13	14	15
7	9	10	11	12	13	14	15	16
8	10	11	12	13	14	15	16	17
9	11	12	13	14	15	16	17	18
10	12	13	14	15	16	17	18	19
11	13	14	15	16	17	18	19	20
12	14	15	16	17	18	19	20	21
13	15	16	17	18	19	20	21	22
14	16	17	18	19	20	21	22	23
15	17	18	19	20	21	22	23	24
16	18	19	20	21	22	23	24	25
17	19	20	21	22	23	24	25	26
18	20	21	22	23	24	25	26	27
19	21	22	23	24	25	26	27	28
20	22	23	24	25	26	27	28	29
21	23	24	25	26	27	28	29	30
22	24	25	26	27	28	29	30	31
23	25	26	27	28	29	30	31	32
24	26	27	28	29	30	31	32	33
25	27	28	29	30	31	32	33	34
26	28	29	30	31	32	33	34	35
27	29	30	31	32	33	34	35	36
28	30	31	32	33	34	35	36	37
29	31	32	33	34	35	36	37	38
30	32	33	34	35	36	37	38	39

Report (Year 1970-1971) (Chicago, Illinois: Rand Corporation, 1971).  
Teachers' collective negotiations were examined in  
the years, 1968-1969, 1969-1970, and 1970-1971.  
6-sort items by principals grouped according to size of the  
school district where they worked are shown in Appendix D.  
The means, standard deviations, and univariate function for  
6-sort items by principals according to state location are  
shown in Appendix E.

### Results of Discriminant Analysis

The results of the discriminant function analysis  
indicated that four items of the 6-sort were used to develop  
the most efficient system for identifying principals with or  
without teachers' collective negotiations. In the total  
sample of 38, there were 26 principals who had experience  
with teachers' collective negotiations and 12 principals who  
had no such experience. Items #18, #20, #22, and  
#43 identified 25 of 26 principals who experienced teachers'  
collective negotiations and 11 of 12 principals who had not.

The items that discriminated were:

- #18. The principal should be the one who is primarily  
responsible for actually expressing the demands  
of teachers to the school board.
- #22. Although principals are members of teachers' associa-  
tions, they should be able to meet separately  
with the school board to discuss their salaries.

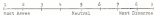
#31. They will be more likely to participate in the meeting.

#34. The negotiation process and its implementation are generally viewed as of little or no value by those who do not work with such groups.

The mean scores of the scale items administered between principals who had experience with teachers' collective negotiations and those who had not are shown in Table 6.

TABLE 6  
MEAN SCORES FOR FOUR DISCRIMINANT ITEMS: NEGOTIATION SCALE

Item Number	Negotiation Group Mean	No Negotiation Group Mean	Score t-Test
31	7.07	4.34	4.45
33	4.73	3.45	3.24
43	5.06	3.34	3.64
50	4.29	3.08	3.03



The significant multivariate *F*-values for each of four discriminant functions correlated with degrees of freedom and significant *F*-values at the .01 level indicated are shown in Table 7.

TABLE 4  
DISCRIMINANT FUNCTION

Discriminant Function:  $Y = 1.000X_1 - 1.000X_2 - 1.000X_3 + 1.000X_4 - 1.000X_5 + 1.000X_6 - 1.000X_7 + 1.000X_8 - 1.000X_9 + 1.000X_{10} - 1.000X_{11} + 1.000X_{12} - 1.000X_{13} + 1.000X_{14} - 1.000X_{15} + 1.000X_{16} - 1.000X_{17} + 1.000X_{18} - 1.000X_{19} + 1.000X_{20} - 1.000X_{21} + 1.000X_{22} - 1.000X_{23} + 1.000X_{24} - 1.000X_{25} + 1.000X_{26} - 1.000X_{27} + 1.000X_{28} - 1.000X_{29} + 1.000X_{30} - 1.000X_{31} + 1.000X_{32} - 1.000X_{33} + 1.000X_{34} - 1.000X_{35} + 1.000X_{36} - 1.000X_{37} + 1.000X_{38} - 1.000X_{39} + 1.000X_{40} - 1.000X_{41} + 1.000X_{42} - 1.000X_{43} + 1.000X_{44} - 1.000X_{45} + 1.000X_{46} - 1.000X_{47} + 1.000X_{48} - 1.000X_{49} + 1.000X_{50} - 1.000X_{51} + 1.000X_{52} - 1.000X_{53} + 1.000X_{54} - 1.000X_{55} + 1.000X_{56} - 1.000X_{57} + 1.000X_{58} - 1.000X_{59} + 1.000X_{60} - 1.000X_{61} + 1.000X_{62} - 1.000X_{63} + 1.000X_{64} - 1.000X_{65} + 1.000X_{66} - 1.000X_{67} + 1.000X_{68} - 1.000X_{69} + 1.000X_{70} - 1.000X_{71} + 1.000X_{72} - 1.000X_{73} + 1.000X_{74} - 1.000X_{75} + 1.000X_{76} - 1.000X_{77} + 1.000X_{78} - 1.000X_{79} + 1.000X_{80} - 1.000X_{81} + 1.000X_{82} - 1.000X_{83} + 1.000X_{84} - 1.000X_{85} + 1.000X_{86} - 1.000X_{87} + 1.000X_{88} - 1.000X_{89} + 1.000X_{90} - 1.000X_{91} + 1.000X_{92} - 1.000X_{93} + 1.000X_{94} - 1.000X_{95} + 1.000X_{96} - 1.000X_{97} + 1.000X_{98} - 1.000X_{99} + 1.000X_{100}$

Step	Discriminant Function	Mean of Group 1	Mean of Group 2
1	2.000 <sup>a</sup>	4.00	2.00
2	3.000 <sup>a</sup>	4.00	2.00
3	4.000 <sup>a</sup> , 13	7.00 <sup>a</sup>	3.50
4	30.000, 13, 43	7.00 <sup>a</sup>	4.50

<sup>a</sup> Significant at the .05 level.

The classification of sample principals after stepwise discriminant functions have been performed with groups who had experienced collective negotiations and those who had not are shown in Table 5.

TABLE 5  
CLASSIFICATION OF CASES INTO GROUPS:  
NEGOTIATIONS OR NO NEGOTIATIONS

Group	Number of Cases Classified Into Group	
	Negotiations	No Negotiations
1. Negotiations	22	6
2. No Negotiations	7	22



### The most preferred/undesired principal issues

Principal's responses during focus or telephone interviews reflect their views on which of the 10 issues they worked on were most preferred/undesired. To assess priority, the 0-100 scale on individual issues was converted to percent analysis. In the total sample of 22, there were 10 principal principals from rural districts, 10 principals from urban districts, and 20 principals from central city districts. Scores on items #14, #16, and #21 identified 11 of 16 rural principals, 11 of 10 urban principals, and 14 of 20 central city principals (see Table 21).

#### The items that discriminated were

- #14. The principal should recognize the importance in establishing and maintaining a sound public relations program.
- #21. Generally problems between teachers and principals result from organizational rules and regulations.
- #16. During negotiation process, the principal should represent the board of education during all phases.

The mean scores for the items that discriminated among principals who worked in rural, urban, or central city school districts are shown in Table 9.

The significant multivariate F-tests for each of four stepwise discriminant functions with degrees of freedom and significant F-scores at the .05 level indicated are shown in Table 18.

TABLE 10

MEAN AND STANDARD DEVIATION OF DISTRICT SCORES

Step Test Number	Mean	Standard Deviation	Mean	Standard Deviation
14	3.75	0.89	4.58	0.81
31	5.59	0.89	4.18	0.89
30	7.05	0.95	4.14	0.61



TABLE 11

MEAN AND STANDARD DEVIATION OF DISTRICT SCORES

Step Test Number	Mean	Standard Deviation	Distribution of Scores
1. 14	3.75*	0.89	3.18
2. 31/30	5.10*	0.88	3.49
3. 30/31, 30	6.79*	0.80	3.81

\* Significant at the .05 level.

The classification of single principals after three stepwise discriminant functions have been performed into groups of rural, urban, or central city school district are also shown in Table 11.

TABLE 12  
F-TESTS FOR SIGNIFICANT DIFFERENCES

Group	Rural	Urban	Central City
Rural	11	2	3
Urban	4	11	3
Central City	4	3	14

The matrix of F-tests is significant in identifying significant differences among principals from rural, urban, or central city school districts as shown in Table 12.

TABLE 13

F-TESTS SHOWING SIGNIF. RURAL, URBAN, OR CENTRAL CITY

Group	Rural	Urban
Urban	1.4831*	—
Central City	1.3893*	4.3334*

\* Significant when larger than 2.67 at .05 level with degrees of freedom 4, 40.

The most efficient system for identifying principals according to the state in which they worked involved their responses to six items of the Q-sort as indicated from a discriminant function analysis. In the total sample of 50,

There were 39 principals in the sample of 100 principals. Scores on items #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #13, #14, #15, #16, #17, #18, #19, #20, #21, #22, #23, #24, #25, #26, #27, #28, #29, #30, #31, #32, #33, #34, #35, #36, #37, #38, #39, #40, #41, #42, #43, #44, #45, #46, #47, #48, #49, #50, #51, #52, #53, #54, #55, #56, #57, #58, #59, #60, #61, #62, #63, #64, #65, #66, #67, #68, #69, #70, #71, #72, #73, #74, #75, #76, #77, #78, #79, #80, #81, #82, #83, #84, #85, #86, #87, #88, #89, #90, #91, #92, #93, #94, #95, #96, #97, #98, #99, #100 are shown in Table 15.

The items that discriminated were:

- #16. Inclusion of principals in the teachers' organization should weaken severely the organization's ability to provide protection for teachers.
- #17. The principal should be skilled in preparing and implementing the school budget.
- #22. During the negotiation process, the principal should act as a representative for the teachers' organization.
- #25. All matters that relate to the educational program should be considered negotiable by the school board and teachers' organization.
- # 3. During the negotiation process, the principal should refrain from taking part in negotiations, leaving negotiations to the board of education and to the teachers' organization.
- #49. Principals should shield and buffer their teachers from the central office and the board.

The mean scores for the items that discriminated between principals who worked in Florida and those who worked in Illinois are shown in Table 15.

TABLE 10  
Significance F-ratios for Discriminant Functions

Item Number	Florida	Illinois	Combined
18	6.61	8.71	8.68
17	3.87	4.82	3.78
12	6.86	7.67	6.61
17	5.80	8.28	5.81
3	6.83	7.81	6.81
19	5.74	5.73	5.82

The significant multivariate F-ratios for each of the stepwise discriminant functions with degrees of freedom and significant F-ratios at the .01 level indicated are shown in Table 10.

The classification of sample principals after six stepwise discriminant functions have been performed into groups of Florida principals or Illinois principals are shown in Table 11.

TABLE 14  
 (Continued) (Cont.) (continued from page 17)

Group	Florida	Illinois	Chi-Square	df	Significance
1	18/56	2/10*	4.94	1	0.02
2	18/56, 17	18/50*	3.94	1	0.04
3	17/56, 17, 12	16/50*	4.94	1	0.02
4	17/56, 17, 14, 17	14/50*	3.94	1	0.04
5	14/56, 17, 12, 10, 3	14/50*	6.94	1	0.00

\* Significant at the .01 level.

TABLE 15

CLASSIFICATION OF GAMES INTO GROUPS: FLORIDA OR ILLINOIS

Group	Number of Games Classified Into Group	
	Florida	Illinois
Florida	31	3
Illinois	3	18

## Acceptance of Teachers' Collective Negotiations

When the statistical null hypotheses were tested at the .05 confidence level, by discriminant stepwise analysis, for principals according to whether or not they had experience with teachers' collective negotiations during 1969-1970, it was found that 58 of the means for the 10 4-part items were not significantly different and the null hypotheses for 54 items were accepted. The means of only four items, namely, #18, #23, #25, and #28, were significantly different and discriminated even at the .01 confidence level between 75 percent of the principals with or without experience in teachers' collective negotiations. The null hypotheses for items #19, #20, #24, and #26 were rejected.

When the statistical null hypotheses were tested at the .05 confidence level by discriminant stepwise analysis, for principals according to whether they worked in central city, urban, or rural districts, it was found that 58 of the means for the 10 4-part items did not have significant univariate F-ratios and the null hypotheses for these 58 items were accepted. The means of items #18 and #21 were significantly different and when joined with responses to item #28 (significant multivariate F-ratio only) formed a system which discriminated among 45 percent of the principals according to the size of the district where they worked. The null hypotheses for items #19 and #24 were rejected.

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of the .05 confidence level of (univariate) repeated measures for principals according to whether they worked in Florida or in Illinois, it was found that 13 of 45 items were not significant. Null hypotheses for 45 items were accepted (see column 4). The names of items #16, #17, #18, and #27 were classified different and when joined with responses to items #3 and #5 (significant multivariate F-ratios only) formed a system which discriminated between 95 percent of the principals according to whether they worked in Florida or in Illinois. The null hypotheses for items #16, #17, #18, and #27 were rejected. Other items which had significant univariate F-ratios resulting in the rejection of their null hypotheses were #13, #14, #15, #19, #20, #22, #23, #24, #25, #26, #28, #29, and #30.

### SUMMARY

A factor analysis of the 46-item Q-sort was performed and resulted in the judgment that it did not provide sufficiently useful constructs to aid in interpreting the data. Twenty-three factors with overlapping of items were produced.

A simple data description resulted in 24 items having a narrow range of three or four points and 12 items having a range of seven or eight points.



and Illinois. The results of the analysis of the 60 items are as follows: 28 items were related to the state where the principal worked by small amounts of variation being related to negotiation status and district size. Fifteen of the 60 items were univariate F-tests that indicated significantly different mean scores between principals who worked in Florida and principals who worked in Illinois. Only five of 60 items had significant univariate F-tests that indicated significantly different mean scores between principals who had experienced teachers' collective negotiations and those who had not. Only ten of 60 items had significant univariate F-tests that indicated significantly different mean scores among principals who worked in central city, urban, or rural school districts.

When stepwise discriminant analyses were performed, it was found that principals could more accurately be classified by state, followed by negotiation status and district size.

Responses to a set of six items classified accurately 66 percent of the principals according to whether they worked in Florida or in Illinois. Responses to a set of four items grouped correctly 75 percent of the principals according to whether or not they had experience with teachers' collective negotiations. Responses to a set of three items classified correctly 65 percent of the principals according to the size of the district where they worked.

CHAPTER 3  
DISCRIMINANT FUNCTION ANALYSIS

The purpose of this chapter is to discuss the relationships of the findings reported in Chapter 2. Discriminant function analysis was the statistical technique which provided the most meaningful treatment of the 2-sort data. It combines the results of a whole series of measurements in such a way as to optimally predict to which one of several groups or classes of people an individual case belongs. Three different analyses were performed and all three provided significant multivariate discriminations that require examination.

DISCRIMINANT ANALYSIS: NEGOTIATION STATUS

The results of the discriminant function analysis indicated that four items of the 2-sort developed the most efficient system for identifying principals with or without teachers' collective negotiations. In the total sample of 55, there were 26 principals who had experience with teachers' collective negotiations and 29 principals who had no such experience. Items #10, #18, #23, and #45 identified 20 of 26 principals who experienced teachers' collective negotiations and 18 of 29 principals who had not.

principals with experience in teachers' collective negotiations (principals with such experience were not identified as having such experience with teachers' organizations), they were more likely to act consistently with the school board of districts with teachers. This finding tended to substantiate that teachers' collective negotiations reduce the group membership identification of the principal with teachers in matters of professional salary and welfare benefits. Principals with teachers' collective negotiations experience were more apt to such a decrease group identification in matters of personal benefits.

Principals with experience in teachers' collective negotiations disagreed more strongly than principals without such experience with item #28 that the principal should be the one who is primarily responsible for formally presenting the demands of teachers to the school board. This finding should be expected since principals in districts without teachers' collective negotiations are usually viewed as being charged with the responsibility for communicating the demands of teachers to the superintendent or school board. A major function of teachers' collective negotiations is to establish direct communication between school board and teachers concerning their demands and by-passing both the principal and district administration as either spokesman for teachers or communication links between teachers and the school board.

collective bargaining experience. Principals with such experience with collective bargaining contracts did not for administrative matters. When facing issues as asserted since principals who have no bargaining contracts specifying working conditions generally have a wide latitude of discretion in scheduling the nature and number of small sessions. Principals who experienced teachers' negotiated contracts generally find limitations placed upon them in terms of the number, duration, and nature of the matters that can be discussed at staff meetings. Generally, principals who work with negotiated teachers' contracts develop other methods, such as, individual conferences, staff news, or oral announcements, for handling administrative matters and reserve staff meetings for discussion of such matters as curriculum, public relations, or in-service education sessions.

Principals without experience in teachers' collective negotiations agreed more than principals with such experience with Item #30 that the principal should have an understanding of pressure groups and be able to cope successfully with such groups. This finding was not anticipated in advance by the researcher. Upon reflection, it appeared that a plausible explanation could be that formalization of teachers' demands through collective negotiations clarified teachers' demands for the principal and the

responses (sampled at intervals) were analyzed using  
 the paired t-test. The results of the analysis are  
 indicated below and summarized in Appendix A. The  
 written document. The process of writing the document  
 was limited to a narrow circle of school personnel  
 for both parties with a stated preference for  
 the five differences of interpretation. Written documents  
 which raise expectations and acceptable behavior by  
 school personnel gave greater security to such persons lacking  
 confidence, principals without a teachers' negotiated  
 that may lead to feel greater need for saying successfully  
 with demands by teachers.

### Discriminant Analysis District Size

The most efficient system for identifying principals  
 according to the size of the school districts in which  
 they worked involved their responses to three items of the  
 Q-sort resulting from a discriminant function analysis. In  
 the total sample of 55, there were 16 principals from rural  
 districts, 18 principals from urban districts, and 21  
 principals from central city districts. Scores on items  
 #14, #28, and #31 identified 11 of 16 rural principals, 11  
 of 18 urban principals, and 14 of 21 central city principals.

Were central city principals then urban or rural  
 principals and were urban principals then rural principals  
 agreed with item #14 that the principal should recognize the

principals in rural areas are less likely to be perceived as being more philosophically oriented. This suggests that rural principals are more likely to be seen as being more concerned with the practical aspects of running their schools than their urban counterparts. The questionnaire also indicates that rural principals feel that an evaluation of their effectiveness by their superiors depends upon the degree to which they are perceived harmoniously with the public which their schools serve. Public relations tend to be taken for granted by rural principals since personal relationships are viewed often as an implicit, natural part of the job which usually does not require formal program planning and specification of activities.

Principals in the order of central city, rural, and urban disagreed with item #10 that generally problems between teachers and principals result from organizational rules and regulations. This finding should be expected since principals from the central city school districts often have a greater volume of bureaucratic rules and regulations which govern their respective behaviors. Generally, the more specification of rules and regulations, the less discretion and cause for misunderstanding to result between principals and teachers. It is difficult to explain why rural principals tended to disagree and urban principals tended to be neutral toward this statement, except to suggest that rural principals may have believed that organizational

related research, and... (faded text)

Principal of... (faded text) ... central city... (faded text) ... process... (faded text) ... during all phases... (faded text) ... line... (faded text) ... generally... (faded text) ... teachers'... (faded text) ... representative... (faded text) ... group... (faded text) ... as... (faded text) ... for the... (faded text) ... of... (faded text) ... which... (faded text) ... usually... (faded text) ... is the... (faded text) ... role... (faded text) ... of the... (faded text) ... rural... (faded text) ... superintendent... (faded text) ... of schools... (faded text) ... Central... (faded text) ... city... (faded text) ... principals... (faded text) ... are... (faded text) ... separated... (faded text) ... from... (faded text) ... teachers'... (faded text) ... organizations... (faded text) ... for... (faded text) ... purposes... (faded text) ... of... (faded text) ... collective... (faded text) ... negotiations... (faded text) ... and... (faded text) ... form... (faded text) ... an... (faded text) ... advisory... (faded text) ... group... (faded text) ... to... (faded text) ... the... (faded text) ... board... (faded text) ... in... (faded text) ... preparation... (faded text) ... for... (faded text) ... teachers'... (faded text) ... negotiations... (faded text) ... and... (faded text) ... may... (faded text) ... form... (faded text) ... a... (faded text) ... middle... (faded text) ... management... (faded text) ... group... (faded text) ... that... (faded text) ... represents... (faded text) ... its... (faded text) ... own... (faded text) ... interests... (faded text) ... independent... (faded text) ... of... (faded text) ... teachers... (faded text) ... or... (faded text) ... board... (faded text) ... of... (faded text) ... education... (faded text) ...

Discriminant Analysis: State Location

The most efficient system for identifying principals according to the state location where they worked involved their responses to six items of the Q-sort resulting from a discriminant function analysis. In the total sample of 55, there were 74 principals from Florida and 21 principals from Illinois. Scores on items #4, #17, #18, #23, #3, and #49 identified 31 principals from Florida and 13 principals from Illinois.

Principals from Florida agreed more strongly than principals from Illinois with item #17 that the principal should be skilled in preparing and implementing the school budget. This finding may be related to the function of district vice that Florida principals have greater authority over than Illinois principals. A greater feeling of working protectively for their teachers by Florida principals was the landmark of the state's "teachers' strike in 1968 when many teachers and principals stood together and bore the impact of negative public reaction to this event. Some principals and teachers left their positions and generally the resulting board action received by striking teachers and sympathetic principals was similar. A willingness to defend their teachers was rare characteristic of the Florida principals' sample than Illinois principals.

Principals from Florida agreed more strongly than principals from Illinois with item #17 that the principal should be skilled in preparing and implementing the school budget. This finding may be related to the function of district vice that Florida principals have greater



According to these findings, principals in Illinois generally perceived their principal position as being less a task and more a responsibility. This finding is consistent with the view of many school districts, and reflects a shift in the role of Illinois' principals from a more administrative role to a more leadership role. This preparation for each school was in part due to the Illinois school superintendents' emphasis on their principals. However, decentralization of budget preparation and delegation of aspects of this task by county superintendents to Florida principals becomes more necessary due to the size and number of schools contained in most Florida county school districts. Being able to exercise the skills of budget preparation and implementation permits a principal to exercise a managerial function that enhances accountability and responsibility for fulfillment of institutional goals.

Principals from Illinois disagreed more than principals from Florida with item #12 that during the negotiation process, the principal should act as a representative for the teachers' organization. This finding was consistent with other discriminant items in this analysis that indicated Illinois principals did not identify with teachers' organizational goals in the negotiation process as much as Florida principals did. Perhaps the trend shown by Illinois principals in their response to item #12 should be viewed with item #57.

Principals from Illinois disagreed more than principals from Florida with item #57 that all parties that

Illinois principals have viewed their boards as bodies that should be democratic, participative in the process, and teachers' organizations. All levels of Illinois principals felt more concerned to control the "open field" for negotiations by school boards and teachers' organizations. Since more Illinois school boards often were inexperienced in the process of collective negotiations, Illinois principals may have feared the advances gained by teachers' organizations were at the expense of their prerogatives being bargained away. Florida principals appeared to feel more relaxed about the outcomes of collective negotiations than Illinois principals did.

Principals from Florida disagreed more than principals from Illinois with item #3 that during the negotiation process, the principal should refrain from being part in negotiations, leaving negotiations to the board of education and to the teachers' organization. Florida principals appeared to desire more of an active participatory role in collective negotiations than Illinois principals. This response in combination with item #5<sup>2</sup> discussed previously in which Florida principals tended toward neutrality in regard to the scope of negotiations items may indicate more faith and optimism in the outcome of the collective negotiation process.

## Principals' Perceptions of Teacher Unionization

Florida principals' perceptions of unionization were measured and related to their perceptions of school climate and school quality. The results of the study are discussed in terms of the following characteristics in contrast to other studies:

1. Florida principals tended to feel more protective of their teachers in terms of demands upon teachers' time by the educational hierarchy;
2. Florida principals tended to be neutral about whether or not they as principals posed any threat to teachers' security;
3. Florida principals tended to be neutral about considering what the desirable scope of representation should be between teachers' organizations and school boards;
4. Florida principals tended to feel that the principals should be involved actively in some role during the negotiation process; and
5. Florida principals tended to disagree less vigorously with the idea that principals should act as a representative for the teachers' organization during the negotiation process.

Although the respondents in the survey did not indicate the frequency of using the term "collective bargaining" in their principal positions, those who indicated that they did not use the term were asked to indicate what other language they used to describe the process in legal contract form.

The discriminant analysis based on principals' perceptions of teachers' negotiations produced the following results:

1. Principals who experienced teachers' collective negotiations agreed more strongly than principals who had not that although principals are members of teachers' organization, they should be able to meet separately with the school board to discuss their salaries.
2. Principals with experience in teachers' collective negotiations disagreed more strongly than principals without such experience that the principal should be the one who is primarily responsible for actually expressing the demands of teachers to the school board.
3. Principals without experience in teachers' collective negotiations agreed more strongly than principals who had such experience that:
  - a. Staff meetings should be used for administrative matters, and

... in ... ..  
... ..  
... ..

The ... ..  
... ..

- 1. More general (intermediate) than ... ..  
principals and ... ..  
principals agreed that the principal should emphasize the importance of establishing and maintaining a sound public relations program.
- 2. More central city principals than urban or rural principals and more rural than urban principals disagreed strongly that generally problems between teachers and principals result from organizational rules and regulations.
- 3. More rural principals than urban or central city and more urban principals than central city principals disagreed that during negotiation process, the principal should represent the board of education during all phases.

The disaggregated analysis based on whether principals worked in Florida or Illinois produced the following results:

- 1. Florida principals disagreed more strongly than Illinois principals that:

2. During the negotiation process, the principal should act as a representative for the teachers' organization.

3. During the negotiation process, the principal should refer to the board of education and to the teachers' organization, leaving negotiations to the board of education and to the teachers' organization.

4. Florida principals agreed more strongly than Illinois principals that the principal should be skilled in preparing and implementing the school budget.

5. Illinois principals disagreed more strongly than Florida principals that

a. During the negotiation process, the principal should act as a representative for the teachers' organization,

b. all matters that relate to the educational program should be considered negotiable by the school board and teachers' organization, and

c. principals should shield and buffer their teachers from the central office administration and the board of education.

CHAPTER I

(Preliminary Chapter) THE PROBLEM, PURPOSE, SCOPE, AND LIMITATIONS

Background

This study was done in order to determine the effect of teachers' collective negotiations on the perceptions of principals of their role in elementary public schools.

The problem of this study was to determine if there were significant differences in the ways that randomly selected samples of elementary school principals perceived their role, depending upon whether or not they served in public school districts which had collectively negotiated teachers' contracts during 1969-1972.

The perceptions of principals were focused on four aspects of the role of principals: (1) knowledge and skills needed by principals; (2) role as institutional head of a school; (3) role in regard to collective negotiations for principals; and (4) opinions about effects of collective negotiations by teachers on principal's role.

Elementary principals in Florida and Illinois were selected and invited to participate in this study in equal number from rural, urban, and central city public school districts which had and did not have teachers'

... of the primary ...  
... percent ...  
... 10-item ...

Findings

Discriminant function analysis indicated that responses to a set of four items, namely, #18, #20, #21, and #22, formed an efficient system that classified accurately into two groups more than 75 percent of the principals according to whether or not they had experience with teachers' collectively negotiated contracts. Further, discriminant function analysis demonstrated that responses to another set of three items, namely, #14, #15, and #20 formed an efficient system that classified accurately into three groups more than 85 percent of the principals according to whether they worked in rural, urban, or central city school districts. Finally, discriminant function analysis showed that responses to a set of six items, namely, #18, #19, #21, #22, #23, and #24, formed an efficient system that classified accurately into two groups more than 90 percent of the principals according to whether they worked in Florida or in Illinois.

A factor analysis of 4-sort data was attempted, but the small sample size resulted in the production of 13 factors which often contained items that overlapped and the



relationships of  $\chi^2$  tests. The results of the  $\chi^2$  tests and the relationship with the variables of the discriminant function were examined. Most of the data did not point to a statistically significant finding that would help to explain the results. After this examination of the data in a simple descriptive way, a decision to employ discriminant function analysis was made.

### Conclusions

When discriminant analysis was performed, it was found that some of the variation in responses among principals was related to the state where they worked, followed by small amounts of variation being related to degree of experience with teachers' collective negotiations and size of the school district where principals were employed. Most of the variation in responses by principals was not attributable to the measured variables.

Fifteen of 40 items had significant univariate F-ratios that indicated significantly different mean scores between principals who worked in Florida and those in Illinois. The null hypothesis for the other 25 items were accepted. There were no significantly different mean scores for those 25 items. Further, responses to all items successfully classified 90 percent of the principals in the state where they actually worked.

Four of 40 items had significant univariate F-ratios that indicated significantly different mean scores between

different items. The results of the analysis indicated that 65 percent of the principals reported to do so. Other 50 items were identified. These items were identified. Different mean scores for these 50 items. Responses to the same four items reflecting different experiences. 75 percent of the principals reported to do so. They had had actual experience with teachers' collective negotiations.

Only two of 60 items had significant univariate F-ratios that suggested significantly different mean scores between principals who worked in central city, urban, or rural school districts. The null hypotheses for the other 58 items were accepted. There were no significant differences in mean scores for these 58 items. Further, responses to three items accurately classified 65 percent of the principals according to the size of the school district where they worked.

### Implications

A major methodological implication of this study was that in order for a factor analysis treatment of data to be effective using Q-sorting, the sample size should probably be at least twice or three times the number of items in the Q-sort. An effective factor analysis of a 60-item Q-sort would require ordinarily between 120 and 180 subjects to be an useful tool for interpreting Q-sort data.

It is recommended that a researcher should pay attention to methodological issues such as standardized procedures, provide verbal and written instructions, use a list of possible similarities and differences as a stimulus of groups of subjects. A 4-part has limited utility for groups of subjects is too small, and the researcher should be better advised to consider more strict research methodology.

Since a 4-part 4-part requires nearly one hour to complete, a second methodological implication was that the offer of a stipend provided additional incentive for participants along with the inherent interest which subjects have in the area of investigations. The offer of a stipend generated a 85 percent response from Florida principals and a 70 percent response from Illinois principals regarding whether or not they intended to participate in this study. Consideration should be given by researchers to include a stipend budget for participating subjects when they prepare field study proposals funded by grants that will involve mailed instruments and no personal contact. Savings of time in securing returns and a higher percentage of expected responses could result.

A third methodological implication was that timing appeared to be a critical factor in conducting a research field study. Conducting a field study during the period between April and the closing of school in June did not seem to bring optimal responses. Just as it has been demonstrated

... report is distributed to principals, who in turn will be the office. The ... the entire ... for child ... from principals.

A major substantive implication of this ... that teachers' collective negotiations have had an impact upon the ways in which elementary school principals perceived their role. This impact is likely to grow as teachers' organizations experience new success in winning recognition from boards of education that teachers as a group have the right to negotiate collectively with their employers. Principals seem to be growing more aware and more eager to define their place in the educational establishment. It is unlikely that principals wish to lose their management role, even if teachers, superintendents, boards of education, or the public would let them (they will not). Principals are finally taking the initiative to have some input on what their professional job role shall be. The recent FEET survey (see Table 1) indicated that Florida principals perceived the desirability of collaborating cooperatively with other school management groups, but at the same time, maintaining an independent position that may lead them eventually to seek negotiation rights for themselves as a group.

the long term, the...  
 negotiation...  
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 of roles and...  
 teachers' demands...  
 to threaten to the...  
 and students were...  
 and staff. Greater...  
 of...  
 of...  
 within...  
 The...  
 demonstrated that...  
 as perceived as...  
 if...  
 negotiations.

A third replication of this study was that there needs to be replication and enlargement of the sample size used to investigate this area. Ulrich concluded that Q-ethnology was especially useful for making comparisons of relationships within and between groups of people and it shed light on what aspects of the attitudes have changed and the possible interrelations of attitude changes within and between the general subjects (48:34). Q-methodology provides a research technique to conduct longitudinal studies. Future attitudes can be compared with present attitudes as

Finally, the current political climate demands that we be alerted to more

Finally, the current political climate demands that we be alerted to the possibilities of workers' collective negotiations as a process through their occupational organizations, in-service education, and graduate education. They need to be aware of the dangers, and they need to capitalize on its benefits. Only when principals are aware of the range of possibilities for good or ill that workers' collective negotiations contains will they be able to act in a manner that will insure that public education as an institutional process moves forward to benefit the public it serves.

XXXXXXXXXX

ARTICLE 4

COVER LETTER 1

Department of Educational  
Administration  
University of Florida  
Gainesville, Florida 32601  
April 1, 1973

Dear

Your professional opinion about your role as an elementary school principal is needed to assist us in completing a study about the elementary school principalship. You have been selected as a random choice from a sample of elementary school principals who have served either in Florida or Illinois public schools during 1960-1970. Your cooperation in this study will be appreciated. In return for your help, I shall send you a stipend of \$1,000 upon your return of a complete set of responses received before May 1, 1973.

You will be asked to register your agreement or disagreement with a set of sixty statements concerning the role of the elementary school principal. Less than one hour of your time will be needed to complete this task. Your individual responses will become part of a larger group data base and will in no way be identified individually. You are free to answer anonymously or if you choose to identify yourself, your responses will be considered confidential and will be processed objectively without personal reference.

I have served as an elementary school principal for eight years and a junior high school principal for three years in two Illinois public school districts. My resignation leaves at the University of Florida terminates in August, 1973 and I am trying to collect data before May 1, 1973. Your assistance would help us to complete this study.



Please return the enclosed postcard by April 10, 1973 indicating whether or not you wish to participate in this study. If you choose to participate, a set of materials will be sent to you immediately upon receipt of your return that you wish to participate. Thank you for your consideration of my request.

Respectfully yours,

Charles G. Wilhelm  
Research Assistant

See  
Enclosed Pre-addressed  
postcard

APPENDIX A  
COVER LETTER 2

Department of Educational  
Administration  
University of Florida  
Gainesville, Florida 32601  
April 1, 1973

Dear

Your professional opinion about your role as an elementary school principal is needed to assist me in completing a study about the elementary school principalship. You have been selected as a random testis from a sample of elementary school principals who have served either in Florida or Illinois public schools during 1968-1972. Your cooperation in this study will be appreciated. In return for your help, I shall send you a summary of the findings and conclusions of this study.

You will be asked to register your agreement or disagreement with a set of sixty statements concerning the role of the elementary school principal. Less than one hour of your time will be needed to complete this task. Your individual responses will become part of a larger group data base and will in no way be identified individually. You are free to answer anonymously or if you choose to identify yourself, your responses will be considered confidential and will be processed objectively without personal reference.

I have served as an elementary school principal for eight years and a junior high school principal for three years in two Illinois public school districts. My sabbatical leave at the University of Florida terminates in August, 1973 and I am trying to collect data before May 1, 1973. Your assistance would help me to complete this study.

Please return the enclosed postpaid by April 10, 1973, indicating whether or not you wish to participate in this study. If you choose to participate, a set of materials will be sent to you immediately upon receipt of your notice that you wish to participate. Thank you for your consideration of my request.

Respectfully yours,

Charles D. Nisbett  
Research Assistant

Enclosed: Pre-addressed  
postpaid

## APPENDIX B

### INSTRUCTIONS FOR Q-SORT

#### I. INSTRUCTIONS TO Q-SORT STATEMENTS

1. The objective of this Q-sort is to determine the principal's role as it is affected by collective responsibility by sorting 60 statements about the principal's role into 3 groups.
2. The first sorting is just a rough separation of the 60 statements into 3 categories - an **ACCUSED** category, a **NEUTRAL** category, and a **DISAGREE** category.
3. The second sorting requires you to make forced decisions by further separating these 3 categories into 3 groups - from **BEST ACCUSED** to **BEST DISAGREE**.
4. The tallying, which is to be done by you, is a recording of the statement numbers of each of the 3 groups on to the tally sheet. Only the tally sheet should be returned in the stamped enclosed envelope. You may have the copy of the Q-sort statements and do with it whatever you wish.

#### II. DIRECTIONS FOR Q-SORT

1. You are asked to make some decisions in this activity. There are no rights or wrong answers. The decisions you make will be based on your own personal feelings, ideas, and opinions.
2. There are two columns (I and II) of spaces below each of the 60 statements that follow. You are to sort the statements in this way:

##### Column I

- a. READ the first statement.
- b. DECIDE how you feel about this statement. Do you agree or disagree with this statement, or are you neutral about it? This decision is yours to make.

- c. If you agree with the statement, please mark an **A** (Agree) in Column I next to the statement. If you disagree then mark a **D** (Disagree) in Column I. If you do not feel one way or the other about the statement, then mark a **N** (Neutral) in Column I.
- d. Now do the same for each of the statements. Treat each statement independently of all the other statements. This will probably take 10 to 15 minutes. Mark as rapidly as you wish. When you have finished marking **A**, **D**, or **N** in Column I for all 40 statements, proceed to Page 17.

Phase II

1. Re-read all of the statements that you marked with an **A** in Column I. Find the two statements with which you most agree. Mark this statement with an **A** in Column II.
2. Then sort out the next 3 statements with which you most agree and mark them with a **B** in Column II. Continue in this process with 4 statements for **C**(1) and 11 for **D**(1). You may have to use some statements from your **NEUTRAL** (N) group if you do not have enough in your **AGREE** (A) group. If you have **AGREE** (A) statements left over, mark them with a **N** (Neutral).
3. Now you are to sort your **DISAGREE** (D) group. Select the two statements with which you most disagree. Mark these with a **I** in Column II. Then sort out the next 3 statements with which you most disagree and mark them with a **K** in Column II. Continue with 4 for **C**(2) and 11 for **F**(1). You may have to take from your **NEUTRAL** (N) group if you do not have enough statements in your **DISAGREE** (D) group. This sorting of the **DISAGREE** (D) statement is the same as for the **AGREE** (A) statements, except you will be working backwards from **I**(K) to **F**(1).
4. This should leave 18 statements for your **NEUTRAL** (N) group. Mark these statements with an **N**(N) in Column II. MAKE SURE THAT EACH GROUP HAS EXACTLY THE REQUIRED NUMBER OF STATEMENTS IN IT. You may shift statements from one group to another as you sort.
5. When you have finished sorting, record the number of each statement on the Tally Sheet. Follow the "Directions for Tallying". Please return only the Tally Sheet with your signature. Thank you.

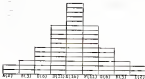
APPENDIX B  
TALLY SHEET

To receive your results, please give your signature.  
Thank you. \_\_\_\_\_

Please return this sheet only completed according to the following directions in the enclosed stamped addressed envelope. Thank you for your assistance.

Directions for Tallying

1. Find the number of the two statements with which you most agree and write those numbers in the spaces above A(1).
2. Now find the 3 statements in your B(Y) group. Write the numbers of these statements above B(1). There is one space for the number of each statement.
3. Do the same for each of the other groups. Be sure all of the 60 spaces are filled with the number of a statement.



APPENDIX B  
QUESTIONS

1. During the process of negotiations the principal should function in a manner that will bring the school board and teachers together.
2. The principal should have an understanding of the psychological makeup of children and young adults.
3. During the negotiation process, the principal should refrain from taking part in negotiation, leaving negotiations to the board of education and to the teachers' organization.
4. The principal should have working knowledge of the various theories of learning and understand their application as well as implications in curriculum development and improvement of instruction.
5. The principal should resist the increased use of formal grievance procedures initiated by teachers' organizations.
6. The principal should act as consultant to teachers' negotiating groups.
7. The principal should be proficient in developing and/or maintaining a transportation system.

8. Strong teacher organizations are needed because principals are usually "unfriendly" to people who criticize their school system.
9. The principal should have acute awareness of what constitutes good maintenance and good housekeeping practices and be able to evaluate them.
10. Principals as a group should have a cooperative relationship with the school board.
11. The principal should know how to utilize staff workers and how to secure the best possible teaching staff.
12. During the negotiation process, the principal should act as a representative for the teachers' organization.
13. The principal should attempt to prove to the school board that teachers' organizations will benefit the teachers in his school district.
14. The principal should recognize the importance in establishing and maintaining a sound public relations program.
15. The principal should have an understanding of school law and court decisions that have affected education.
16. Evaluation of principals by the teachers' organization should weaken severely the organization's ability to provide protection for teachers.
17. The principal should be skilled in preparing and implementing the school budget.



18. The principal should have a clear understanding of his role, the board of education's role, and role of his professional staff.
19. Principals should not be teachers, but managers of people.
20. During negotiation process, the principal should represent the board of education during all phases.
21. Principals should not be allowed to negotiate with the school board or its representatives.
22. The principal should be proficient in the procuring and distributing of equipment and supplies.
23. Principals should not engage in wage and salary negotiations with teachers' organization while a member of that organization.
24. Principals should often lead the operation of local teachers' organizations.
25. The principal should have an understanding of group dynamics, and be able to direct effectively a group to a particular task.
26. The principal should function as a channel and interpreter of teacher concerns to the board of education and the responsibilities and concerns of the board of education to the teachers.
27. Principals should understand and apply the principles of "democratic administration".

25. The principal should be the one who is primarily responsible for actually expressing the demands of teachers to the school board.
26. Principals should be excluded from the voting unit that represents teachers.
27. The principal should have an understanding of pressure groups and be able to cope successfully with such groups.
28. Generally problems between teachers and principals result from organizational rules and regulations.
29. Principals with other administrative personnel should form a negotiating unit, separate from teachers.
30. Although principals are members of teachers' organizations, they should be able to meet separately with the school board to determine their salaries.
31. During negotiation process, the principal should function in a dual role, by acting as advisor to school board as well as a member of a leader of the professional staff.
32. The principal should be proficient in ascertaining the wants and needs of the community, the teachers, and the children of the school.
33. Principals should be represented in collective negotiation with the school board by the local teachers' organization.
34. The principal should seek suggestions from teachers.

39. The principal should consult with teachers before making major decisions at school.
40. The principal should check closely on teachers' classroom performances.
41. Relationships between the principal and teachers should be formal.
42. The principal should be most of the talking in staff meetings.
43. The principal should allow teachers to violate minor rules.
44. Staff meetings should be used for administrative matters.
45. School decision-making should be decentralized and based on whoever has the relevant expertise.
46. School decision-making should be centralized in the hands of the principal who possesses greater authority by virtue of superordinate position.
47. Professionals should have a voice in all decisions which determine the practice of the educational profession.
48. Instructional decisions should be made mainly by the instructional staff.
49. The principal should encourage experimentation with new ways of teaching.
50. Principals should shield and buffer their teachers from the central office and the board.

49. Principals should be represented on the superintendent's negotiating team.
50. Local negotiating teams should be made up of teachers, superintendents, principals, and administrators working together in good harmony because this best serves the needs of students.
51. Principals should band together to protect their own rights by excluding strong union or teachers' organizations.
52. Collective negotiations tend to create friction between the principal and the faculty.
53. Collective negotiations should be a major step toward upgrading the teaching profession.
54. Collective negotiations should tend to enhance the principal's role of providing leadership.
55. Collective negotiations should tend to provide for better understanding and educational improvement.
56. All matters that relate to the educational program should be considered negotiable by the school board and teachers' organizations.
57. Negotiable items for teachers' organizations should be limited to salary and fringe benefits.
58. Teacher advisory committees should facilitate decision-making processes.
59. Teachers' organizations should have a visible voice in policy decisions that affect the educational program of their school system.

APPENDIX C

MEAN, STANDARD DEVIATION, AND P-RATIOS FOR ITEMS BY IDENTIFICATION STATUS

Item Number	Identified		Misidentified		P-Ratio
	Mean	Standard Deviation	Mean	Standard Deviation	
1	4.44	1.52	4.42	1.45	0.11
2	3.92	2.28	3.42	1.28	0.21
3	3.98	2.54	3.95	1.46	0.01
4	3.42	1.74	3.27	1.22	0.17
5	4.12	1.42	4.27	1.33	0.02
6	4.44	2.47	3.92	1.45	0.28
7	4.24	1.49	3.86	1.24	0.08
8	7.44	1.24	7.44	1.42	0.09
9	4.22	0.71	4.27	1.49	0.22
10	3.75	0.88	3.86	0.92	0.27
11	4.44	1.27	4.24	1.27	0.00
12	4.44	1.22	4.24	1.27	0.05
13	4.24	1.14	3.94	0.94	1.77
14	3.17	0.70	3.07	1.04	0.21
15	3.44	0.94	3.27	1.01	1.22

P OF 1. 13 at .05 level,  $\chi^2_{(1)} = 3.84$

APPENDIX C—Continued

Tree Number	Base	Standard Deviation	Base	Standard Deviation	Probable
16	6.00	1.32	6.13	1.43	6.13
17	3.86	1.82	3.92	1.93	6.50
18	6.86	1.00	6.96	1.05	6.17
19	6.73	1.75	6.79	1.86	6.21
20	6.60	1.13	6.75	1.24	3.19
21	6.24	1.15	6.33	1.18	3.37
22	4.30	0.75	4.35	1.02	6.00
23	3.63	1.47	3.73	1.71	6.23
24	6.38	1.33	6.65	1.67	6.66
25	3.28	1.16	3.37	0.95	6.00
26	6.74	1.18	6.94	1.33	3.39
27	3.26	1.86	3.37	1.86	6.06
28	7.24	1.68	6.19	1.61	18.00*
29	3.33	1.15	3.38	1.21	6.03
30	6.14	0.82	3.72	0.90	6.00*

\* 60 to 90 db .05 basal, P=4.00

APPENDIX I (continued)

1996 Priority	Area	Standard deviation	Area	Standard deviation	Area	Standard deviation	Probable
31	5-37	1-17	5-18	1-05	5-00		
32	6-38	1-61	5-35	1-05	6-51		
33	6-38	1-13	5-66	0-98	6-30**		
34	5-66	1-28	5-18	1-07	6-09		
35	6-38	1-56	5-78	1-19	5-13		
36	5-66	1-06	5-83	1-57	6-03		
37	5-30	0-98	5-13	1-02	6-03		
38	5-83	0-85	5-89	1-17	6-00		
39	5-61	1-20	5-76	1-50	6-08		
40	6-11	0-85	5-36	1-52	6-04		
41	6-30	1-15	6-02	1-14	6-57		
42	6-13	0-86	6-17	0-92	6-08		
43	5-66	1-31	5-39	0-93	6-09**		
44	5-07	1-30	4-95	1-08	6-08		
45	6-36	1-53	6-16	1-57	6-05		

\* 48 1- 30 at -85 level. Prob, 63

APPENDIX 3—continued

Tree Number	WITH Collecting Station at 100' WETTER Collecting Station				P-Baffle
	Mean	Standard Deviation	Mean	Standard Deviation	
46	4.87	1.55	3.95	1.21	6.24
47	4.86	1.88	4.89	1.68	6.68
48	3.65	1.85	3.79	1.14	6.85
49	6.15	1.31	5.51	1.19	3.83
50	4.95	1.21	4.73	1.66	6.68
51	4.85	1.60	4.65	1.73	6.88
52	3.69	1.86	3.51	1.69	4.79
53	3.15	1.88	3.61	1.64	6.19
54	4.88	0.86	3.80	0.92	6.22
55	3.74	1.12	3.74	0.99	6.88
56	4.76	1.11	4.86	0.91	6.23
57	3.64	1.62	3.64	1.39	6.89
58	3.53	1.58	4.06	1.36	4.75
59	4.69	0.97	4.79	1.11	6.18
60	4.83	1.29	4.52	1.16	6.87

n = 40 for (1, 2) at 100' level; (n=6, 6)



APPENDIX B

MEAN, STANDARD DEVIATIONS, AND P-VALUES FOR STRAITS BY STATISTICAL TEST

Item Number	TOTAL		SOUTH		NORTH		P-value
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
1	6.31	1.59	6.79	1.74	4.97	1.57	0.00
2	3.58	1.87	4.64	1.86	2.61	1.76	1.10
3	5.81	1.75	5.89	1.73	6.34	1.68	0.00
4	8.62	1.65	7.11	1.58	8.77	1.67	0.07
5	6.82	1.60	6.05	1.56	5.85	1.55	1.00
6	5.05	1.65	6.11	1.64	6.88	1.66	0.05
7	5.75	1.65	6.73	1.67	6.34	1.66	0.07
8	6.87	1.31	7.79	1.37	7.68	1.43	0.10
9	8.05	0.82	4.38	0.80	6.63	0.98	0.01
10	8.58	1.08	7.09	0.90	7.99	0.88	0.00
11	8.05	1.52	8.76	1.19	8.66	1.15	0.01
12	7.00	1.61	6.70	1.57	7.21	1.34	0.04
13	6.18	1.08	6.05	0.93	6.67	1.08	0.17
14	3.75	0.97	3.88	1.09	3.80	1.07	1.00*
15	5.83	1.41	3.77	0.77	3.65	0.75	0.00

\* at 0.05 level of significance

Appendix B—Card Layout

Data Block#	Area		Type		Secondary Area		Priority
	Base Size (M/Job)	Base Size (M/Job)	Base Size (M/Job)	Base Size (M/Job)	Base Size (M/Job)	Base Size (M/Job)	
26	6-18	1-75	6-25	1-86	1-57	1-30	1-87
27	1-87	1-88	1-86	1-88	1-93	6-97	6-93
28	2-58	1-80	2-44	6-98	2-57	1-14	6-87
29	6-06	2-01	1-05	1-69	1-04	1-05	1-61
30	1-06	1-58	6-77	1-81	6-14	1-06	1-85
31	6-13	1-25	6-55	6-98	6-89	6-98	1-87
32	4-82	1-80	4-59	6-78	4-64	6-94	6-18
33	1-75	1-91	2-87	1-86	1-57	1-14	6-95
34	6-50	1-63	6-28	6-94	6-83	1-01	1-39
35	1-50	1-90	1-11	6-96	1-87	6-70	6-97
36	6-50	1-81	6-25	6-70	6-57	1-59	6-81
37	1-87	1-90	1-09	1-13	1-18	1-50	1-89
38	6-82	1-66	6-35	1-19	6-76	1-57	6-99
39	2-06	1-15	6-39	1-11	1-38	1-39	1-58
40	4-11	6-88	4-86	6-94	1-74	6-85	6-94

\* of 1, 50 or .85 times 6-3-18

APPENDIX B—continued

Tons Available	Spot		2010		Original 2010		P-value
	Price	Standard Deviation	Price	Standard Deviation	Price	Standard Deviation	
11	\$1.19	0.63	\$1.80	1.32	\$1.34	1.23	0.000
20	\$1.22	1.14	\$1.26	1.04	\$1.83	1.45	0.23
30	\$1.80	1.16	\$1.33	1.10	\$1.26	0.85	0.07
34	\$1.68	1.62	\$1.38	1.61	\$1.52	1.20	0.38
35	\$1.81	1.16	\$1.66	1.08	\$1.33	1.11	0.76
36	\$1.97	1.08	\$1.50	1.15	\$1.19	1.30	1.31
37	\$1.69	1.20	\$1.61	1.07	\$1.38	0.80	0.33
38	\$1.33	1.06	\$1.16	0.98	\$1.61	1.61	1.61
39	\$1.34	1.14	\$1.39	1.13	\$1.89	0.94	1.38
40	\$1.26	0.99	\$1.37	1.07	\$1.43	0.83	0.02
41	\$1.18	1.11	\$1.30	0.99	\$1.37	0.97	0.91
42	\$1.43	0.99	\$1.05	1.10	\$1.64	0.98	0.08
43	\$1.49	1.03	\$1.66	1.17	\$1.71	1.10	0.13
44	\$1.31	1.13	\$1.38	1.05	\$1.60	1.17	0.57
45	\$1.03	1.05	\$1.38	1.08	\$1.30	1.18	0.66

\* At 0.10 or .05 level (p < 0.10)

Appendix B—Continued

Item Number	S-1		S-2		S-3		P-value
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
65	4.47	1.09	4.07	1.08	3.68	1.17	0.00
67	3.00	1.31	4.07	1.04	4.48	0.94	0.00
68	4.25	1.04	3.00	1.17	3.47	0.98	0.00
69	6.00	1.00	3.00	1.00	3.00	1.00	0.00
70	4.07	1.18	3.11	1.23	4.04	0.87	0.00
71	4.00	1.07	4.04	1.04	4.00	0.87	0.00
72	3.01	1.04	4.00	1.09	3.47	0.81	0.00
73	3.03	1.05	4.00	1.00	3.00	0.90	0.00
74	4.75	0.93	4.04	0.93	3.59	0.87	0.00
75	3.03	0.95	3.00	1.13	3.00	1.00	0.00
76	4.00	1.07	3.14	1.04	4.00	0.84	0.00
77	3.07	1.00	3.03	1.04	3.00	0.97	0.00
78	3.00	1.04	4.14	1.04	4.00	1.00	0.00
79	4.04	0.94	3.14	0.98	3.50	1.07	0.00
80	3.00	1.00	4.00	1.07	4.00	0.80	0.00

\* All  $Z_s$  are at .05 level.  $P < 0.10$

APPENDIX B

MEANS, STANDARD DEVIATIONS, AND P-VALUES FOR ITEMS BY GRADE

Item Number	Female		Male		Female
	Mean	Standard Deviation	Mean	Standard Deviation	
1	4.47	1.87	4.06	1.33	0.36
2	2.92	1.73	2.57	1.28	0.85
3	4.08	1.40	3.80	1.69	0.27
4	2.37	1.42	2.02	1.38	1.26
5	4.26	1.48	3.91	1.50	0.66
6	5.08	1.50	4.73	1.71	0.30
7	4.36	1.62	3.80	1.30	1.16
8	7.64	1.22	7.14	1.55	1.77
9	4.39	0.87	4.18	1.24	0.15
10	3.88	0.99	3.60	0.81	0.00
11	2.58	1.26	2.33	1.31	0.30
12	6.46	1.13	7.66	1.86	19.41*
13	3.83	0.92	4.81	1.16	7.31*
14	3.11	1.14	3.89	0.83	6.00
15	3.61	1.01	3.66	0.96	0.07
16	6.67	1.24	5.89	0.99	24.14*
17	3.47	0.99	4.42	1.03	11.77*
18	2.85	0.97	1.93	1.07	18.98*
19	7.17	1.58	6.99	2.14	4.40*
20	4.64	1.22	4.57	1.38	0.64
21	6.73	0.97	6.19	1.28	3.41
22	4.61	1.15	4.57	0.81	0.02
23	6.08	1.02	5.09	1.44	8.98*
24	6.17	1.26	7.14	0.82	9.31*

\* df 1, 9) at .05 level F=4.00

APPENDIX B—Continued

Title Number	Florida		Tennessee		T-ratio
	Years	Standard Deviation	Years	Standard Deviation	
25	3.69	0.97	3.87	1.03	0.05
26	4.41	1.45	4.70	1.26	0.02
27	3.45	1.15	3.76	1.79	3.54
28	6.89	1.66	7.23	0.83	3.08*
29	6.17	1.19	4.95	0.86	16.63**
30	4.63	0.83	3.80	0.62	0.68
31	5.58	1.35	5.66	1.23	0.16
32	5.60	0.97	4.76	1.54	3.75
33	5.69	1.22	5.14	0.96	0.03
34	5.29	1.33	5.60	1.64	2.27
35	6.47	1.28	4.71	1.00	0.54
36	5.50	1.28	6.71	1.14	16.40**
37	3.67	0.97	3.20	1.00	2.69
38	3.97	0.45	3.76	0.59	0.32
39	3.70	1.16	3.61	0.63	0.05
40	6.17	1.29	5.80	0.74	1.39
41	4.78	1.81	6.09	1.26	4.69**
42	6.39	0.93	5.93	0.90	1.74
43	5.63	1.04	5.57	1.08	0.30
44	5.05	1.40	4.15	1.28	0.07
45	6.26	1.54	6.23	1.57	0.00
46	3.94	1.09	4.14	1.06	0.64
47	4.62	1.36	4.95	0.92	0.12
48	3.78	1.11	3.78	1.09	0.03
49	5.73	1.53	5.93	1.46	0.37
50	4.97	1.54	4.98	1.23	0.86
51	4.26	1.84	5.57	1.32	7.93**
52	5.75	1.20	5.28	0.64	3.15
53	5.67	1.80	4.99	1.36	5.27**

\* at 1, 50 and .05 level. T=4.00

APPENDIX B—Continued

Test Number	Producers		Millions		F-ratio
	Mean	Standard Deviation	Mean	Standard Deviation	
54	4.96	0.88	5.23	0.83	3.86
55	5.26	1.10	5.37	0.87	0.55
56	4.85	1.07	5.00	0.89	0.77
57	5.05	1.17	4.89	1.41	0.62*
58	5.88	1.54	5.80	1.43	0.08
59	4.94	0.98	4.46	1.07	3.78
60	4.55	1.02	5.04	1.46	4.17

\* at 1, 53 and 10% Level F=4.07

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Leonard Earl Sutton was born November 27, 1923, at Rockford, Illinois. He moved to Chicago, Illinois in 1938 and to Oak Park, Illinois in 1943. In June, 1933, he was graduated from Fenwick High School at Oak Park. He received the degree of Bachelor of Arts with a major in English and minors in history and speech from Saint Mary's College of Winona, Minnesota in June, 1939. From November, 1939 until June, 1941, he taught sixth grade and seventh grade science and math in District #70 Public Schools of Barton Grove, Illinois. From July, 1941 until June, 1944, he served as principal of the Grove School in Barton Grove, Illinois. In August, 1943, he received the degree of Master of Arts with a major in Educational Administration from Saint Mary's University in Winona, Illinois. In July, 1944, he moved to Park Forest where he served as principal of Lincoln Elementary School from July, 1944 until June, 1949 and as principal of Lincoln Junior High School from July, 1949 until June, 1959. In 1960, he earned the equivalency of an Educational Specialist in Educational Administration at the University of Chicago. He received a national honor from Park Forest Public Schools, District #53 in June, 1959 and enrolled in the Graduate


School of the University of Florida to work toward the degree of Doctor of Education.

Charles Harold Wilhelm is married to the former Julia Ellen Gehald and is the father of Dixie, Isaac, and Jane Michael Wilhelm.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

  
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Ralph F. Kachroba, Chairman  
Professor of Educational Administration

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

  
\_\_\_\_\_  
Michael T. Gaffney  
Professor of Educational Administration

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

  
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