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EDUCATIONAL ACCOUNTABILITY PROGRAM.

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1975

THE AUTHORITATIVENESS OF MICHIGAN'S  
EDUCATIONAL ACCOUNTABILITY PROGRAM

By

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## ABSTRACT

### THE AUTHORITATIVENESS OF MICHIGAN'S EDUCATIONAL ACCOUNTABILITY PROGRAM

By

Harvey Bleecher

The purpose of this work is to measure Michigan's K-8 teachers' understanding of, and attitudes toward, a state department of education demand for accountability and assessment of learning outcomes, using Barnard's theory of authority as a framework for analysis.

A thirty-two statement instrument based on Barnard's four principles of authority was developed, field tested, and mailed to 500, systematically selected, K-8 Michigan teachers so that data could be collected to determine the degree to which the teachers: (1) can and do understand the accountability and assessment communications, (2) believe the accountability and assessment communications not inconsistent with the purposes of the school organization as they understand it, (3) believe the accountability and assessment communications compatible with their personal interest, and (4) are able, mentally and physically, to comply with the accountability and assessment communications.

Three hundred eighty-four (76.8%) of the questionnaires were returned. Fifteen of these responses were not usable leaving a net usable sample of 369 (74.8%) teachers.

The purpose of the instrument was the systematic description of the understanding and attitudes of the K-8 teachers, (in terms of Barnard's theory of authority), as they are related to Michigan's accountability and assessment program.

Scale I, (consisting of subscales I-A and I-B), was the scale used to measure teacher understanding of the communications of accountability and assessment. Understanding represents nominal data. The teachers responded either "Yes" or "No" to scale statements. Teachers' responses, proportioned among those who understood and those who did not, were analyzed with the use of the chi-square statistic. When significance at the .05 level was found, a corrected coefficient of contingency was calculated to estimate the relatedness of the variables.

Scales II, (consisting of subscales II-A and II-B), III, and IV, were the scales used to measure teacher attitudes in terms of Barnard's second, third, and fourth principles. These data were ordinal, so Likert-type scales were used to make observations. The one-factor, fixed effects, analysis of variance was used to determine if significant differences, (at the .05 level), existed among the independent variables, which were: (1) sex of teacher, (2) grade level taught, (3) years of teaching

experience, and (4) district size. When significant differences were observed, the levels were analyzed by the use of Scheffe post-hoc comparisons.

Understanding was said to exist when at least 50 percent of a group of teachers scored 75 percent or more on understanding of the communications of accountability and assessment as measured on the scale. Using this criterion the K-8 teachers in this sample could be said to understand the communications of accountability and assessment.

The analysis of Scale II indicated the K-8 teachers in this sample felt the communications of accountability and assessment were inconsistent with the purposes of the school organization as they understand it. Highly experienced teachers felt most strongly that the communications of accountability and assessment were inconsistent with the purposes of the school organization as they understand it. Less experienced teachers felt least strongly that the communications of accountability and assessment were inconsistent with the purposes of the school organization as they understand it.

The analysis of Scale III indicated that the K-8 teachers in this sample felt the communications of accountability and assessment were not compatible with their personal interest. Female teachers, primary teachers, and highly experienced teachers felt this most strongly. Male

teachers, upper grade teachers, and less experienced teachers felt this least strongly.

The analysis of Scale IV indicated that the K-8 teachers in this sample felt they could not comply, physically and mentally, with the communications of accountability and assessment.

The zone of indifference is defined as the zone where communications fall when they are considered legitimate by the recipient, and where they will be carried out as a matter of course. No groups of teachers' responses were observed to fall in this zone, in this sample of K-8 teachers.

The zone where communications will not be carried out was defined in statistical terms in the context of Barnard's four principles of authoritativeness. Using these criteria, this sample of K-8 teachers theoretically will withdraw cooperation from the accountability and assessment program. This is defined as an unintended effect. This leaves the state department of education holding the authority of position as opposed to the authority of leadership, which is its goal.

## ACKNOWLEDGMENTS

It is with deep appreciation I acknowledge the help so many persons gave me. To all of you: "Thank you."

There are people who have been generous beyond the call of duty and I want to name them here.

Dr. Phil Cusick, my academic advisor and committee chairman, helped me along a rough road and was generous enough to give me the freedom to explore and grow.

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My children, Stephanie and David, were asked to sacrifice too much. I hope I will be able to make it up to them.

My wife Thelma encouraged me to go on when everything seemed hopeless. Were it not for her, I would have given up long ago.

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## CHAPTER I

### INTRODUCTION

#### Purpose

The purpose of this work is to measure Michigan's K-8 teachers' understanding of, and attitudes toward, a state department of education demand for accountability and assessment of learning outcomes, using Barnard's theory of authority as a framework for analysis.

#### Background

##### Federal Involvement

Accountability and assessment in education are concerns which have brought attention not only at the local and state levels but at the federal level as well. These are concerns which are national in scope. President Nixon, in a message on educational reform addressed to the Congress, said:

From these considerations we derive another new concept: accountability. School administrators and school teachers alike are responsible for their

performance, and it is in their interest as well as in the interest of their pupils that they be held accountable.<sup>1</sup>

The Presidential consideration was motivated, in part, by reports which indicated results were not related to expenditures. Mr. Nixon continued:

However, the best available evidence indicates that most of the compensatory education programs have not measurably helped poor children catch up.<sup>2</sup>

This Presidential attention to school reform, in terms of accountability and assessment, does not represent a sudden federal interest in education. The federal government has been directly involved in educational matters since 1787 when Congress passed the Northwest Ordinance, which authorized land grants for the establishment of educational institutions. Although Amendment X to the Constitution:

The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people.<sup>3</sup>

has been taken to mean that education is a state responsibility, Article I, Section 8 states:

The Congress shall have the power to lay and collect taxes, duties, imposts and excises, to pay the

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<sup>1</sup>U.S., President, Message, "Education Reform," Presidential Documents 6, No. 10, March 3, 1970, p. 306, Office of the Federal Register, National Archives and Records Service, Washington, D.C.

<sup>2</sup>Ibid., p. 308.

<sup>3</sup>U.S. Constitution, amend. X.

debts and provide for the common defense and general welfare of the United States; . . .<sup>1</sup>

Section 8 of Article I has provided the authority for the long federal involvement with education. Since 1787, the federal government has supported numerous educational activities including: land grants, financial grants, loans, allocations of surplus commodities and properties, and, operation of special programs.

It is of interest to consider some highlights of the federal involvement with education at this point. It can be seen this involvement has been accelerating recently.

1787 This was the year the Northwest Ordinance was passed. The Northwest Ordinance authorized land grants for the establishment of schools and other educational institutions.

1862 This was the year the First Morrill Act was passed. The First Morrill Act authorized public lands to the states for the establishment and maintenance of agricultural and mechanical college.

1867 This was the year the Office of Education was authorized under the Department of Education Act.

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<sup>1</sup>Ibid., art. I, sec. 8.

1890 This was the year of passage for the Second Morrill Act. The Second Morrill Act provided money grants for support of instruction in the agricultural and mechanical colleges.

1917 This was the year the Smith-Hughes Act was passed. The Smith-Hughes Act provided grants to states for support of vocational education.

1941 In an Amendment to the Lanham Act of 1940, Congress authorized federal aid for the construction, maintenance, and operation of schools in federally impacted areas.

1944 This was the year Congress authorized the Serviceman's Readjustment Act, the GI Bill. It provided assistance for the education of war veterans.

1958 This was the year the National Defense Education Act, (NDEA), was passed. This Act provided the following, and other, services: direct federal aid to state and local school districts for improving instruction in science, mathematics, and foreign languages, improvement of state statistical services, and loans and fellowships for students in higher education programs.

1965 This was the year of passage for the Elementary and Secondary education Act, (ESEA). Under various titles, grants were let for: education of children from low income families, expansion of school library resources, purchases

of textbooks, development of regional centers for educational experimentation, and for strengthening state departments of education. Each year since 1965, ESEA has been re-funded and expanded to include more persons and to offer more services.<sup>1,2</sup>

The funds for ESEA and NDEA are channeled through the United States Office of Education (USOE). The USOE administered 460.0 million dollars in grants in 1960. In 1973 the USOE administered 5.2 billion dollars in grants, over eleven times the 1960 figure. The largest single program the USOE administers is Title I of ESEA. ESEA is the first large-scale federal aid to education. The amount of money attached to Title I of ESEA represents a sizable fraction of the taxpayers' contribution to the Federal Government. The Titles of ESEA and their fundings for 1973 are: Title I, (educationally deprived children), 1.5 billion dollars; Title II, (library resources), 76.8 million dollars; Title III, (supplementary education centers), 142.3 million dollars; Title V, (strengthening state departments of education), 37.3 million dollars; Title VII, (bilingual education), 34.2 million dollars; and, Title VIII, (dropout prevention), 9.6 million dollars. The total

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<sup>1</sup>Kenneth A. Simon, and W. Vance Grant, Digest of Educational Statistics: 1972 Edition (Washington, D.C.: USGPO, 1973), pp. 121-23.

<sup>2</sup>National Education Association, Financial Status of the Public Schools (Washington, D.C.: NEA, 1973), pp. 22-24.

funding for these titles of ESEA came to 1.8 billion dollars in 1973.<sup>1</sup> Prudent guardianship of large sums of money requires cautionary procedures. Largely as a result of the efforts of then Senator Robert Kennedy, Title I of ESEA included an evaluation requirement for funds disbursed under the Act.<sup>2</sup> The wording of the legislation, as it refers to evaluation, is as follows:

That effective procedures, including provision for appropriate objective measurements of educational achievement, will be adopted, for evaluating at least annually the effectiveness of the programs in meeting the special education needs of educationally deprived children.<sup>3</sup>

The USOE responsibilities under Title I of ESEA are: determining funding allocations for eligibles, approving applications developing and disseminating regulations, monitoring state and local programs, providing consultation to state departments of education, reviewing and assessing progress under Title I, compiling reports for Congress, withholding funds from any state department of

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<sup>1</sup>Simon and Grant, Digest of Educational Statistics, p. 131.

<sup>2</sup>Kathryn A. Hecht, "Title I Federal Evaluation: The First Five Years," Teachers College Record 75 (September 1973):67-78.

<sup>3</sup>U.S., Congress, House, Elementary and Secondary Education Act-1965, HR2362, S-ct. 205, par. 5, 1st sess., April 11, 1965.

education which does not fulfill its obligations under Title I.<sup>1</sup>

The central thrust of ESEA is to provide financial assistance to poor children, and to all educationally deprived children living in low income areas. All states, and three fourths of the nation's school districts receive these funds.<sup>2</sup> The local school district identifies eligible, educationally deprived, children. The local school district applies to the state department of education for program approval. The state department of education requests funds from the USOE, which then makes the grant. The state department of education monitors local programs and submits effectiveness reports, and evaluations, to the USOE. The USOE establishes guideline criteria for the disbursement of funds by reducing the language of federal statute to specific operational terms. Title I of ESEA is administered by the Division of Compensatory Education in the Bureau of Elementary and Secondary Education. Monitoring of the program is carried out by area desk officers in the Operations Branch. One function of the area desk officers is to maintain liason between the USOE and the state department of education. The top administrators of the USOE are politically

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<sup>1</sup>U.S., Department of Health, Education, and Welfare, History of Title I ESEA (Washington, D.C.: Government Printing Office, 1973), p. 1.

<sup>2</sup>Ibid., p. 3.

appointed. State departments of education are able to exert influence within the USOE through their federal senators and congressmen. It has proved difficult for the USOE to withhold funds. Francis Keppel, when he was Commissioner of Education, held up funds for the Chicago school system on the grounds of possible de-facto segregation at the beginning of the 1965 school year. Mayor Daly of Chicago telephoned President Johnson. The United States Attorney General ruled that Keppel's withholding of funds was illegal and the funds were shortly thereafter released.<sup>1</sup> This is the only reported withholding of funds by USOE. The USOE's influence derives from the power of persuasion and is dependent upon the good-will of the state departments of education. The USOE's service orientation can be understood as rational behavior designed to achieve the greatest possible influence from a weak bargaining position.<sup>2,3</sup>

In 1950 the USOE staff numbered about 300 persons and the agency budget was about forty-million dollars.

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<sup>1</sup>Stephen K. Bailey, "The Office of Education and the Education Act of 1965," in Michael W. Krist, The Politics of Education at the Local, State, and Federal Levels (Berkeley, Calif.: McCutcheon Publishing Corp., 1970), p. 379.

<sup>2</sup>Jerome T. Murphy, "Title I of ESEA: The Politics of Implementing Federal Education Reform," Harvard Education Review 41 (February 1971):35-78.

<sup>3</sup>Keith Goldhammer, et al., Issues and Problems in Contemporary-Educational Administration (Eugene, Ore.: University of Oregon Press, 1967), p. 79.

In 1974 the staff can be counted in the thousands, and the budget in the billions. The pre-1965 characteristics of the USOE have been described as: atomization and specialization since the units within USOE were virtually autonomous, superannuation of staff since the average age of the staff before 1965 was fifty years, archaic financing since each department had its own budget and accountants, and anomic in reference to the rest of the executive branch since the USOE staff consciously regarded themselves as professionals and avoided the politicians in Health, Education, and Welfare. The USOE staff was radically reorganized within a two week period by Francis Keppel's deputy, Harry Loomis, in 1965. As a result of reorganization there are tendencies in the USOE toward centralization of authority, younger staff, centralized financing, and, more rational organization.<sup>1,2</sup>

### Summary

It was shown that the federal government has been involved with education since the early days of the nation. The first large scale federal aid to education is ESEA. Title I of ESEA requires objective measures of educational achievement. The USOE has grown large in staff and

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<sup>1</sup>Bailey, "Office of Education and Education Act of 1965," p. 374.

<sup>2</sup>Goldhammer, Issues and Problems, pp. 58-59.

budget, but it is politically dependent upon its client state departments of education.

### The Michigan Department of Education

#### The State

Michigan is moving toward increased rationalization of state government.<sup>1</sup> The state constitution has been recently revised as a result of a constitutional convention and has been in effect since January 1, 1964. Under the old constitution the Governor served a two year term. The mechanics of state government was distributed among 120 Boards, Commissions, and Agencies which were variously controlled and fought over by the Republican and Democratic parties. The situation was a highly politicized one in which there was constant maneuvering for the capture of fractionalized power and influence.<sup>2</sup>

The new constitution brought the stabilizing influences of a four year term for the Governor and the consolidation of state administrative agencies into not more than twenty departments, (currently there are nineteen

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<sup>1</sup>Glenn E. Heck, "The Constitutional and Legal Development of the State Board of Education as the Central Education Agency in Michigan" (Ph.D. dissertation, Michigan State University, 1973).

<sup>2</sup>Nicholas A. Masters, Robert H. Salisbury, and Thomas H. Eliot, "Michigan: The Lack of Consensus," in Michael W. Krist, The Politics of Education at the Local, State, and Federal Levels (Berkeley, Calif.: McCutcheon Publishing Corp., 1970), p. 271.

departments operative). Appointment of officials follows a pattern reflective of the compromises necessary in a situation of fractionalized power. The number of separately elected department heads has been reduced to two, the Secretary of State and the Attorney General. The Treasurer is appointed by the Governor, the Auditor by the legislature, and, the Superintendent of Education and the State Highway Commissioner are both appointed by their respective Boards. The State Highway Commission has four members and they are appointed by the Governor. There are eight members on the State Board of Education, and they are elected. The holder of the Governor's role is in a position to consolidate power in the executive branch.<sup>1</sup> The holder of the Governor's role interested in power consolidation would logically work for the elimination of elected positions within the executive branch, and toward gubernatorial selection. The legislature is bicameral and is about evenly divided with the Democratic Party holding an edge in the House. The fluid patterns of the state political system has been noted. For example:

The absence of a clear, visible pattern of decision-making in Michigan does not necessarily imply that the results achieved are less impressive than those in other states or that it is impossible to bring about wide acceptance of a policy proposal or series of proposals. But each year a new pattern emerges with

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<sup>1</sup>Caroyne Stieber, The Politics of Change in Michigan (East Lansing, Mich.: Michigan State University Press, 1970), p. 77.

the outcome in doubt until final decisions are reached.<sup>1</sup>

In April 1969 Governor Milliken established a Commission on Educational Reform to review school problems. The Commission was made up of six prominent citizens named by the Governor, who served as chairman. The Governor felt that education in the state was in "deep trouble" because monetary demands of schooling were excessive in terms of tax resources, too many youngsters were not being properly educated, and the opportunity to learn was apparently dependent on demographic and financial considerations.<sup>2</sup>

The Governor said:

More than half of our state total general fund budget goes for education. State government clearly has tried to face up financially to its responsibilities; it is now imperative that we face up to the needed reforms which will create a climate of public acceptance for investment of the additional dollars which will also be needs to improve Michigan education.<sup>3</sup>

The following fall the Governor's Commission on Educational Reform gave its report. There were seven goals and recommendations which were set out as educational objectives. They were:

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<sup>1</sup>Masters, Salisbury, and Eliot, "Michigan: The Lack of Consensus," p. 251.

<sup>2</sup>Governor William G. Milliken, "Special Message to the Legislature on Education," April 3, 1969, p. 1, Appendix A, in: Office of Planning Coordination, Educational Reform in Michigan n.p., HUD Project No. Michigan P-272, Series No. TR 111.

<sup>3</sup>Ibid., p. 3.

1. To assure to each child, no matter where he may live or what his circumstances may be, an equal educational opportunity.
2. To assign appropriate administrative and educational responsibilities to local, regional, and state levels.
3. To provide a rational financing process through which needs of local districts can be recognized and met.
4. To devise systems of testing the effectiveness and efficiency of the educational system and measuring the educational progress of our children.
5. To distribute equitably the tax burden for education in Michigan.
6. To help preserve in an appropriate and constitutional manner the educational diversity, choice, and public value offered by non-public schools.
7. To provide maximum educational benefits for children within appropriate levels of educational funding.<sup>1</sup>

In a section on state administration the Commission recommended the following:

To fix responsibility for operation of the Department of Education, we recommend that the existing State Board of Education structure and the position of State Superintendent of Public Instruction be abolished by Constitutional amendment and replaced by a State Director of Education appointed by the Governor, subject to Senate confirmation. This Constitutional amendment should be submitted to voters in the primary election of August, 1970.<sup>2</sup>

In a special message to the legislature on October 9, 1969 the Governor requested a state-wide testing

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<sup>1</sup>"Report of the Governor's Commission on Educational Reform" n.p., n.d., p. 6 (Typewritten) in Office of Planning Coordination, Educational Reform in Michigan, Appendix D.

<sup>2</sup>Ibid., p. 7.

program in the basic skills for all students in grades one, two, four, seven, and ten "to identify at the earliest possible time the individual students who are having the most difficulty in the basic skills."<sup>1</sup> The legislature, in 1969, had instructed the state department of education to begin to plan for a comprehensive and periodic assessment of the elementary and secondary pupils in the state.<sup>2</sup> The legislature passed several school reform Bills in 1970. Among them was Act No. 38, the Assessment Act, approved by the Governor on June 24, 1970. Act No. 38 provides:

A statewide program of assessment of educational progress and remedial assistance in the basic skills of students in reading, mathematics, language arts and/or other general subject areas is established in the department of education which program shall: . . .<sup>3</sup>

The Act ordered the provisions into immediate effect.<sup>4</sup>

### The Department

The State Department of Education, the State Board of Education, and the Superintendent of Public Instruction

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<sup>1</sup>Governor William G. Milliken, "Special Message to the Fall Session of the Legislature on Educational Reform," October 9, 1969, p. 6, in: Appendix E, Office of Planning Coordination, Educational Reform in Michigan.

<sup>2</sup>Michigan, Public Acts (1969), No. 307, Sec. 14.

<sup>3</sup>Michigan, Public Acts (1970), No. 38.

<sup>4</sup>Ibid.

comprise the Central Education Agency of the state.<sup>1</sup> The traditional role of the state department of education has been that of gate-keeper or guardian of the status-quo.<sup>2</sup> The State Department of Education has historically performed only three basic functions: regulation, inspection, and appeal:

The culture of the school district fostered the neglect and subordination of the state educational agency. Local school districts were developed to administer and operate the schools, and they began to guard their responsibility jealously and to assume that they had legal right to the control of public education.<sup>3</sup>

Since the passage of the National Defense Education Act in 1958 state departments of education have been the channels through which federal funds have been distributed to school districts. State departments of education have increasingly become the influential agents of the federal government. As a result of this agency, and the direct infusion of federal funds under Title V of the Elementary and Secondary Education Act of 1965, state department of education staffs have grown in size and their orientation has shifted from the purely administrative to service, and

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<sup>1</sup>Heck, "Constitutional and Legal Development," p. 269.

<sup>2</sup>James D. Koerner, Who Controls American Education: A Guide for Laymen (Boston: Beacon Press, 1968), p. 79.

<sup>3</sup>Goldhammer, et al., Issues and Problems, p. 94.

recently, to leadership.<sup>1,2</sup> Goldhammer et al., found an almost universal desire among state department of education people to improve their services and expand their roles.<sup>3</sup> In a recent report, Dr. John Porter, the present Michigan Superintendent of public instruction, reflected this strain toward leadership when he said:

There are as you well know, state agencies which are on the move and which are beginning to plan and implement meaningful evaluation strategies of their own--over and above the federal and national programs. Some of the work we are currently doing in Michigan, I think, is helping to further dispel this notion of the state agency as merely an intermediary connecting link--and a weak one at that.<sup>4</sup>

The Michigan Constitution of 1964 required the reorganization of the executive branch into not more than twenty departments. As a result of the consolidation five formerly independent agencies were transferred to the state department of education in 1965: The Tenure Commission, The Higher Education Facilities Commission, The Higher Education Assistance Authority, The State Board for Public Community Junior Colleges, and, the State Board of Libraries.

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<sup>1</sup>Heck, "Constitutional and Legal Development," p. 274.

<sup>2</sup>Edgar L. Morphet and David L. Jesser, "The Emerging Role of State Education Agencies," in: Frank J. Sciara and Richard K. Jantz, Accountability in American Education (Boston: Allyn & Bacon, 1972), p. 62.

<sup>3</sup>Goldhammer et al., Issues and Problems, p. 94.

<sup>4</sup>John W. Porter, "Evaluating Education's Products" (paper presented at the annual meeting of the Council of Chief State School Officers, San Francisco, California, 13 November 1972).

The department itself was reorganized into thirteen service areas: General Education Services; Compensatory Education; Vocational and Career Education Services; School Management; Research, Assessment and Evaluation Services; Teacher Education and Professional Development; Higher Education Planning and Coordination; Adult Continuing Education; Student Financial Assistance; State Library; Special Education; Rehabilitation; and, Departmental Services.<sup>1</sup> The state department of education is growing larger in terms of the number of persons employed and the amount of funds entrusted to its administration. In the 1966-67 budget year there were 1,195 full-time positions. The number of persons employed has steadily risen over the years. In the 1970-71 budget year there were 1965.5 full-time positions. The net increase in persons employed in this five year period was 770.<sup>2</sup> The annual operating budget for the department was 2.04 million dollars in the 1971-72 fiscal year. The appropriation was 2.29 million dollars in the 1972-73 school year. The recommended budget for 1973-74 was 2.65 million

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<sup>1</sup>Annual Report, Michigan Department of Education: 1970-71 (Lansing, Mich.: n.p., 1972), p. 3.

<sup>2</sup>Source: Michigan, Detail of State Operations and Local Benefits Budget for the Fiscal Year Ending June 30, 1967, volumes through: Detail of State Operations and Local Benefits Budget for the Fiscal Year Ending June 30, 1974, pp. J2-J3.

dollars. Approximately three-fourths of these budgets are derived directly from federal sources.<sup>1</sup>

### Summary

Michigan has been moving toward rationalization of state government. The holder of the governor's role in Michigan is in a position to consolidate greater power in the role. The present governor, Governor Milliken, has been concerned with accountability and assessment at least since 1969 when he formed a commission on educational reform. As a result of state reorganization five agencies have been added to the state department of education, which, in turn, has reorganized into thirteen sub-units. The state department of education has been growing larger in terms of positions added and funds expended.

### Accountability and Assessment

The Governor and the legislature wanted to know what two billion dollars of state treasure was buying. Act 38 of 1970 mandated the immediate implementation of assessment measures which the Governor said was the measure of accountability.<sup>2</sup> Section 14, Act 307 of 1969 ordered the planning and development of a program for comprehensive assessment of learning progress in the elementary and

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<sup>1</sup>Michigan, Executive Budget, Fiscal Year Ending June 30, 1974, pp. B71, i.

<sup>2</sup>William G. Milliken, "Making School Districts Accountable," Compact 4 (October 1970):17-18.

secondary schools of the state. Plans for educational assessment had begun even earlier within the state department of education. High-level staff persons had worked out a plan for state-wide assessment by late 1968.<sup>1</sup> This plan had as its objective the accreditation, by the state department of education, of the state's high schools.<sup>2</sup> Accreditation is presently conferred by the University of Michigan and the North Central Association.

In compliance with Act 38 of 1970 the state department of education promulgated a six part system designed to achieve educational accountability. The six parts of the system are: (1) Identification of common goals, (2) Development of performance objectives, (3) Assessment of educational needs, (4) Analysis of delivery systems, (5) Evaluation of testing systems or progress, and (6) Recommendations for improvement.<sup>3</sup>

Part three, the assessment program, is the most visible of the six part system. It has drawn the most controversy. A state publication defines the purpose of

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<sup>1</sup>C. Philip Kearney, and Robert J. Huyser, "The Michigan Assessment of Education, 1969-70: The Politics of Reporting Results" (paper delivered at the annual meeting of the American Educational Research Association, New York City, February, 1971), pp. 2-3.

<sup>2</sup>Interview with former official, Michigan Department of Education, October 8, 1973.

<sup>3</sup>Michigan Department of Education, A Position Statement on Educational Accountability (Lansing, Mich.: n.p., 1973), p. 2.

the assessment program as an attempt "to provide reliable information about the status of learning accomplishments among the state's children."<sup>1</sup> The state superintendent of instruction more specifically defines educational evaluation as "a process of obtaining for decision-making purposes, information concerning educational activities."<sup>2</sup> The educational activities thus far evaluated are reading, written English, and mathematics. The 1974-75 budget recommends the expansion of the program:

. . . to provide data about student performance in two additional curricular areas in grades four and seven; an assessment of pre-primary skills be initiated at grade one; a pilot project to design an exit assessment at grade twelve be established and initial planning for a grade ten assessment be started.<sup>3</sup>

The Governor and the legislature view assessment as a rational method of determining what over two billion dollars buys in terms of educational outcomes. The Governor and the legislature seek to expand the program. A program at the state level inevitably draws partisans and opponents. The group most opposed to accountability and assessment appears to be teachers.<sup>4</sup>

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<sup>1</sup>Michigan, Executive Budget, Fiscal Year Ending June 30, 1975, p. J-5.

<sup>2</sup>Porter, "Evaluating Education's Products," p. 3.

<sup>3</sup>Michigan, Executive Budget, Fiscal Year Ending June 30, 1975, p. J-5.

<sup>4</sup>Kent J. Chabotar, William A. Sederburg, and Lawrence J. Ladd, Implementing Educational Accountability: The Michigan Experience (East Lansing, Mich.: Michigan State University, November, 1973).

The credibility of the assessment program, and the state department of education, may have been damaged by events which took place in the 1969-70 school year. The state department of education assured local administrators that results of assessment would not be published, and that rankings of school districts would not be made. These assurances were not honored and the results were in fact published and the rankings made. These data were released as a result of strong pressures "in the persons of the Governor and the State Legislators."<sup>1,2</sup> These events have not been expunged from the memories of those concerned in the passage of three years. They are still recalled and shape the attitudes of the present.

The Governor and the Legislature view assessment as an objective measure of learning outcomes by which the effective, or ineffective, use of two billion dollars in tax funds can be judged. The referent is each child performing at least at grade level on assessment measures. For them, assessment is a direct measure of accountability, or its equivalent in this instance, responsibility. There is an implicit placement of responsibility for learning outcomes on the district, the school, and ultimately, the teacher.

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<sup>1</sup>Kearney and Huyser, "Michigan Assessment of Education," p. 8.

<sup>2</sup>Edward Wynne, The Politics of School Accountability: Public Information About Public Schools (Berkeley, Calif.: McCutchan Publishing Corp., 1972), p. 77.

The state department of education views assessment as one phase of a six-part system, each part apparently equal. For the state department of education accountability can be achieved only when the entire system has been operationalized. For the state department of education accountability is the equivalent of decision-making on the basis of a rational systems model. Teachers, as a group, may feel threatened, if their feeling is they are to meet a public standard.

If teachers feel threatened by the assessment program there is the possible risk of their passive, or active, withdrawal of cooperation from the program.<sup>1</sup> There are two problems the state department of education encounters: one is overt, the other covert. The overt problem is that the assessment feature has high salience since it is apparent within schools, within organized teacher groups, and within mass media. The covert problem is that systems themselves are a form of control and the attempt to apply a systems approach to a human group may motivate resistance. The nature of systems will be discussed in the next section.

### Summary

In 1970 the Governor supported, and the state legislature passed, legislation mandating the measurement

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<sup>1</sup>Chester I. Barnard, The Functions of the Executive (Cambridge: Harvard U. Press, 1966), pp. 85-98.

of learning outcomes in public elementary and secondary schools. The objective of this assessment is to determine the benefits derived from education in terms of its costs. The assessment program is administered by the state education department which has promulgated a six step system designed to achieve educational accountability. The state department of education is growing in size and aspiring to a leadership position. The Governor and the legislature appear most disposed toward accountability and assessment. The teachers appear to be the least disposed toward accountability and assessment.

### Systems

In this section the nature of systems will be examined and some of the more currently popular systems models will be described. It is important to do this since systems models are being introduced into school districts and the affects of systems on people in school districts is not known. It will be shown that systems are methods of control.

The central education agency in Michigan has adopted a six-step model for the achievement of educational accountability. The six steps in the model are: (1) Identification of common goals, (2) Development of performance objectives, (3) Needs assessment, (4) Delivery systems analysis, (5) Evaluation and testing, (6) Recommendations for improvement. The model can be viewed as an

information gathering system for the purpose of making decisions.<sup>1</sup> It can also be viewed as analogous to program budgeting in the business world.<sup>2</sup> Michigan's accountability model, as well as program budgeting, are examples of systems.

A system is "an organized collection of inter-related elements characterized by a boundary and functional unity."<sup>3</sup> The organization and relatedness of systems is a resultant of the imaginativeness of people since any perceived relationship can constitute a system. Shapero and Bates have expressed the idea of system relatedness as a function of perception as follows:

Every system is a subsystem of some larger system and is itself made up of a hierarchy of subsystems, subsystems, subsystems, etc., each of which is a system in its own right.<sup>4</sup>

Much of the early theoretical work in systems was performed by Norbert Wiener who studied man-machine

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<sup>1</sup>Porter, "Evaluating Education's Products," p. 12.

<sup>2</sup>John W. Porter, "Forward," in: Michigan Department of Education, A Position Statement on: Educational Accountability (Lansing, Mich.: Michigan Department of Education, 1973), p. 1.

<sup>3</sup>Charles R. Dechert, "The Development of Cybernetics," in: Charles R. Dechert, Ed., The Social Impact of Cybernetics (New York: Simon and Schuster, 1966), p. 23.

<sup>4</sup>Albert Shapero and Charles Bates, A Method for Performing Human Engineering Analysis on Weapons Systems (Wright Patterson AFB, Ohio, WADC Technical Rept. 59-784, September, 1959), p. 5.

relationships. Wiener reports he invented the word "cybernetics" by which he refers to the effective messages of control in systems.<sup>1</sup> A central concept in cybernetics is feedback (information) which enables the reduction of noise (uncertainty) so that the system can achieve balance among its parts. When there is a fixed referent for this balance, such as body temperature, it is called equilibrium. When there is a balanced relationship independent of a fixed referent the system is said to be in a steady state.<sup>2,3,4</sup> Systems are conceived to seek steady states.<sup>5</sup> Cannon was an early theorist on the tendency of systems to seek steady states. He wrote:

. . . every complex organism must have more or less effective self-righting adjustments in order to prevent

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<sup>1</sup>Norbert Wiener, The Human Use of Human Beings: Cybernetics and Society (Boston: Houghton Mifflin, 1954), p. 8.

<sup>2</sup>Chin Robert, "The Utility of Systems Models and Developmental Models for Practitioners," in: Warren G. Bennis, Kenneth D. Benne, and Robert Chin, Eds., The Planning of Change: Readings in the Applied Behavioral Sciences (New York: Holt, Rinehart, & Winston, 1961), pp. 204-05.

<sup>3</sup>Roe L. Johns, "State Organizations and Responsibilities for Education," in: Edgar L. Morphet and Charles O. Ryan, Eds., Designing Education for the Future, No. 2 (New York: Citation Press, 1967), p. 250.

<sup>4</sup>Kurt Lewin, "Quasi-Stationary Social Equilibrium and the Problem of Permanent Change," in: Bennis, Benne, and Chin, p. 235.

<sup>5</sup>Dechert, "Development of Cybernetics," pp. 11-13.

a check on its functions, or a rapid disintegration of its parts, when subjected to stress.<sup>1</sup>

The check on function and the rapid disintegration of parts is what has been termed entropy.<sup>2</sup> Entropy is the equivalent of death. Theoretically, systems can avoid entropy by the evaluation of feedback (information) which can be regarded as the difference between actual performance and expected performance. When the feedback loop exists within the system it is called a closed loop. When the feedback loop extends beyond the boundary of the system, into the environment, the loop is said to be open. Sensor elements monitor feedback loops reporting perceiving changes to decision-making elements which make the necessary adjustments in the system to achieve a steady state and avoid entropy. All systems have boundaries, but the boundaries of social systems are necessarily open to the environment since no social system can exist without reciprocities with the environment.

Originally, systems analysis was a model used in the physical sciences to explain symbolically how information was processed by machines and later by man-machine combinations. The theoretical model has diffused from the physical science to the social sciences. The diffusion was facilitated because many of the early theorists were

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<sup>1</sup>Walter B. Cannon, The Wisdom of the Body, quoted in Boguslaw, p. 21.

<sup>2</sup>Wiener, Human Use of Human Beings, p. 22.

engineers and executives in large corporations who wrote in non-technical terms.

Systems models have been adopted for use in the aerospace industry and the automotive industry. The Federal Government has used systems approaches. Michigan is leading in a systems approach to achieve accountability. When systems are composed of human elements the specificity and predictability are much reduced. Each person is himself an autonomous system. He associates with other persons who are also autonomous systems. They form still other systems within the planned system. The literature reveals few systems models successes and many systems models failures. Following will be a description of three popular systems models applied to human groups, PERT, MBO, and PPBS.

#### PERT

The Planning, Evaluation, Review Technique (PERT) is a goal oriented, linearly programmed, time schedule, ordering of work sequences. It is similar to other techniques variously called Critical Path Methods, (CPM), or, Network Analysis (NA). The Critical Path Methods are techniques introduced into work sequences to reduce costs occasioned by production and assembly operations at distant points. PERT was developed in an attempt to coordinate the assembly of Polaris missiles for the Navy.<sup>1</sup>

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<sup>1</sup>Boguslaw, p. 39.

A technique was required to coordinate the efforts of the scattered elements of the project. PERT starts from the perspective of the finished product. From this perspective tasks are broken down into logical steps. The time required to perform each step is estimated in probabilistic terms. The most efficient sequencing of steps is plotted in a network diagram. The information for the sequencing is typically obtained as a result of discussion with persons at work in each element in the project. Provision is made within the system for alternatives along the critical path. PERT is a technique used to predict and control the costs and time requirements in visual terms.<sup>1</sup> Culbertson has reported that PERT has been used to manage ESEA projects.<sup>2</sup>

#### MBO

Peter Drucker, at the time an automotive corporation executive, was first to write about Management by Objectives, (MBO). Drucker's goal was the realization of the corporation's goals as interpreted by the corporate elite. It was his notion to extend the decision-making function throughout the managerial group but before this took place,

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<sup>1</sup>For full discussion of PERT see: Joseph J. Moder, Cecil R. Phillips, Project Management with CPM and PERT (New York: Reinhold Publishing Corp., 1964).

<sup>2</sup>Jack Culbertson, "State Planning for Education," in: Edgar L. Morphet and Charles O. Ryan, Designing Education for the Future No. 3 (New York: Citation Press, 1967), p. 274.

"each manager should have clearly spelled out objectives."<sup>1</sup> Decision-making among managers was a vehicle for the realization of corporate goals. As each manager became aware of his own, and the corporate objective, teamwork could be developed and this focussed effort would facilitate goal realization. It is important to note that Drucker enlarged jobs for the managerial group only.<sup>2</sup>

McGregor's conception of MBO is a distinct expansion from Drucker's limitation of decision-making to the managerial group. As McGregor envisions the process, management informs its employees of the goals they are expected to achieve. The employees are then free to arrange the work, and its scheduling, as they deem appropriate. The managers serve as consultants to their employees who have organized themselves to achieve the specified objectives. McGregor feels the employees will become self-motivating since they are no longer directed. The employees have the opportunity to escape dominance and seek autonomy. McGregor specifically reserves the right of management to determine how work will be organized. With this reservation on the organization of work employees are removed from direct control and placed under potential control. The dominance is only partially removed. Etzioni has recently expanded and endorsed this notion of

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<sup>1</sup>Peter F. Drucker, The Practice of Management (New York: Harper and Bros., 1954), p. 126.

<sup>2</sup>For full discussion refer to 1 above.

MBO.<sup>1</sup> Reported applications of this type of MBO are rare. McGregor reports a successful application in the United States. Bennis details a disastrous result of this notion of MBO in a University setting.<sup>2</sup> McGregor suggests that change should be well planned and distributed over long periods of time. He suggests five year implementation periods.<sup>3</sup>

Odiorne's notion of MBO is similar to Drucker's but contains a provision for managerial goal setting and an annual review of managerial performance in terms of set goals. Superior and subordinate managers together indentify organizational goals and areas of responsibility. The annual review of performance by the organizational elite uses the identified goals as a basis for the judgment of performance. The manager here, as in Drucker's plan, is free to organize his department in order to achieve his objective. It can be seen there is high risk for the manager since his progress and continuation are dependent upon performance in terms of the realization of his stated

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<sup>1</sup>Amitai Etzioni, "For Authority: New Style," Sociology of Education 37 (October 1973):546-47.

<sup>2</sup>Warren Bennis, "The Sociology of Institutions, or: Who Sank the Yellow Submarine?" Psychology Today (November 1972):112-19.

<sup>3</sup>For full discussion see: Douglas McGregor, The Professional Manager (New York: McGraw-Hill, 1967), pp. 84-111.

goals.<sup>1</sup> The effect of this plan can be expected to be the reduction of risk-taking by the setting of assured goals since managerial survival is dependent upon successful completion of the objective. The reduction of risk-taking increases predictability. Prediction enhances the possibility of control by the organizational elite.

It can be seen that there are at least four notions of MBO. Each plan attempts to enlarge the number of persons involved in the decision-making processes of an organization in an attempt to realize organizational goals. McGregor and Etzioni conceive the people in the rank and file as those best located to organize decision-making to achieve objectives. The organizational elite determines objectives and how decision-making will take place. Drucker and Odiorne confine decision-making to managers only. The organizational elite determines objectives in consultation with managers. Managerial performance is judged by the degree of attainment of stated objectives. MBO is systemic since goal achievement is evaluated by managers who make necessary corrections. In systemic language, output is evaluated by decision-making elements which make necessary corrections after receiving feedback.

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<sup>1</sup>For full discussion see: George S. Odiorne, MBO: A System of Managerial Leadership (New York: Pitman Publishing Corp., 1965).

PPBS

Since Planning, Program, Budgeting Systems, (PPBS) is the analogue of the Michigan Accountability Model it is important to discuss it in detail.<sup>1</sup>

PPBS is a combination of cost accounting techniques and systems analysis. It is used principally in Federal agencies and also in some state agencies. In PPBS goals are clearly stated in objective terms, then benefits in terms of costs are evaluated in relation to the attainment of the stated goal. The main purpose of PPBS is to:

. . . rationalize policy-making by providing (1) data on the costs and benefits of alternative ways of attaining proposed public objectives, and (2) output measurements to facilitate the effective attainment of chosen objectives.<sup>2</sup>

A crucial feature of PPBS is the construction of a symbolic model detailing the ordered steps by which the organizational goal may be achieved. The model describes the relationship between what resources are put into the system, (inputs), and what is expected to be derived, (outputs). The focus of the process is the benefit derived from the outputs in terms of cost. The more rational the system the closer the relationship between cost (input) and results, (output). Systematic analysis requires that

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<sup>1</sup>See page 20 above.

<sup>2</sup>Allen Shick, "The Road to PPB: The Stage of Budget Reform," in: Fremont L. Lyden, and Ernest G. Miller, Eds., Planning, Programming, Budgeting: A Systems Approach to Management (Chicago: Markham Publishing Co., 1972), p. 17.

specific increments of input be related to specific increases of output.<sup>1</sup>

It can be seen that PPBS attempts to rationalize decision-making in organizations by stating goals in relation to costs. The selection and ordering of goals in organizations is a highly political process. There are partisans for the selection, or non-selection, of each goal. Once selected the ordering of goals produces further partisan activity. Selection and ordering of goals produces strain within organizations.<sup>2,3,4</sup>

The nature of systems is control.<sup>5</sup> PPBS is a systems analogue. The use of PPBS is the usage of control. The usage of control was the first Federal application of PPBS.

Upon assuming office in 1961 the Secretary of Defense found the armed services to be essentially

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<sup>1</sup>Harold A. Hovey, The Planning Programming Budgeting Approach to Government Decision Making (New York: Frederick A. Praeger Publisher, 1968), p. 27.

<sup>2</sup>Robert S. McNamara, The Essence of Security, Reflections in Office (New York: Harper & Row, 1968), p. 104.

<sup>3</sup>Hovey, Planning Programming Budgeting Approach, p. 233.

<sup>4</sup>James M. Roherty, Decisions of Robert S. McNamara: A Study of the Role of the Secretary of Defense (Coral Gables, Fla.: University of Miami Press, 1970), pp. 69-70.

<sup>5</sup>See page 21 above.

independent sub-units competing for a share of the annual budget which was let to the Department in a block sum. In the past, the role of the civilian Secretary had been that of arbiter in an internecine struggle for shares in the budget. The new Secretary rejected this conception of his role, and sought his statutory right to control the premises of decision and insisted upon rational procedures. He saw his role as one of full direct, authority, and control.<sup>1</sup> Since information in a system is the key to control and in human systems this key is most difficult to uncover, one of the first acts of the Secretary was to:

. . . design a new mechanism which would provide this information and integrate it into a single coherent management system. The product of this effort was the Planning-Programming-Budgeting-System, which is now being widely applied throughout the U.S. Government.<sup>2</sup>

The Secretary was able to operationalize PPBS in the Department but it produced partisan activity, personified by the professional military, and directed against the Secretary, who was striving for control of operations and rationalization of procedure. The partisan activity was intense. Since systems is a form of control the attack was really directed against the increased use of authority, (even though legal), by the Secretary.<sup>3</sup> It was in essence

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<sup>1</sup>Roherty, Decisions of Robert S. McNamara, p. 66.

<sup>2</sup>McNamara, Essence of Security, p. 94.

<sup>3</sup>Alain C. Enthoven and Wayne K. Smith, How Much is Enough: Shaping the Defense Program 1961-1969 (New York: Harper & Row, 1971), p. 72.

an expression of what participants believed to be the proper role of the Secretary as opposed to his view of it. For them, there was no net advantage in PPBS and therefore no strong reason to cooperate.<sup>1</sup> PPBS spread beyond the Department because the President was convinced of its effectiveness. In his press conference of August 25, 1965 the President said:

This morning I have just concluded a breakfast meeting with the cabinet and with the heads of federal agencies and I am asking each of them to immediately begin to introduce a very new and very revolutionary system of planning and programming and budgeting throughout the very vast federal government. . . . This program is designed to achieve three major objectives: it will help us find new ways to do jobs faster, to do jobs better, and to do jobs less expensively. It will insure a much sounder judgment through more accurate information pinpointing those things we ought to do more, spotlighting those things we ought to do less. It will make our decision making process as up-to-date, I think, as our space exploring program.<sup>2</sup>

The President's instruction extended the use of PPBS throughout the Federal Government. The Federal Government now uses PERT and MBO as well as PPBS.

Within states, as can be seen from the Michigan experience, there are efforts to develop systems to evaluate the outcomes of education. The resources committed to education are vast. In 1972 the total US expenditure for education was 51.9 billion dollars. The total Michigan expenditure for that same year was

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<sup>1</sup>Chester Barnard, The Functions of the Executive (Cambridge: Harvard U. Press, 1966), p. 58.

<sup>2</sup>Pres. Lyndon B. Johnson in: Culbertson, p. 275.

2.9 billion dollars.<sup>1</sup> Since wrong decisions, both financially and politically, can only be costly there is a demand from elected officials for the careful accounting of public funds committed to education. In many states, including Michigan, at least half the state budget goes for educational purposes. The elected official has a vested interest in reducing, or at least keeping constant, the costs of education and increasing the amount of funds available for all other activities, without raising taxes. This can be done only by controlling the instrumentalities of decision-making, the key to which is information. There is a demand among elected officials for more rational decision-making procedures. A recent definition of a statewide evaluation system clearly shows the systemic elements of information, decision-making, and control. The definition holds that a statewide evaluation system is:

. . . a procedure for collecting large amounts of information descriptive of local educational programs addressed to specific educational needs which may be fed back to local managers, practitioners, and their public, so that decisions will be made to improve, terminate, replace, or continue educational programs.<sup>2</sup>

Since the Michigan six-step accountability model is an "information gathering system for the purpose of

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<sup>1</sup>U.S. Department of Health, Education, and Welfare, Statistics of Public Elementary and Secondary Day Schools Fall 1972, by Betty J. Foster (Washington, D.C.: GPO, 1973), p. 28.

<sup>2</sup>Malcom Provus, "Toward a State System of Evaluation," Journal of Research and Development in Education 3 (Summer 1970):87-96.

making decisions" it is a method of control.<sup>1</sup> Step three in the process, (needs assessment), is the step with which teachers are in closest contact since assessments evaluates pupils within schools. Teachers within schools where assessment takes place should feel controlled.

In adopting a systems approach a state department of education attempts to guarantee certainty by increasing the use of rational procedures. The rational procedures are designed to control the system of information for decision-making purposes. The use of assessment tests to evaluate pupil performance can be interpreted by teachers as a threat since information vital for decision-making passes from their control. It may well be that teachers perceive no net advantage in contributing to an accountability and assessment program. A program cannot motivate cooperation unless it is accepted by those who are expected to contribute to the organization.<sup>2</sup>

### Summary

Systems are bounded and organized collectivities surrounded by an environment. Social systems are always in contact with their environments. The exchange of information between system and environment is feedback. Feedback and information are synonymous terms. The element in

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<sup>1</sup>Porter, "Evaluating Education's Products," p. 12.

<sup>2</sup>Barnard, Functions of the Executive, p. 86.

the system receiving feedback is the control element. In human systems the control element has been called the decision-maker. Systems analysis was originally an engineering concept, but its use has spread to the social sciences. One social science application is the Planning, Evaluation, Review, Technique, (PERT). PERT is a method in which organizational goals are determined and then time and work sequences are estimated in probabilistic terms. Another adaptation is Management By Objectives (MBO). In MBO the goal of the organization is made clear to employees who then organize their work to accomplish the objectives. MBO in one version is limited only to managers. In another application the rank and file are free to organize with the managerial group acting as consultants. Another adaptation is the Planning Programming Budgeting System, (PPBS). In this adaptation organizational goals are defined and ordered in terms of resources available. A symbolic model is constructed describing the steps needed to accomplish the goal. Goal accomplishment is evaluated in terms of outcomes and resources consumed. The objective is rational control of the system.

#### Michigan Teachers

There were approximately 2.1 million classroom teachers working in the United States in 1972. Approximately 90,000 of them were employed in the 596 operating

school districts in Michigan. The total number of pupils in Michigan schools in 1972, was 2.2 million.<sup>1</sup>

As of January 31, 1974, 83,311 of the approximately 90,000 Michigan teachers were members of the Michigan Education Association, (MEA).<sup>2</sup> The MEA, as its parent organization, the National Education Association, (NEA), has been an advocate of the increased professionalization of teachers. One of the major goals of the NEA for the 1970s is the achievement of self-governance for teachers by creating, in statute, professional practices boards in each state. These boards would have the authority to issue and revoke licenses, establish and administer standards of professional practices and ethics, accredit teacher preparation institutions, and determine the conduct of in-service and continuing education.<sup>3</sup> Whoever controls these four activities, controls who will in fact be a professional teacher, and how professional teaching will be performed. The State now controls the first three of these activities, and local administrators the fourth.

There is no authoritative checklist by which professions can be distinguished from occupations.

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<sup>1</sup>Statistics of Public Elementary and Secondary Day Schools, Fall 1972, pp. 13-16.

<sup>2</sup>Information supplied by the Office of the Executive Secretary, Michigan Education Association, East Lansing, Michigan, February 25, 1974.

<sup>3</sup>Helen Bain, "Self Governance Must Come First, Then Accountability," Phi Delta Kappan 51 (April 1970):413.

Lieberman has enumerated a list of eight criteria which are generally referred to. The eight criteria are: (1) The group performs a unique, definite, and essential service, (2) There is an emphasis upon intellectual techniques in performing the service, (3) There is a long period of specialized training, (4) There is a broad range of autonomy for both the individual practitioners and the group as a whole, (5) An acceptance of broad personal responsibility for judgments made, and acts performed, (6) An emphasis upon services to be rendered, rather than economic gain to the practitioners, (7) A comprehensive self-governing organization of practitioners is present, and (8) A code of ethics has been developed.<sup>1</sup> Criteria one and two are characteristic of teaching. Criterion 3 becomes more typical as training becomes longer. There is a national trend toward a fifth year of teacher training. Criteria four through eight are those which the NEA is attempting to achieve, but which state governments now control in the agency of the state departments of education.

The Michigan Education Association is straining toward autonomy for teachers as a group. This is exactly opposite to the strain of the state department of education which is toward control of educational outcomes. The Michigan Education Association, like its parent National

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<sup>1</sup>Myron Lieberman, Education as a Profession (Englewood, N.J.: Prentice-Hall, 1956), p. 2.

Education Association, is attempting to motivate legislation that will place control within the teacher group, but:

Presently, legislation of this kind does not exist for teachers in Michigan. There is no code of ethics established by a state agency governing teachers, nor do the teachers (under appropriate law) prescribe standards for admission to practice.<sup>1</sup>

In the late 1960s researchers were able to note that the MEA only rarely relied on the mobilization of its members to accomplish its objectives. The preferred mode was the political process.<sup>2</sup> Whatever the mode of the past the MEA is taking to mobilization of its members to achieve objectives. The Michigan Federation of Teachers has mobilized fewer strikes over the years than has the Michigan Education Association as Table 1.1 shows below.

Nationally, teachers feel threatened by the various state assessment or accountability plans. They detect the control element clearly. They feel they have "too little control or no control over the facts which might render accountability either feasible or fair."<sup>3</sup> The National Education Association has taken the following position:

The Association believes that educators can be accountable only to the degree that they share responsibility in educational decision making and to the degree that other parties who share this

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<sup>1</sup>Teachers Voice, January 28, 1974, p. 1.

<sup>2</sup>Masters, Salisbury, and Eliot, "Michigan: The Lack of Consensus," p. 253.

<sup>3</sup>Bain, "Self Governance Must Come First," p. 413.

Table 1.1.--Strikes by Michigan Teachers 1966-1974.

| Year | MEA | MFT |
|------|-----|-----|
| 1966 | 4   | 5   |
| 1967 | 25  | 13  |
| 1968 | 12  | 6   |
| 1969 | 37  | 5   |
| 1970 | 26  | 2   |
| 1971 | 8   | 2   |
| 1972 | 8   | 3   |
| 1973 | 41  | 10* |
| 1974 | 21  | 2*  |

Source: Office of Executive Secretary, Michigan Education Association, East Lansing, Michigan.

MEA: Michigan Education Association

MFT: Michigan Federation of Teachers

\*Information supplied by Michigan Federation of Teachers.

responsibility--legislators, other government officials, school boards, parents, students, and taxpayers--are also held accountable . . .<sup>1</sup>

The National Education Association has commissioned a group of three college professors to "evaluate the educational soundness and utility for Michigan" of the six step accountability model.<sup>2</sup> The NEA is most concerned with the assessment component. The researchers have interviewed about 100 persons to determine feelings about the assessment component of the Michigan accountability model. Since The National Education Association has paid for the research and selected the interviewees the work must be regarded as in-house research.<sup>3</sup> Since the Michigan accountability model is one of the first of its kind in the United States it has great significance for those concerned.

### Summary

Nationally, the National Education Association has made self-governance its goal for the 1970s. At the state level the Michigan Education Association has committed itself to working for a statutory code of ethics and control of entry requirements. Teachers, nationally and locally are straining toward autonomy and control over their conditions of work. In short, their organizations are

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<sup>1</sup>National Education Association, Resolution 73-25, 1973.

<sup>2</sup>Teacher's Voice, January 28, 1973, p. 3.

<sup>3</sup>Interview with NEA commissioned researcher, February 26, 1974.

straining for professionalism. This is in exactly the opposite direction of the strain of the state and its agency, the state education department. Teachers view assessment and accountability models as potential sources of control over their behavior. For them:

. . . performance-based certification and performance-based salary schedules may provide some of the controls necessary to ensure that teachers do not deviate from state-prescribed procedures and official courses of study.<sup>1</sup>

#### Summary

The Federal Government has been involved with education since the earliest days of the nation. The ESEA of 1965 was the first large-scale, direct federal aid to education. A feature of the ESEA of 1965 was the objective measurement of educational attainment.

The Michigan state government is in the process of rationalizing its structural operations. The Governor and the legislature have sponsored legislation to assess the outcomes of education.

A system is any bounded and organized collectivity surrounded by an environment. When systems analysis is applied to social phenomena it is referred to by such names as PERT, MBO, or PPBS.

PERT is a method of achieving an objective by defining goals and then determining work sequences and

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<sup>1</sup>M. M. Gubser, "'Accountability' As a Smokescreen for Political Indoctrination in Arizona," Phi Delta Kappan 55 (September 1973):64-65.

expressing completion times in probabilistic terms. PERT is a method of coordination and control.

MBO is a method of achieving objectives by enlarging jobs. Employees are informed of organizational goals and then permitted to organize to achieve the goals. MBO is a method of coordination and control.

In PPBS organizational goals are defined and ordered in terms of resources available. A symbolic model of the steps to goal achievement is constructed. PPBS is a method of coordination and control.

Teachers in the United States are straining toward greater autonomy both at the national level and at the state level in Michigan. There is evidence that teachers resist the assessment aspect of accountability.

In short, the Federal Government is allocating large sums to education. The states administer the distribution of these funds. In many cases, half the state budget goes to education. States are beginning to use systems approaches to rationalize administration. Systems is applied to education to account carefully for these vast funds. Teachers as a group are moving toward autonomy. The tendency of the state to rationalize, and the teachers to seek autonomy are strains in opposite directions.

### Conceptual Framework

A formal organization is a system of consciously coordinated activities, or forces, of two or more persons designed to attain a goal.<sup>1,2</sup> The Central Education Agency of the State, (the State Board of Education, the State Department of Education, and the State Superintendent of Instruction), and, the elementary and secondary schools of the State comprise a formal organization since coordinated activities are performed to achieve the goal of education of children, youth, and adults. The focus of this work is a particular relationship of two sub-units within this formal organization, the state department of education and the K-8 school teachers of the state.

The sub-unit called the state department of education is itself a complex formal organization characterized by: fixed and official jurisdictional areas, levels of graded authority, written documents, thoroughly trained officials, who are careerists, and stable rules and regulations.<sup>3</sup> The state department of education has progressed from a statistics gathering, and arbiter role to one of consultation. It is currently straining for a

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<sup>1</sup>Barnard, Functions of the Executive, p. 73.

<sup>2</sup>Robert Presthus, The Organizational Society (New York: Vintage Books, 1962), p. 3.

<sup>3</sup>Source of descriptive list: Max Weber in H. H. Gerth, and C. Wright Mills, From Max Weber: Essays in Sociology (New York: Oxford U. Press, 1946), p. 212.

state and national leadership position by the promulgation of a six step process of activities, which, it is said, will lead to educational accountability. The six steps in the process are: (1) identification of the common goals of education, (2) development of performance objectives, (3) needs assessment, (4) delivery system analysis, (5) evaluation and testing, and recommendations for improvement. The third step in the model, needs assessment has high salience for the K-8 teachers since there is an assessment of learning in every fourth and seventh grade classroom at the beginning of each school year. The projected state budget for 1974-75 proposes an expansion of the fourth grade assessment by two curriculum areas, and a pilot project for a first grade assessment.

The sub-unit called the K-8 teachers of the state is a formal organization comprising a group which is semi-professional and whose professional associations at the national and state levels are striving for professional autonomy. Lieberman has offered the following eight criteria for distinguishing professional from other occupational groups; the group: (1) performs a unique, definite, and essential social service, (2) emphasizes intellectual techniques in performing the service, (3) has a long period of specialized training, (4) a broad range of autonomy for the practitioners, (5) acceptance of a broad range of personal responsibility, (6) emphasis on service to be rendered, rather than personal profit, (7) has a

comprehensive self-governing professional organization, and (8) a code of ethics.<sup>1</sup> Teachers, including K-8 teachers, have accomplished one (1) and two (2) and are in the process of achieving the third criterion. They are striving to accomplish steps four through eight which would represent the completion of professional autonomy. If the teachers as a group are striving for professional status it may well be they will resist what they can interpret to be efforts to control their autonomy. The only information the K-8 teacher controls is the conferring of grades. The six-step accountability model deprives the K-8 teachers of this their only secret professional act. If the K-8 teachers perceive this as an element of threat they cannot be expected to cooperate with the accountability program, most specifically the needs assessment feature which would appear to offer the greatest threat. If there is withdrawal of cooperation it should be limited to the accountability program in general and the assessment feature in particular. Other state programs may be perceived as beneficial or at least legitimate and the net inducement would be for continued cooperation with the state department of education in terms of other programs and activities.

If the state department of education demand for accountability is in fact perceived as a threat to their professional autonomy the K-8 teachers could be expected

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<sup>1</sup>Lieberman, Education as a Profession, p. 2.

not to grant authoritative status to that demand. Then, the greater the demand for accountability and assessment by the state department of education, the less authority these demands will have for the K-8 teachers of the state. The less authority the state department of education has in the perceptions of the teachers the more they will withdraw their cooperation. Although the state department of education risks loss of teacher cooperation by the promulgation and expansion of the accountability model, it is the model itself which represents a threat to the teachers, with step three needs assessment, representing the greatest threat. The model itself should experience the greatest loss of authority and cooperation. In other words, the state department of education should experience a lesser loss of authority and cooperation than the six step model itself.

Withdrawal of teacher support would disrupt the equilibrium of the educational organization as a whole. Accommodation is hampered since the assessment program is mandated by statute. If changes were attempted they could be most easily effected within the state department of education.

Given the accountability program is required by statute, the state department of education might resort to having outside auditors perform assessment surveys to put the appearance of distance between itself and the program, the department might promote accountability and assessment

as a kind of beneficial service to teachers and school districts, the department might assess only samples of pupils in order to reduce the appearance of threat. The passage of time will reveal which course will be taken if there is loss of support.

### Exploratory Questions

Authority is the character of a communication, (an order), in a formal organization by virtue of which it is accepted by a contributor to, or member of, the organization as governing the action he contributes. There are two aspects of authority; the subjective and the objective. The subjective aspect is personal in that acceptance is an individual decision. The objective aspect refers to the nature of the communication itself. If an order is accepted, its authoritativeness, for that person, is indicated. If an order is rejected, not obeyed, it is not authoritative for that person. It should be noted that authority implies voluntarism. The use of force may increase the probability of compliance but force is not authoritative, it is physically compulsive. Authority of communications, (orders), resides with those to whom orders are addressed, not with those who issue the orders. The only authoritative orders are those that will be carried out. This work is concerned with the subjective aspect of communications, (orders), emanating from the

state department of education and addressed to the K-8 teachers of the state.

Barnard states that communications, (orders), will be followed if four conditions are met: (1) the recipient can and does understand the communication, (2) at the time, the recipient believes it is not inconsistent with the purposes of the organization, as he understands them, (3) at the time, he believes it compatible with his personal interest, and he is able, physically and mentally, to comply.<sup>1</sup>

Barnard further states orders are accepted when they fall within the recipient's zone of indifference. The zone of indifference is the attitudinal area where orders are regarded as authoritative and carrying them out does not present efforts inconsistent with preconceived objectives.

The questions asked to make the theory specific to a state department of education demand for assessment and accountability are:

1. To what degree are the conditions present, under which Michigan K-8 teachers will accept the authoritativeness of assessment and accountability communications, (orders), from the state department of education in accordance with Barnard's four criteria:

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<sup>1</sup>Barnard, Functions of the Executive, p. 165.

- a. The teacher can and does understand the communication
  - b. At the time of decision it is believed the communication, (order), is not inconsistent with the purpose of the organization, as he or she understands it
  - c. At the time of decision the teacher believes it is compatible with his or her interest as a whole
  - d. The teacher is able, mentally and physically to comply.
2. Is there a zone of indifference in this situation? If so, what are its qualitative and quantitative characteristics?
  3. If there is perceived authority of the state department of education is it the authority of position or the authority of leadership?
  4. Are there unintended effects of the state department of education demand for accountability and assessment?

These research questions will be translated into testable hypotheses for statistical analysis. Details may be found on pages 120-30.

Applying Barnard's four criteria of authority to a state department of education demand for accountability and assessment will provide the setting for determining the authoritativeness of communications, (orders) for the K-8

teachers in the state in an emerging, developing situation. Thus, there are three purposes for conducting this work.

(1) The first purpose is to determine the degree to which K-8 teachers perceive state department of education communications of accountability and assessment as authoritative in terms of Barnard's four criteria. (2) The second purpose is to establish quantitative and qualitative limits on the perceived authority, if it exists, to determine if the zone of indifference can be located and explored. (3) The third purpose is to determine if there are unintended effects of a state department of education demand for accountability and assessment on the elementary school teachers of the state.

It is significant to conduct this work for four reasons. First, it is relevant to test the subjective aspect of Barnard's theory of authority so it can be determined if the behavior of a large group of semi-professional persons, publicly employed, can be explained in a systematic way in terms of the theory. Secondly, the establishment of quantitative measures of the zone of indifference will permit testing the objective aspect of Barnard's theory of authority in later research. The authoritativeness of state department of education communications, as documents could then be evaluated. Thirdly, the analysis of consequences of teachers' and state department of education's responses can indicate the existence of possible unintended effects. Fourthly, it is

important to evaluate the effectiveness of change models motivated from government since change is apparently being attempted from that source.

The findings here certainly have implications for other groups in other places. Increasingly bureaucracies employ professional and semi-professional persons on large scales. The elementary school teacher group discussed here may well serve as a model for other, similar, groups in public employment.

### Overview

In Chapter II the research literature relating to a demand for assessment and accountability is reviewed in four sections. The first section contains reports of research conducted within state departments of education. This section indicates political and administrative trends currently extant among state departments of education. The second section contains reports of research detailing the characteristics of professional persons in public bureaucracies. Since this work concentrates on K-8 teachers this group is the subject of greatest attention. The third section contains reports of research on the nature of authority since authority is a major variable in this work. Major theories of organizational authority are compared and contrasted here.

Since the work takes place in a context of a demand for assessment and accountability the literature reporting these concepts is examined in section four.

There is a summary section in which the major findings are detailed and related to the research at hand.

In Chapter III the design of the study is detailed. The development of the instrument is described. The descriptions of the first and second pre-tests of the instrument are related. Reliability and validity information are presented. Finally, the hypotheses and the statistics to test them are listed.

In Chapter IV each of Barnard's four principles for the determination of the authoritativeness of organizational communications of accountability and assessment are presented and analyzed quantitatively in terms of four independent variables. The authoritativeness of the communications of accountability and assessment are classified within the zone of indifference, the zone of clear unacceptance, or the zone of neutrality. The authority of the state department of education is classified as the authority of leadership or the authority of position. Unintended effects are identified.

Chapter V contains a major summary and discussion of the entire work. Implications for future research are discussed.

## CHAPTER II

### A REVIEW OF THE LITERATURE

#### The Politics of State Departments of Education

Iannaccone developed a taxonomy of the state politics of education.<sup>1</sup> He categorized eight states by four classifications as follows: Type I, locally based disparate, (Vermont, New Hampshire, Massachusetts), characterized by strong localisms; Type II, state-wide monolithic, (New York, New Jersey, Rhode Island), characterized by state-wide coalitions which are well coordinated; Type III, state-wide fragmented, (Michigan), characterized by state-wide coalitions in conflict, and Type IV, state-wide syndical, (Illinois), characterized by a single coordinated state structure of educational politics. Iannoccone observed that the taxonomy yielded correlates by structural type. Type I, (locally based disparate), finds a focus for accommodation within the houses of the legislature since school districts are widely separated and

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<sup>1</sup>Laurence Iannoccone, "State Politics of Education," in Michael W. Krist, The Politics of Education at the Local, State, and Federal Levels (Berkeley, Calif.: McCutcheon Publ., Corp., 1970), pp. 284-96.

there are strong feelings of localism within states in this type group. Type II, (state-wide monolithic), achieves accommodation among interest groups outside the legislature and then uses its united pressure to influence legislation. Type III (state-wide fragmented), is similar to Type I, (locally based disparate), in that accommodation must be achieved within the legislature since coordinated pressure can only rarely be mustered to assure outcomes. Type IV (state-wide syndical) is by definition syndical so accommodation is quickly determined by consultation and negotiation.

Iannaccone noted that legislative attitudes toward school people differ by type. In Type I states, (locally based disparate) teachers are viewed as paternalistically controllable and superintendents are viewed as key linking-persons between the legislature and their communities. In Type II states, (state-wide monolithic), school people are seen as high in social value but low in actual power. Since they combine they are relegated to a single pressure group among the many pressure groups the legislature must face. In Type III states, (state-wide fragmented), such as Michigan, school people are correctly viewed as in opposition to each other. The opposition of the groups motivates wider public interest and participation. The opportunity to exploit situations by political craft is wide. Those with political craft are keenly aware of emergent situations. In Type IV, (state-wide syndical),

there is collegial reciprocity between school people and legislators.

Some types are more successful with legislatures than others. Type I, (locally-based disparate) does not have the coordinated power to affect passage of legislation. It is more successful in preventing the passage of legislation. Type II (state-wide monolithic), is sophisticated and effective. It can apply its strength to the introduction of legislation and its prevention. Iannoccone is in doubt concerning the effectiveness of Type III (state-wide fragmented) since Michigan was the only state in the sample for this type. Masters, Salisbry, and Eliot have also observed the political fragmentation in Michigan but conclude the Michigan political results are not less impressive than other states.<sup>1</sup> In Type IV states (syndical) the situation is characterized by compromise. It is not a win-loss situation but rather one of how much.

Iannoccone's sample for the typology consists of six states. The study of more state-politics-of-education samples could reveal more representative samples and additional types. He is unsure of his Type III data (fragmented) since Michigan is the only sample of the type. Iannoccone describes the nature of Michigan state-politics-of-education as follows:

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<sup>1</sup>Masters, Salisbury, and Eliot, "Michigan: The Lack of Consensus," p. 251.

. . . state-wide associations of school board members, teachers of the AFT and NEA state affiliates, school administrators, and parent groups come to the legislature disunited, often in conflict rather than consensus, injecting separate, competitive proposals into the legal process.<sup>1</sup>

For the purposes here the state department of education and the elementary teachers are in a political milieu where formally organized groups often operate in opposition to each other.

Such an environment is data-rich and there is much need for information. The judicious offering of information can be used to build a collection book of political debts, to be discharged upon need. Before state-wide assessment, the legislators were dependent upon the teacher groups for information about the schools. Now, much of this information is gathered by the state department of education and published annually in neat booklets.<sup>2</sup> The organized teacher groups have had one of their primary currencies devalued. The teachers need to find other valuable information to trade, or alternatively, to mobilize the membership into a political force. The teachers are seeking, but have not yet found, a method of accommodating to the elected officials of the state.

Since the Michigan Department of Education is a state department of education in the process of change an

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<sup>1</sup>Iannoccone, "State Politics of Education," p. 251.

<sup>2</sup>Local District Results: Michigan Educational Assessment Program (Lansing, Mich.: Michigan Department of Education), printed annually.

examination of the change process in a large, northeastern department is appropriate. The department reported by Kurland is similar in organization, staffing, and size to the Michigan Department of Education.<sup>1</sup>

In response to a changing environment the Commissioner, in 1960, requested an in-house study of the problems of organizing a department for educational change. The study produced a well-known document that served as a model for change within large state departments of education. The document recommended the establishment of an Office of Change to coordinate organizational change. In 1964 the Commissioner established the Office. The Office of Change met each new demand by recommending the creation of a new unit. Over the years the number of special offices had been created reflecting the social history of the times. There were Offices of: Integration, Migrant Education, Reading, and for each Federal categorical aid program as it emerged. The affect was to preserve the original organizational structure while at least seemingly to respond to new demands. Existing structures continued unchanged. Presthus has noted this tendency to growth by adding-on of offices when he observes:

Big organizations are composed of many sub-hierarchies, each bound together by authority, interest, and values in a way similar to the total organization. Each has its power structure headed by a leader who is decisive

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<sup>1</sup>Norman D. Kurland, "Changing Management Approaches in a Large State Education Department," Educational Technology 12 (February 1972):60-64.

within his own system, but who is a subordinate when viewed from the perspective of the larger hierarchy.<sup>1</sup>

As the Offices were added-on the Commissioner felt he was losing control of the organization. The solution the Commissioner chose was consolidation of agencies within departments. The consolidation disturbed the pattern described by Presthus above and tensions were produced. The Commissioner's solution was to work only with those persons who were ready for change. Kurland observes that the resistance of the people to change was high. As he expresses it:

No system by itself will change an organization or the behavior of people in it. People are enormously skillful in finding ways to sabotage approaches that they do not understand, to which they have no commitment, and which make them feel inferior.<sup>2</sup>

Kurland's report suggests a pattern of state education department growth by adding-on of offices. The process continues until the organizational elite feel they are losing control. There is then a resort to a method of control. The commissioner above chose consolidation. Robert McNamara chose PPBS.<sup>3</sup> In Michigan the Department of Education has grown as a result of consolidation of state government and the need to administer Federal programs.

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<sup>1</sup>Robert Presthus, The Organizational Society (New York: Vintage Books, 1962), p. 128.

<sup>2</sup>Kurland, "Changing Management Approaches," p. 64.

<sup>3</sup>See page 29 above.

The legislative mandate to institute a system of state-wide assessment in effect placed the teachers of the state under the direct jurisdiction of the state department of education. The jurisdiction was rationalized by the use of the six step accountability model.

Murphy investigated the impact of Title V, ESEA funds (the purpose of which is to strengthen state departments of education). His sample included nine states as follows: (1) Colorado, (2) Kansas, (3) Kentucky, (4) Maryland, (5) Massachusetts, (6) New York, (7) South Carolina, (8) Tennessee, and (9) Texas. The sample is small but well balanced to represent large and small states, urban and rural states, and in addition had wide geographical distribution.<sup>1</sup> Murphy notes that the USOE retains the prudential right to disapprove projects which do not make significant contributions in terms of the purposes of Title V. He observes, and review of the literature corroborates, that there is no record of funds ever being withheld. Since there is no record of funds ever being withheld the funds are equivalent to discretionary funds. Murphy found that within state departments of education funds were cornered by organizational influentials on the basis of their power positions. After

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<sup>1</sup>Jerome T. Murphy, "Title V of ESEA: The Impact of Discretionary Funds on State Educational Bureaucracies," Harvard Education Review 43 (August 1973):362-85.

allocation decisions were agreed upon, abstract goals were applied to the actual use of the Federal funds. In general, the use of the funds was viewed as a supplemental source for on-going programs in the nine states in the study. The thrust of Title V is to help state departments of education, "formulate long-range plans,"<sup>1</sup> and "expand educational research and development."<sup>2</sup> The USOE supports Murphy's observation that funds were used for on-going projects:

The inability of SEA's [State Education Agency] to undertake comprehensive planning is attested by the relatively meager proportion of total funds assigned to that function: slightly over 5 percent in ESEA's first three years, finally rising to 8 percent. The Title V story looks even worse: From a first year start of less than 25 percent, the proportion dropped sharply and consistently to less than 16 percent.<sup>3</sup>

In fiscal 1970 the Michigan Department of Education received \$981,865 under Title V, (Section 503). The funds were used to expand and strengthen: policy staff services, business management, school management services, curriculum services, and teacher education and certification services.<sup>4</sup> These data appear consistent with Murphy's finding that Title V funds are used for on-going programs.

These data suggest that when state departments of education are awarded block grants, (unassigned funds, as opposed to categorical grants), the funds will be used for

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<sup>1</sup>U.S. Department of Health, Education, and Welfare-Office of Education, State Departments of Education and Federal Programs: Annual Report Fiscal Year 1970 (Washington, D.C.: GPO, 1972), p. 1.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid., p. 5.

<sup>4</sup>Ibid., pp. 61-62.

on-going programs. In other words to strengthen that which is. This is especially significant at a time when the executive branch of government is proposing what is called revenue-sharing but could also be termed block grants. The effect of block grants on state departments of education is to strengthen the organization as it is. Unassigned funds do not yield new programs, they strengthen old ones. In effect, unassigned grants amount to operational support.

### Summary

The state politics of education can be arranged to form a taxonomy by state type. Iannoccone has made such a taxonomy with a six state sample of which Michigan is a member. Michigan represents what Iannoccone called "state-wide fragmented" which indicates an educational political structure with its parts in opposition. Masters, Salisbury, and Eliot have also observed this fragmentation of the state politics of education in Michigan. Such an environment makes information an especially valuable commodity. The organized teachers groups used to trade with this commodity but the state department of education now routinely publishes this once esoteric information. The organized teachers need a new way to accommodate to the political structure. Kurland cites a case study of a large, eastern state department similar to Michigan. He observed that the department grew by the addition of Offices to the existing organization. This produces an unresponsive organization.

The Chief met the challenge by consolidation. Consolidation produced deep tension in the organization. Robert McNamara attempted to make his organization more responsive by the introduction of PPBS. The attempts at control by Chiefs of Departments appears to disturb organizational equilibrium so that some cooperation is withdrawn. Murphy found that the net impact of block grants in nine state departments of education was the support of internally prestigious on-going programs. Evidence indicates that the Michigan Department of Education has used Title V funds for the support of on-going programs. Organizations tend to maintain equilibrium.

### The Professionalization of Teachers

#### What is a Professional?

Teachers strain for professionalization, yet, "there is no authoritative set of criteria by means of which we can distinguish professions from other occupations."<sup>1</sup> There is no master-list against which characteristics can be checked off so that professional status can be determined. The analysis of professional status depends on the post factum historical examination of long recognized professions, which are: medicine, the law, and the clergy; and the more recently emergent professions, such as: dentistry; clinical psychology, and certified public accounting.

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<sup>1</sup>Lieberman, Education as a Profession, p. 1.

Such a historical examination reveals a recognizable pattern of non-serial events which the recognized professions have experienced. These events are: people begin to spend full time at the task, training becomes formalized and located within universities, a national professional association is formed, the national association defines the core task of the group and the nature of training for new candidates, there is political activity to gain legal control of the profession, and at the end of the process a formal code of ethics is adopted to prescribe conduct within the profession.<sup>1,2,3</sup>

A programmed march through these events will not automatically confer the coveted status of professionalism upon an aspirant occupational group. A group may style itself professional, as in: professional funeral director, professional advertising person, or professional dishwasher, but the act of verbalization is not equal to the accomplishment of the event. As Goode has phrased it:

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<sup>1</sup>Lieberman, Education as a Profession, p. 2.

<sup>2</sup>Harold L. Wilensky, "The Professionalization of Everyone?" American Journal of Sociology 70 (September 1964):137-58.

<sup>3</sup>William J. Goode, "The Theoretical Limits of Professionalization," in Amitai Etzioni, Ed., The Semi-Professionals and Their Organizations (New York: The Free Press, 1969), pp. 274-75.

Members of an occupation give higher prestige ranking to it than do other members of the society; thus, they try to get more deference than others will concede.<sup>1</sup>

It is insufficient to the achievement of professionalization to re-create the episodic natural history of the recognized professions and to apply the "professional" designation to one's person and group. An aspirant group must gain exclusive control over a body of technical information that society perceives as necessary and important. Additionally the aspirant group must conform to the societal expectations which constrain the established professions:

These norms dictate not only that the practitioner do technically competent, high quality work, but that he advance a service ideal--devotion to the client's interests more than personal or commercial profit  
...<sup>2</sup>

Professional status is granted by society to groups which perform a necessary, complex, technical service which people cannot perform for themselves. The professional group must be trusted to act in the best interests of the clients. The professional practitioner has wide latitude to exercise personal judgment based on his lengthy technical training. The trust is vast, and the potential for the professional to actually harm the client is great. In view of the foregoing, it is easy to see why so many persons, and groups, aspire to, or claim, the mantle of professionalism and why society is so chary with the

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<sup>1</sup>Ibid., p. 268.

<sup>2</sup>Wilensky, "Professionalization of Everyone?"  
p. 140.

conference of the coveted status. Society must place faith and trust in the professional person. The faith and trust of broad segments of people are not easily earned.

The traditional professions feature independent practitioners operating within collegial groups. A newer feature is the location of professionals, and aspirant professionals, within bureaucracies, which produces a further complication to an old problem. It is a problem Drucker has called, "one of the central problems in modern society."<sup>1</sup> The fundamental nature of bureaucratic organization is rationalization. The manifestation of this rationalism is administrative hierarchy. When administrators attempt to set the standards and conditions of work, professionalism is weakened, since discretion is reduced. The problem from the administrators point of view is to make the professional work for the objectives of the organization.<sup>2</sup> The problem from the professional's point of view is to maximize autonomy of decision and service to clients in order to exercise his professionalism. Presthus observes there is inherent tension between administrators and the specialists here called professionals.<sup>3</sup>

Teachers are a group straining toward full professionalization within the organizational setting called

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<sup>1</sup>Drucker, The Practice of Management, p. 338.

<sup>2</sup>Ibid., p. 335.

<sup>3</sup>Presthus, Organizational Society, p. 29.

schools. School systems can be conceived as hierarchically organized and containing three subsystems: a community system, a managerial system, and a technical system.<sup>1</sup> Within school districts the community sub-system is represented by the school-board, which is an elected body and theoretically responsive to the community which will apply sanctions when specific interests are frustrated.<sup>2</sup> The managerial system is represented by administrators, (the superintendent and his deputies, and the principals and their deputies). Administrators mediate between the school organization and the external environment and attempt to assure the coordination of the school organizations internal affairs. The technical system is represented by teachers, who are experts, and who perform the basic function of the organization, the teaching of clients who are the pupils. K-8 teachers have difficulty being perceived by society as professionals. K-8 schools are characterized by relatively flat organizational structures. The administrator in the K-8 school is the principal. The teachers are not differentiated by rank. Salary is automatically determined by seniority and advanced college courses completed. The work is essentially undifferentiated

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<sup>1</sup>Talcott Parsons, "Some Ingredients of a General Theory of Formal Organization," in Andrew W. Halpin, Ed., Administrative Theory in Education (Chicago: U. of Chicago, 1958), p. 41.

<sup>2</sup>Dan C. Lortie, "The Balance of Control and Autonomy in Elementary School Teaching," in Etzioni, p. 5.

since any teacher in the K-8 school can exchange tasks with any other teacher and perform adequately. The knowledge the K-8 teacher is expected to impart is that knowledge which any literate person is expected to possess. The knowledge is not arcane but rather common. An important basis of the K-8 teacher's control is the standard of performance for pupils. Assessment testing by the state reduces the effectiveness of this tool. K-8 teachers may well resist the imposition of state mandated standards of pupil performance since such standards may be construed as at least a potential reduction of their authority.

#### Summary

In order to achieve professionalization, an aspirant group must gain exclusive control over difficult technical information which it then uses in the interest of clients as well as the personal enrichment of the practitioners. The aspirant group must then follow the historical pattern of the recognized professions. Groups aspiring to professional status within organizations are constrained by administrative orders and conditions of work. Within school districts there are three subsystems: (1) the community subsystem, (2) the managerial subsystem, and (3) the technical subsystem. The community subsystem is represented by the board of education, the managerial subsystem by the administrators, and the technical subsystem by the teachers. The community subsystem controls

the technical subsystem. Because of the technical knowledge the expert commands, control by the administrator is never complete. The K-8 teacher holds little expertise. An important basis for control is pupil evaluation. State assessment of pupil performance can reduce this control.

### Teachers and Their Organizations

There are two demands teachers make at contract time: (1) a greater voice in the determination of working conditions, and (2) higher salaries. When their demands are not met teachers increasingly resort to the strike as a weapon to force compliance.<sup>1</sup> Teachers' money demands have a real basis from the standpoint of relative deprivation. In 1972-73 the average starting salary (in a district of 6,000 or more pupils) was \$7,357. This represents an increase of \$2,213 over the 1966-67 figure which was \$5,144. Yet, when this figure is compared with the average beginning salary of male college graduates, (1972-73) in a wide range of specialities, it is apparent that teachers' starting salaries in 1972-73 was \$2,291 below the average which was \$9,648. If the teachers' starting salary is used as a base of 1.0 then every other speciality is greater than 1.0.<sup>2</sup> It is doubtful that these comparisons are unknown to teachers, and is probably a source of tension.

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<sup>1</sup>See p. 65.

<sup>2</sup>Source of data: National Education Association, Financial Status of the Public Schools, Research Report 4, 1973 (Washington, D.C.: NEA, 1973), p. 17.

Nineteen hundred sixty was the year the strike became a legitimate weapon for teacher's organizations. After 1960 the strike was a normative technique, 1960 the American Federation of Teachers, (AFT), and the National Education Association, (NEA) relied on personal diplomacy, lobbying and behind the scenes persuasion to accomplish goals. The teacher's strike was a relatively unheard of, and to a large degree, an unthinkable event. Yet, teachers had struck before 1960. In September, 1946 teachers struck in Norwalk, Connecticut, and in February, 1947 teachers struck in Buffalo, New York.<sup>1</sup> The AFT affiliate in New York City, the United Federation of Teachers, (UFT), struck in 1960 and again in 1962. As a result of these strikes the UFT gained much and lost nothing. The UFT won the right to represent all the teachers in New York City in collective bargaining with the Board of Education. This was significant since there were many organizations attempting to represent all the teachers or sub-groups of them. Additionally, there were substantial increases in salaries and working conditions for the teachers such as duty-free lunch hours, more preparation time, and teacher aides. In each of these strikes no penalties were suffered either by the UFT or individual members. The American Federation of Teachers gained about 53,000 new members

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<sup>1</sup>Stephen Cole, The Unionization of Teachers: A Case Study of the UFT (New York: Praeger Publishers, 1969), p. 51.

shortly after this time.<sup>1</sup> The point was not lost on the NEA. In response to the AFT successes as a result of militant action the NEA instituted what it called professional negotiations in 1962.<sup>2</sup> Since 1960 both the AFT and the NEA have come to regard the strike as a legitimate weapon to achieve organizational goals. Teachers professional organizations have taken a stand against assessment and accountability and have advocated self-governance of the profession.

Jeffers performed a study in which he compared the attitudes of teachers toward the professionalization of teaching with the attitudes of local and state education association members toward the professionalization of teaching.<sup>3</sup> To do this he developed a Likert-like scale of forty-five items evenly distributed among three categories: (1) Professional, which included items such as teacher selection, increased professional autonomy, and acceptance of professional responsibility; (2) Associational, which included items such as membership criteria and advantages

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<sup>1</sup>Ibid., p. 6.

<sup>2</sup>Alen Rosenthal, Pedagogues and Power: Teacher Groups in School Politics (Syracuse, N.Y.: Syracuse U. Press, 1969), pp. 7-8.

<sup>3</sup>Verne Jeffers, "A Comparison of Attitudes of Teachers and Association Leaders Toward Teaching as a Profession" (Ph.D. Dissertation, State University of New York at Albany, 1966).

of group membership; (3) Working rights and privileges, which included items such as those that deal directly with teacher benefits. He derived the scale items from resolutions acted upon by the state teachers' association in the years 1956-1964. Each scale item was worded to suggest the policy should be attained for classroom teachers. There were 529 usable responses out of 809 sent out which represented a return rate of 66.8 percent. Using t tests comparisons Jeffers found: (1) Associational leaders viewed professional goals in higher esteem than did classroom teachers, (significance level .01); (2) Associational leaders viewed associational goals more highly than classroom teachers, (significance level .01); (3) There was no significant difference between groups in reference to the improvement of working conditions. Jeffers concluded that teachers do not recognize the role associations play in securing improved working conditions. Since teachers may not be as knowledgeable as association leaders regarding professional characteristics teachers confuse increased salary, increased benefits, and improved working conditions with being professional. In short, he observed a significant difference between the goals of association leaders and the teachers. Two reasons for this disparity can be offered. The first is the possibility of systematic error introduced by the use of Association resolutions for the construction of scale items. The wording of the scale items may have introduced a positive bias among Association

respondents. Jeffers scale would need to be tested against a scale derived from a non-Association source to test for bias from this source. The second possibility is goal displacement in which Association members become more concerned with the sub-goals of the Association than with the wider, more general, goals of the teachers.<sup>1,2</sup> A case study would be needed to assess this possibility.

Jeffers findings remind that Associations may not speak in one voice with teachers and for varied reasons. In the study at hand it is presumed the Michigan Education Association (MEA) is speaking in unison with the teachers since both the MEA and the teachers have a stake to lose with a state demand for assessment and accountability, and that is a loss not of potential autonomy but of actual autonomy. It has been observed in the course of research that the MEA is moving slowly in framing a response to the state demand for assessment and accountability. There appears to be a desire to evaluate carefully the sentiments of the teachers. The commissioned study may be designed to influence teacher opinion since the results appear to be predictable.<sup>3</sup>

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<sup>1</sup>Robert Michels, Political Parties: A Sociological Study of the Oligarchical Tendencies of Modern Democracy (Glencoe, Ill.: The Free Press, 1949), p. 188.

<sup>2</sup>Amitai Etzioni, Modern Organizations (Englewood Cliffs, N.J.: Prentice-Hall, 1964), pp. 84-85.

<sup>3</sup>See p. 37 above.

It cannot be concluded from Jeffer's work that teachers are less professional than any other group of practitioners since teachers is the only group studied. It should be recalled that teachers are in a state of relative financial deprivation.<sup>1</sup> In Maslow's hierarchy of needs (physiological needs, safety needs, love needs, esteem needs, and finally self-actualization, and therefore the freedom to be concerned with others) teachers, because of their relatively low financial remuneration may feel alienated and deprived (a loss of love and esteem). Their desire for more money and better working conditions can be viewed as a perfectly rational precursor to professionalism.<sup>2</sup>

The American Federation of Teachers, (AFT), which characteristically is less disposed to the ideal of professionalism and more disposed to the attainment of direct benefits appears to involve teachers more directly than do the organizations regarded as professional. Chaney found the AFT had a higher show of support in struck districts than the NEA and that teacher turnover is lower in struck

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<sup>1</sup>See p. 64 above.

<sup>2</sup>A. H. Maslow, "A Theory of Human Motivation: The Basic Needs," in David R. Hampton, Charles E. Summer, and Ross A. Webber, Eds., Organizational Behavior and the Practice of Management (n.p.: Scott, Foresman & Co., 1968), pp. 27-39.

districts.<sup>1</sup> Nagi found that membership in AFT is associated with a strong sense of control over events and that teachers at higher grade levels have more education and tend to be more liberal than teachers at lower grade levels.<sup>2</sup>

Giandomenico found that teachers who were more militant were more satisfied than teachers who were not involved with union activities.<sup>3</sup> Rotigal suggests that teachers' unions attain objectives which are professional. He mentions the lowering of class size, introduction of para-professional persons, and the expansion of guidance and reading services. Rotigal points out that teachers as a group may be more concerned with direct need satisfaction and greater salaries than with the abstract and distant ideals of service to clients. He concludes, as does Jeffers, that "professional" to teachers may, in fact, mean more pay and less work.<sup>4</sup> It should be emphasized that the satisfaction of lower order needs are necessary before service to clients can become a primary goal.

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<sup>1</sup>John S. Chaney, "An Analysis of Public School Teacher Strikes in the United States: 1966-68," Urban Education 8 (July 1973):179-94.

<sup>2</sup>Mostafa H. Nagi, "Social Psychological Correlates of Membership in Teacher's Organizations," Teachers College Record 74 (February 1973):369-78.

<sup>3</sup>Lawrence L. Giandomenico, "Teacher Needs, Militancy, and the Scope of Collective Bargaining," Journal of Educational Research 66 (February 1973):257-59.

<sup>4</sup>David E. Rotigal, "Teacher Power, Teacher Unity, and Teacher Professionalism," Education 92 (February 1972): 76-80.

### Summary

Strikes have become a normative mode for teachers as a result of AFT successes in the early 1960s. The NEA and the MEA have taken a stand against accountability and assessment and have established a goal of professional autonomy for teachers. There is some evidence that teachers equate direct benefits with the word "professional," rather than service to clients. Variables, such as goal displacement may differentiaite the objectives of teachers and their organizations. In the case of assessment and accountability this is regarded as unlikely since both teachers and their organizations experience a real loss of autonomy when a state demands assessment and accountability. Maslow's schema would suggest that teachers have to satisfy the lower order needs of love and esteem (equated with direct benefits) before they could be free to self-actualize, (equated with service to clients).

### The Teachers in Their Schools

Teachers are a quasi-professional group which functions within bureaucratic settings, (school districts). Bureaucratic settings are ideally characterized by the rational orderings of procedures so that there are fixed and official jurisdictional areas, levels of graded authority, based on written documents which are the files,

and expertly trained officials who are careerists.<sup>1</sup> The bureaucratic setting is bound by stable rules which regulate behavior of participants. Since rules are the expression of bureaucratic rationality the expression of personal judgment is disruptive. Helsel and Krichniak classified teaching as heteronomous because of its subjection to conflicting professional and bureaucratic tendencies, or, in other words, the conflict of personal judgments versus organizational rules. They measured the socializing affects of the bureaucratic structure by hypothesizing that experienced, (socialized) teachers would be less professionally oriented than education students, in fact, they reasoned, experienced teachers should be more bureaucratically oriented since they have been socialized longer by the bureaucratic setting. The hypothesis was not supported. They found that the more experiences teachers were less bureaucratically oriented than education students and that female teachers were more professionally oriented than male teachers.<sup>2</sup> Jeffers findings agree at the .01 level.<sup>3</sup> Ferge observed that teachers tend to see the school as a closed system where the emphasis is on daily

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<sup>1</sup>Weber in, Gerth and Mills, p. 212.

<sup>2</sup>A. Roy Helsel and Stefen P. Kirchniak, "Socialization in a Heteronomous Profession: Public School Teaching," Journal of Educational Research 66 (October 1972):89-93.

<sup>3</sup>Jeffers, "A Comparison of Attitudes," pp. 115-18.

routines and where pupils perform acts of rote memory and the influence of the environment is not recognized.<sup>1</sup> Teachers do not appear to be alienated within their schools, that is, removed from the feeling that they play an active role. Parker measured grade school and high school teachers' attitudes to gain further information about their perceptions of the school and the school district. He evolved a nine point alienation scale ranging from a low of 0 to a high of 9. No teacher in the sample of size 158 entered a response above 4. He therefore considered 0-1 to represent a low alienation score and 2-4 to represent a high alienation score. Within those bounds a pattern emerged. He found that male high school teachers were more alienated than female high school teachers and that female elementary school teachers were more alienated than male elementary school teachers. Parker's sample was generally proportionate to the total population of teachers in the United States and represented 18 percent of the total population of the district. In a post-factum analysis Parker reasons that male high school teachers are alienated because they are in direct equal competition with women teachers, who represent 50 percent of the group. Further, male high school teachers are committed to teaching as a career since their chances for

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<sup>1</sup>Susan Ferge, "How Teachers View the Relation Between School and Society," Sociology of Education 45 (Winter 1972):1-22.

promotion are minimal. The hypothesis that male teachers will feel alienated whenever they compete equally with female teachers requires additional study. If the analysis is carried further it is reasonable to assume that the more female teachers a male teacher must compete with equally the more alienated he will become. The evidence of the study reveals the opposite to be the case. There were seventy-seven elementary school teachers in the sample. Of these seventy-seven elementary school teachers, eight were male and they all scored low on alienation. Parker suggests that job satisfaction is dependent on organizational structure.<sup>1</sup> Moeller and Charters used degree of bureaucratic organization as an independent variable to determine sense of power among teachers.<sup>2</sup> They used a sample of size twenty school districts which were categorized as highly bureaucratic and less bureaucratic by panels of schoolmen. They found that sense of power was greater, not less, in highly bureaucratic schools. Administrative climate was the variable related to sense of power among teachers. When the superintendent generated a climate of repressive authority teachers had a low sense of power. Bureaucracy is impersonal but personal authority is potentially focused and therefore dangerously personal.

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<sup>1</sup>James Hill Parker, "The Alienation of Public School Teachers: A Reference Group Theory Approach," Contemporary Education 41 (May 1970):276-79.

<sup>2</sup>Gerald H. Moeller and W. W. Charters, "Relation of Bureaucratization to Sense of Power Among Teachers," Administrative Science Quarterly 10 (March 1966):444-65.

Moeller and Charters found that male teachers in general, and male elementary teachers in particular, had greater senses of power. An interesting finding is that teachers in their first year of teaching had close to the highest sense of power, regardless of school system. The largest school system had 700 teachers, so generalization is limited.

Carpenter examined the relationship between the formal structure of school organization and the perceived job satisfaction of teachers.<sup>1</sup> He conceptualized school organization as tall, medium, or flat. A tall organization structure has relatively more hierarchical offices to which relatively fewer persons report, and a flat organization structure has relatively fewer hierarchical offices to which relatively more persons report. Carpenter randomly selected six out of ten school districts on a sixty mile radius from Houston and classified them, tall, medium, or flat by use of the formula:  $C = \frac{r \ n}{(n-1) \ (n-2)}$  (Where:  $\underline{C}$  = the total number of peer relations,  $\underline{r}$  = relationships,  $\underline{n}$  = between persons at same level of the organization. The greater the  $\underline{C}$  value the taller the organization.) Carpenter was assured equal representation in each classification since the placement in categories

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<sup>1</sup>Harrell H. Carpenter, "Formal Organizational Structural Factors and Perceived Job Satisfaction of Classroom Teachers," Administrative Science Quarterly 16 (December 1971):460-65.

was dependent on formula and not descriptive characteristics such as, mass, density, or volume. He placed two districts in each classification: tall, medium, or flat. Within each classification: tall, medium, or flat he randomly selected twenty teachers, for a total of sixty. The sixty teachers responded on Likert-type scales to thirteen job satisfaction statements reflecting socio-psychological needs as reflected in Maslow's hierarchical need theory, (physiological needs, safety needs, social needs, ego needs, and self-actualization). Although the sample is limited geographically, and limited to formulary, rather than definitional differences there were significant results. Carpenter found that as structural type became taller, teachers feelings of prestige in the community, perceived opportunity in setting goals, and perceived professional authority appeared to decrease. Carpenter found that teachers in flat organizational structures tended to have a higher level of job satisfaction than teacher in taller types of organizational structures. Moeller and Charters suggest that as bureaucratic tendencies increase so does the teacher's sense of power. This would appear to contradict Carpenter's conclusion that as organization becomes taller, perceived professional authority decreases. Moellers and Charters' classification depends on reputational techniques while Carpenter's classifications depend on mathematical formulation. It is important to bear in mind McCartey and Ramsey's caution:

Studies of community structures reveal a disconcerting correlation between method and the type of community. . . . That different methods frequently produce different results is well known in the behavioral sciences.<sup>1</sup>

School district response by size, to a state department of education demand for assessment and accountability will be a stratification of interest in the study at hand.

Belasco and Alutto note that teachers are centrally concerned with increasing their participation in organizational decision-making, but this desire is neither equally, nor widely distributed among them.<sup>2</sup> Belasco and Alutto found a significant relationship between member satisfaction and decisional participation. Teachers who were decisionally deprived reported significantly lower satisfaction levels. The decisionally deprived, mobility oriented teachers tended to be located among younger male teachers in the secondary schools. Older female teachers in the elementary schools tended to experience both decisional saturation and the highest levels of satisfaction. Teachers with the highest levels of satisfaction reported less tension and less militant attitudes. Less

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<sup>1</sup>Donald J. McCarty and Charles E. Ramsey, The School Managers: Power and Conflict in American Public Education (Westport, Conn.: Greenwood Publishing Corp., 1971), p. 237.

<sup>2</sup>James A. Belasco and Joseph A. Alutto, "Decisional Participation and Teacher Satisfaction," Educational Administration Quarterly 8 (Winter 1972):44-57.

satisfied teachers experienced more felt job tension. March and Simon indicate that when satisfaction is low people withdraw cooperation from the organization.<sup>1</sup> Belasco and Alutto conclude with the observation that since teachers are differentially satisfied similar strategies will have varied affects on the teachers. They recommend varied strategies for increased decision-sharing based on the known correlates of satisfaction. This approach requires extreme caution since teachers have long been accustomed to be treated with mass equity. For example Hansen and Borgatta found that teachers are not supportive of differential distributions of symbols that could be construed as supportive of a status system among elementary, junior, and senior high school teachers.<sup>2</sup> Hansen and Borgatta also found that female teachers tended to be less supportive than male teachers of the differential distribution of salary and preparation time. For the purposes of this work it is of interest to compare the attitudes of older female K-8 teachers and younger male K-8 teachers.

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<sup>1</sup>James G. March and Herbert A. Simon, Organizations (New York: John Wiley & Sons, 1958), p. 51.

<sup>2</sup>Lee H. Hansen and Edgar F. Borgatta, "Teacher Perceptions of Intra-Occupational Status Relationships Among Elementary, Junior High, and Senior High School Teaching Positions," Journal of Experimental Education 40 (Winter 1971):51-56.

### Summary

Teachers are subject to the conflicting loyalties of their professional orientation and the school system as an organization. There are differences in response to the school setting by sex of teacher. In the K-8 school the older female teachers and the younger male teachers are the most integrated.

### Authority

Barnard has pointed out that a communication is authoritative for the person who accepts it. Weber has identified three ideal types of authority: the legal, the charismatic, and the traditional.<sup>1</sup> Legal authority is best represented by bureaucracy, the key concept of which is rationality since the conscious attempt is the elimination of emotionalism and capriciousness from decision-making. Charismatic authority is best represented by individual persons who possess the gift of grace, which has magical properties. The key concepts of charisma are individuation and mystery in decision-making. Traditional authority is best represented by hereditary rulers and the key concepts are the sacredness of the past and the importance of precedent.<sup>2</sup>

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<sup>1</sup>Discussion based on: Max Weber, "The Three Types of Legitimate Rule," in Etzioni, Complex Organizations, pp. 4-14.

<sup>2</sup>Ibid.

Weber's ideal conceptualization of bureaucracy is rooted in the rationally increasing authority of roles in a hierarchy constrained by rules. Bureaucratic hierarchy has a single apex of authority which is the final arbiter and the primary animus.<sup>1</sup> Evan and Zelditch demonstrated the power of legal authority to channel behavior under laboratory conditions.<sup>2</sup> An artificial, professionally-oriented, bureaucracy was created. Naive subjects, who were college students, were hired to code various materials, using experimenter-designed literature for the purpose. The subjects were exposed to three types of supervision, representing three experimental conditions: supervisory knowledge greater than subjects; supervisory knowledge equal to subjects; supervisory knowledge less than subjects. After forty-five minutes of experimental treatment the subjects were interviewed in order to collect and measure their perceptions. Subjects' responses indicated they perceived differentials in experimental treatment, (significant at the .01 level). Regardless of what the subjects thought of their supervisors "virtually no one questioned the superiors' right to expect obedience to his commands." These commands were carried out with equal dispatch, independently of type of supervisor since

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<sup>1</sup>Etzionni, Modern Organizations, pp. 85-86.

<sup>2</sup>William M. Evan and Morris Zelditch, "A Laboratory Experiment on Bureaucratic Authority," American Sociological Review 26 (December 1961):883-93.

treatment did not differentiate performance means. Although the experiment is limited in its generalizability since there was no random sampling, it is a demonstration of how some people react to the notion of legal authority in bureaucratic settings.

As society becomes more complex and technical, professional persons in greater numbers work within bureaucratic settings. Professional persons find authority from professional ideals and norms so that "in professional organizations there are indeed two types of authority."<sup>1</sup> These two types of authority are professional authority and bureaucratic authority. Professional authority is charismatic. Charisma is the gift of grace, which has magical properties and corresponds to the knowledge of the professional. Professional knowledge is a mystery to the uninitiated and hence endowed with magical properties. The professional continues to exercise authority only so long as he demonstrates an ability to practice his profession successfully, or, only so long as he demonstrates the effective possession of the magic. Each case the professional encounters is unique since each situation is defined separately. Decisions vary from case to case because of the individual treatment and are therefore irrational in bureaucratic terms. Presthus has mentioned

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<sup>1</sup>Etzionni, Modern Organizations, p. 86.

mentioned that there are inherent tensions between administrators and professionals.<sup>1</sup>

Coughlin studied teacher work values.<sup>2</sup> He attempted to assess the locus of teacher loyalty among three dependent variables: (1) bureaucratic principles of the school, (2) principles of professionalism, and (3) social structure of the work group, or, informal norms. Coughlin evolved a forty-five item, paired comparison, instrument which he administered to 192 teachers from four midwestern middle-class, suburban, high schools. Coughlin termed his three dependent variables: (1) "Organizational," conceived as system-oriented teachers, and supervisory oriented teachers; (2) "Professionals," conceived as subject-oriented and staff-oriented teachers; and (3) "Socials," conceived as socially oriented teachers. The most interesting finding is that .49 of the teachers fell into a marginal group where there was no clear indication of preference. Of the remaining .51, .26 fell into the "Organizations" grouping, .15 into the "Professionals" grouping, and .10 into the "Socials" grouping. Although generalizability is limited in this study the fact that .49 of the teachers fell into a marginal group may be an indication of teacher loyalties divided between

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<sup>1</sup>Presthus, Organizational Society, p. 29.

<sup>2</sup>Robert J. Coughlin, "An Assessment of Teacher Work Values," Educational Administration Quarterly 5 (Autumn 1969):53-73.

professional and bureaucratic considerations. Another finding of interest is that .26 of the teachers identify with bureaucratic authority rather than professional authority. Had the "Professionals" variable been differently defined so that they were more oriented toward teaching as a profession results might have been different. For the purpose of the study at hand Coughlin's results will indicate that teachers experience divided loyalty between bureaucratic work norms and professional work norms. It is assumed, as Coughlin suggests, there is probably a teacher bias toward bureaucratic work norms.

Wagner and O'Hanlon assessed teachers' attitude toward evaluation.<sup>1</sup> Evaluation will be construed here as an indirect measure of acceptance of bureaucratic authority. The sample in the study consisted of 534 usable responses out of 800 randomly selected Arizona public school teachers. Wagner and O'Hanlon evolved a seven item attitude scale to which respondents could answer, "Yes," or "No." On this basis an attitude score could be calculated with seven representing the most favorable attitude and zero the least favorable. Paired groups of teachers were then compared on six, comparison bases. The six paired comparison groupings were: (1) "Self-rating of 'better than average'"/"Self-rating of 'average' or

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<sup>1</sup>Roderick L. Wagner and James P. O'Hanlon, "Teacher Attitude Toward Evaluation," Journal of Teacher Education 19 (Winter 1968):471-75.

'below average,'" (2) "Teachers not on tenure"/"Teachers on tenure," (3) "Male teachers"/"Female teachers," (4) "Female secondary teachers"/"Female elementary teachers," (5) "Female secondary teachers"/"Male secondary teachers," and (6) "Teachers in merit pay districts"/"Teachers in districts without merit pay." There was insufficient data for statistical analysis of comparison (6). Comparisons (3), (4), and (5) were not significant. Comparison (2) was significant at the .01 level and comparison (1) was significant at the .05 level. Wagner and O'Hanlon's study suggests that non-tenured teachers look upon evaluation more favorably than tenured teachers and their work can be extended to suggest that non-tenured teachers look upon the bureaucratic component of school organization more favorably than the tenured teachers. Administrators should get the most support from non-tenured teachers. For the purpose of the study at hand it is assumed that non-tenured teachers tend to be more bureaucratically oriented and that tenured teachers appear to be less bureaucratically oriented.

### Summary

There are two types of authority in school organizations; the bureaucratic, and the professional. Bureaucratic authority has a high degree of legitimacy and is an influence of behavior. Teachers' loyalty may be ambiguously divided between conflicting loyalties of professionalism

and bureaucracy. Non-tenured teachers may be more favorably disposed to the bureaucratic component of the school organization than tenured teachers.

### Assessment and Accountability

Leon Lessinger is nationally influential in the development and extension of the idea of educational accountability. Lessinger's notion is to recast the present structure of education into systems modes using management methods based on engineering techniques such as: Planning, Programming, Budgeting Systems, (PPBS); Management By Objectives, (MBO); and Project Evaluation and Review Techniques, (PERT).<sup>1</sup> Some of the assumptions are: the pupil is a product, most pupil achievement can be measured, educational objectives are measurable, independent audit is the best way to measure progress, and accurate information should be available to decision-makers.<sup>2,3</sup> The idea is to increase the predictability of educational outcomes and reduce the incidence of uncertain outcomes, in other words, to make education more rational. Lessinger

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<sup>1</sup>Leon M. Lessinger, Every Kid a Winner: Accountability in Education (New York: Simon and Schuster, 1970), p. 3.

<sup>2</sup>Jacob J. Kaufman, "Accountability: A Rational Approach to Education," American Vocational Journal 48 (March 1973):28-30.

<sup>3</sup>Gov. Russell W. Peterson, "Accountability as a State Function," Compact 4 (October 1970):19-20.

feels educators have lost their claim to professionalism since children, in large numbers, perform poorly in school, especially in ghetto areas. He recommends the undermining of the public schools as a method for the improvement of the process of education. For Lessinger, schools are closed systems which lack the capacity for self-renewal and are therefore fated to go to entropy and destruction.<sup>1</sup>

Lessinger has suggested performance contracting as a method for achievement of school renewal.<sup>2</sup> Performance contracting is the situation that obtains when an outside agency contracts with a school district to accomplish specific units of learning outcomes for a fee usually dependent on the degree of measurable pupil learning. At present, performance contracting has entered upon a plateau in its development because of serious operational problems. In Dallas, for example, a program was contracted to train potential high school drop-outs in mathematics and communications skills.<sup>3</sup> The pupil group had been identified the spring before the project was to get underway. When the project was initiated in the fall many of the pupils had

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<sup>1</sup>Lessinger, Every Kid a Winner, pp. 3-17.

<sup>2</sup>Leon M. Lessinger, "The Powerful Notion of Accountability in Education," Journal of Secondary Education 45 (December 1970):339-47.

<sup>3</sup>Arnold G. Ashburn and William J. Webster, "Some Principles and Problems in Evaluating Performance Contracts," Journal of Educational Research 67 (October 1973):76-80.

already dropped out of school. In the course of the project it was found that interim tests did not predict achievement tests. As a result progress during the project could not validly be determined. By the end of the project still more pupils had dropped out of school. A serious unanticipated problem was the marked strain produced by the contracted administrative staff being in proximity to the regular administrative staff in the same school. Guttentag has also noted the strain produced by an outside administrative staff in daily contact with the regular administrative staff of the school.<sup>1</sup> Since performance contracting is at a plateau the emergent pattern for what is called accountability is state-wide accountability of which Michigan's model is a primary example. Wynne has reported that educational administrators characteristically resist the installation and application of systems techniques within their schools.<sup>2</sup> Wynne lists the following methods educational administrators use to resist the installation of systems techniques: a disinterest in funding educational research, refusal to disclose data, criticism of the researcher, and shifting, interpretations of goals.

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<sup>1</sup>Marcia Guttentag, "Social Change in a School: A Computer Content Analysis of Administrative Notices," Journal of School Psychology 9 (#2 1971):191-200.

<sup>2</sup>Edward Wynne, The Politics of School Accountability: Public Information About Public Schools (Berkeley, Calif.: McCutchen Publishing Corp., 1972), p. 63.

Crowson and Wilbur offer three purposes for assessment and accountability in Michigan: (1) lack of reliable state-wide data, (2) a growing public demand, and (3) a need for better information for state level decision-making.<sup>1</sup> Bettinghaus and Miller point out:

"Accountability" and "assessment" have become inextricably linked in the mind of most of the general public and of the groups closely linked to education, (e.g., legislators school boards, teachers, etc.).<sup>2</sup>

Herndon has called accountability "a very mercurial kind of thing."<sup>3</sup> Chabotar, Sederburg, and Ladd, not recognizing the relationship of information to control, describe three different definitions of accountability as they encountered the usage of the term in their field research.<sup>4,5</sup>

Chabotar, Sederburg, and Ladd found accountability as control, accountability as information, and accountability

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<sup>1</sup>Robert L. Crowson and Thomas P. Wilbur, Purposes of the Michigan Assessment of Education, ERIC DOCUMENT: Ed-043-663, March 1970).

<sup>2</sup>Erwin P. Bettinghaus and Gerald R. Miller, A Dissemination System for State Accountability Programs, Pt. I, Reactions to State Accountability Programs, Cooperative Accountability Project, Denver, Colorado, June, 1973.

<sup>3</sup>Terry Herndon, "Speech by Terry Herndon on Accountability," NEA Conference on Accountability, Denver, Colorado, May 29-31, 1973.

<sup>4</sup>Kent J. Chabotar, William A. Sederburg, and Lawrence J. Ladd, Implementing Educational Accountability: The Michigan Experience (East Lansing: Department of Political Science, Michigan State University, November 1973).

<sup>5</sup>For discussion see pp. 20-23 above.

as control and information. Accountability as control signifies that accountability is a technique to control the process of education and the instrumentalities thereof. Accountability as information signifies the "process of obtaining more information about each child or educational program and using this information to allocate educational resources." Accountability as control and information is a combination of the types described and is the sense of the term used in this study. Therefore the study captures the full meaning of the usages of the term "accountability." Specifically for the study reported:

. . . accountability is defined as the process through which information is generated on, and educators are held responsible for, the achievement of specific objectives within an established time period and with a stipulated use of resources.<sup>1</sup>

Forty-nine persons were interviewed in this study of accountability in Michigan. Persons interviewed represented three groups: the central education authority of the state, educational influentials, and persons who work within the eleven school districts which serve as pilots for the state-wide accountability model. Interviewees were interviewed with the use of an interview guide. Interviewee responses were assigned numerical values to correspond to a five point scale ranging from 1 "Strongly Negative," to 5 "Strongly Positive" reflecting five responses categories which are: (1) "student systems," (2) "instructional

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<sup>1</sup>Chabotar, Sederburg, and Ladd, Implementing Educational Accountability, p. 5.

systems," (3) "management systems," (4) "community support," and (5) "current status."

In reference to (1) "student systems," state officials were most positive that the accountability would bring about higher pupil achievement. In reference to (2) "instructional systems," the eight teachers in the sample thought less of the accountability model than the other groups in the sample. In reference to (3) "management systems," which deals in part with who will control education, and what changes the model will bring, most respondents felt that control would reside with the local school board or the community, as opposed to control by the legislature or the State Board of Education. There was no strong feeling that change would result from implementation of the model. In reference to (4) "community support," there was general support for the idea of accountability, but not for the Michigan model, which is reflective of a similar observation of Bettinghaus and Miller's.<sup>1</sup> In reference to (5) "current status," most respondents saw accountability as a method of supplying information and applying control to the school system. Chabotar, Sederburg, and Ladd report that they found that the greatest demand for accountability was coming from parents and the legislature. Two conclusions of this study are that there is

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<sup>1</sup>Bettinghaus and Miller, Reactions to State Accountability Programs, p. 5.

confusion as to what accountability is and the way to overcome this is to explain it to those who don't accept it since they need to be "prostelytized" [sic].<sup>1</sup>

The purpose of a management system is to reduce equivocality and increase predictability, that is the nature of rational systems. The reduction of equivocality and increase of predictability enlarges the possibility of control of systemic activities by those who allocate resources. Since the state has adopted a management system with reference to its public education function it can be concluded that the objective is to predict the outcomes of education and to reduce the possibility of vague outcomes. The ability to predict outcomes and reduce the vague also increases the possibility of control. Chabotar, Sederburg, and Ladd list three definitions of accountability: control, information, and a combination of the two. When respondents define accountability as control the interpretation is an accurate assessment. The second definition of accountability is "control." Information corresponds to control and is its potential form.<sup>2,3</sup> Their third definition, which is the operational one, encompasses the potential and actual

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<sup>1</sup>Chabotar, Sederburg, and Ladd, Implementing Educational Accountability, p. 48.

<sup>2</sup>Wiener, The Human Use of Human Beings, p. 8.

<sup>3</sup>Dechert, "The Development of Cybernetics," p. 16.

dimensions of control and is therefore a complete definition of the concept of accountability as control.

The generalizability of this study is severely limited because the interviewees were not systematically or randomly chosen. Randomly or systematically choosing interviewees greatly increases the power of generalizability while selection by other means increases the danger of magnifying the researcher's biases.<sup>1</sup> The general pattern of responses reflects a bias toward the positive end of the scale. This positive bias may reflect the fact that respondents have either been involved in launching the accountability model or in pilot-testing the accountability model. The results of this study cannot be generalized beyond the persons who were interviewed because of the sample selection methods. On an intuitive level it would appear that the quantitative results have captured some measure of reality since it was shown that legislators and parents were most favorably toward accountability and teachers least favorably disposed. The study gives an indication about how some people, knowledgeable about the state accountability model, feel about it. The study would superficially justify a dissemination program by the Central Education Agency for broader dissemination of information about the state accountability model. The implication of Chabotar, Sederburg, and Ladd's study is

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<sup>1</sup>Earl R. Babbie, Survey Research Methods (Belmont, Calif.: Wadsworth Publishing Co., 1973), p. 77.

that teachers may be less favorably disposed to the state accountability model than other groups knowledgeable about the model.

### Summary

Nationwide, there is a social movement to incorporate learning modes based on engineering systems into existing school districts. Performance contracting has been utilized as a method of introducing systems into schools. Because of serious problems performance contracting with outside contractors has not been growing. State-wide accountability models are appearing as an alternative method for developing systems models within states. Michigan's model is in effect a pilot model for the nation as a whole. Since systems models are forms of control, teachers, who are assumed to be professionally oriented, should be negatively disposed towards them.

### Summary of the Literature

Ianaccone has constructed a taxonomy of the state politics of education based on a six state sample in which Michigan is an element. Ianaccone classified Michigan as state-wide fragmented which indicates a political structure with its parts in opposition. Masters, Salisbury, and Eliot have also observed this fragmentation of Michigan's state politics of education. This type of political fragmentation renders information an even more valuable commodity than it normally is. Formerly, the organized

teachers' groups in the state used information as an exchange medium when trading with the state legislators. Much of the information of exchange the organized teachers traded in is now routinely published by the State Department of Education as part of the accountability model reports. Therefore the medium of exchange, which is information, has been devalued. The organized teachers need a new mode of accommodation to the legislature. They may fall back on the use of political force by mobilizing their strength at election times.

Kurland observed the growth of a large, eastern, state department of education. He reports that it grew by the addition of offices. The growth produced an organization that was unresponsive to the Commissioner. The Commissioner met this problem by a consolidation effort. This resulted in the withdrawal of cooperation by a large number of departmental officials. The Commissioner found himself with a split department.

Robert McNamara also found himself with an unresponsive organization when he entered the Department of Defense as Secretary. His solution was the introduction of Planning, Programming, Budgeting Techniques, (PPBS). PPBS produced satisfactory results but a large measure of cooperation was withdrawn. When chiefs of departments attempt to control directly there appears to be a withdrawal of organizational support.

Murphy found that block grants within nine state departments of education went for the support of on-going programs rather than for the development of new programs. Organizations tend to maintain equilibrium.

Strikes have become a normative mode for teachers since the successes of the American Federation of Teachers (AFT) in 1960 and 1962. The National Education Association (NEA), and the Michigan Education Association, (MEA), have taken stands against assessment and accountability and have established a goal of professional autonomy for the 1970s.

Jeffers performed a study in which he compared teachers' attitude toward professionalism with the attitude of leaders of the state teachers association toward professionalism. Jeffers found association leaders held professionalism in higher esteem than teachers, (significant at the .01 level); association leaders held associational goals in higher esteem than teachers, (significant at the .01 level); and no significant difference between groups in reference to the perception of importance of working conditions. This study may have introduced systematic error by the use of Associational literature for the construction of the scale. Jeffers finding could reflect goal displacement by the Association leaders or reflect systematic error. In relation to assessment and accountability in Michigan goal displacement as a factor differentiating the attitudes of teachers and

Association leaders is assumed not to be a major factors, since both groups have something real to lose and that is the modicum of autonomy they have now. If there is a differential of attitude, Association members would seem to have more at stake than teachers. That teachers are more concerned with direct benefits than professional considerations is a reflection of their actual deprivation in terms of their relative position at the bottom of the pay scale for similarly educated groups. In Maslow's terms, the teachers' needs for love and esteem, (equated with benefits) need to be satisfied before they would be free to self-actualize, (equated with service to clients).

Helsel and Krichniak classified teaching as heteronomous because teachers are subject to the dual and conflicting loyalties of the school as an organization and teaching as a profession. Helsel and Krichniak found that more experienced teachers are less bureaucratically oriented than education students and that female teachers are more professionally oriented than male teachers. Parker found that male high school teachers were more alienated, within schools, than female high school teachers, and that female elementary school teachers were more alienated than male elementary school teachers. Moeller and Charters found that sense of power was greater among teachers in highly bureaucratic schools than in less bureaucratic schools. Male teachers, in general, had high senses of power as did first year teachers. Using a

formulary scheme as opposed to a definitional scheme Carpenter found that teachers tended to have greater senses of satisfaction as organizational structure of the school became flatter. Belesco and Alutto observed that decisionally deprived teachers are located among younger male teachers in the secondary schools and that older female teachers in the elementary schools experience decisional saturation.

Evan and Zelditch were able to demonstrate, under laboratory conditions, the power of legal authority to channel behavior. Coughlin attempted to measure teacher work values among three variables representing a bureaucratic affinity, a professional affinity, and a social affinity. His results indicated that .49 of the teachers fell within no discrete grouping. Of the remainder of the group, which fell into discrete groupings, .26 fell into the bureaucratically oriented group, .15 fell into the professionally oriented group, and .10 fell into the socially oriented grouping. Wagner and O'Hanlon found that non-tenured teachers view evaluation more positively than tentured teachers. Ashburn and Webster report that contracted administrators and regular administrators are in a situation conducive to the development of tension. Guttentag noted this same tension in an independent study.

Chabotar, Sederburg, and Ladd found that among groups closely associated with the Michigan accountability model teachers were the least favorably disposed towards

the accountability model, and parents and state legislators were the most favorably disposed towards the accountability model.

### Summary

The state politics of education in Michigan is fragmented.

Organized teachers groups are seeking new ways to accommodate to the state legislature.

When department chiefs attempt to exert direct control there is a withdrawal of cooperation.

Teachers organizations may not speak for teachers at large. It is assumed here that the association does speak for the teachers since both groups are in danger of suffering loss of autonomy.

Male elementary school teachers are the most satisfied group of teachers in the direction: the lesser his teaching experience the greater his satisfaction. Conversely: the greater his experience the lesser his satisfaction.

Female elementary school teachers are more professionally oriented than male elementary school teachers and more decisively saturated in the direction: the greater her experience the more professionally oriented and decisively saturated she will be. Conversely: the lesser her experience the lesser will be her professional orientation and decisional saturation.

Male elementary school teachers with lesser experience should be most accepting of the accountability and assessment model and female teachers with greater experience should be least accepting.

## CHAPTER III

### DESIGN OF THE STUDY

#### Overview

This chapter contains descriptions of the procedures employed in this study.

The construction, field testing, and administration of the questionnaire used to collect data about Michigan K-8 teachers' understanding and feelings about accountability and assessment in terms of Barnard's theory of authority is described.

The selection of 500 Michigan teachers for inclusion in the sample is related. Demographic details of the sample population are presented.

The design of the study is then laid out in detail. Testable hypotheses are listed. Procedures used for analysis of data are discussed.

#### Development of the Instrument

##### Variable

The problem was to attempt to measure the authoritativeness of a state department of education

accountability and assessment program as perceived by the certificated, employed, K-8 teachers in the state. Four scales were developed to measure these teachers perceptions of the authoritativeness of these communications, (orders), in accordance with Barnard's four criteria which are:

(1) the recipient can and does understand the communication, (2) at the time he believes it not inconsistent with the purposes of the organization, (3) at the time he believes it compatible with his personal interest, and (4) he is able physically and mentally to comply.

#### Description of the Scales

The instrument is made up of thirty-two statements which are distributed into four, eight statement, scales. Scale I is designed to measure the criterion: The recipient can and does understand the communication. Since understanding is the criterion of interest the responses are in a Yes-No format to statements which can be scored right or wrong. Within Scale I, there are two, four statement subscales. Scale I-A is designed to measure literal understanding of the communication, (order). This literal understanding is factual and descriptive. This understanding might be obtained from sources such as observation, peer contact, or media contact such as professional journals, newspapers, and TV programs. Scale I-B is designed to measure the conceptual understanding of the implications of the control of information. This

understanding might be obtained from observations in settings where information is controlled by an identifiable source. In school settings this could be observed when an administrator or perhaps a secretary controls the channels of information.

The remaining twenty-four statements, are distributed into three, eight statement, scales which are of the Likert type. The response format is a five point scale ranging from 5 to 1. Five indicates strongly agree (St A), 4 indicates agree (Agr), 3 indicates uncertain (Unc), 2 indicates disagree (Dis), and 1 indicates strongly disagree (St D). A high score indicates a favorable attitude toward the state's accountability and assessment program and a low score indicates a negative attitude toward the state's accountability and assessment program. The Likert type scale was selected because of its ability to collect large amounts of information per item.<sup>1</sup> Each item in a Likert type scale is itself a rating scale.<sup>2</sup> Two items are sufficient to constitute an adequate scale for the measurement of a criterion.<sup>3</sup> Likert scales can be combined

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<sup>1</sup>C. A. Moser and G. Kalton, Survey Methods in Social Investigation (New York: Basic Books, 1972), p. 364.

<sup>2</sup>Ibid., p. 362.

<sup>3</sup>John P. Robinson, Robert Athanasious, and Kendra B. Head, Measures of Occupational Attitudes and Occupational Characteristics (Ann Arbor, Mich.: Survey Research Center, Institute for Social Research, 1969), p. 4.

with other types of items in the construction of indices and scales.<sup>1</sup>

Scale II is designed to measure the criterion: at the time he believes the communication not inconsistent with the purposes of the organization. The purpose of the organization, as perceived by teachers, is conceptualized as the maximization of satisfactions and the minimizations of dissatisfactions. Subscale II-A is designed to measure satisfactions in a four statement scale derived from the model:

A feeling that you have achieved and a feeling that you have been recognized are the two most frequent feelings that are associated with an increase in job satisfaction.<sup>2</sup>

The dissatisfier statements in Scale II-B are derived from the model:

Company policy and administration is the single most important factor determining bad feelings about a job.<sup>3</sup>

Scale III is designed to measure the criterion: at the time he believes the communication compatible with his personal interest. Personal interest, as perceived by teachers, is conceptualized in terms of Maslow's hierarchical need theory. According to Maslow, human needs are

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<sup>1</sup>Earl R. Babbie, Survey Research Methods (Belmont, Calif.: Wadsworth Publishing Co., 1973), p. 270.

<sup>2</sup>Frederick Herzberg, Bernard Mausner, and Barbara Snyderman, The Motivation to Work (New York: John Wiley & Sons, 1959), p. 67.

<sup>3</sup>Ibid., p. 71.

organized into a hierarchy consisting of: physiological, safety, love, and esteem needs. Finally there is self-actualization which is the state of satisfaction needed to free a person to become all he is capable of becoming. For a need to be a motivator it must be unsatisfied.<sup>1</sup>

Satisfied needs do not motivate behavior.

According to this theory, when a need is fairly well satisfied the next prepotent (higher) need emerges, in turn to dominate the conscious life and to serve as the center of organization of behavior, since gratified needs are not active motivators.<sup>2</sup>

Teachers, as a group straining toward full professional status are conceptualized as having satisfied their love needs but not having satisfied their esteem needs. Maslow described the need for esteem as:

. . . the desire for strength for achievement for adequacy, for confidence in the fact of the world and for independence and freedom. Second, we have what we may call the desire for reputation or prestige (defining it as respect or esteem from other people) recognition, attention, importance or appreciation.<sup>3</sup>

Scale III is an eight statement scale.

Scale IV is designed to measure the criterion: he is able, physically and mentally to comply. This scale is

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<sup>1</sup>For full discussion see: A. H. Maslow, "A Theory of Human Motivation: The Basic Needs," in David R. Hampton, Charles E. Summer, and Ross A. Webber, Organizational Behavior and the Practice of Management (Glenview, Ill.: Scott, Foresman & Co., 1968), pp. 27-40.

<sup>2</sup>Herzberg, Mausner, and Snyderman, Motivation to Work, p. 110.

<sup>3</sup>Maslow, in Hampton, p. 33.

composed of eight statements which explore the dimensions to which teachers feel the requirements of the Michigan accountability and assessment model are possible. It is the extent of teachers' belief in the physical and mental possibility of accomplishing accountability and assessment program which is the object of measurement.

The thirty-two statements, in their four scales, should provide a measure of the authoritativeness of state department of education communications, (orders), in reference to the state's accountability and assessment program.

### Construction of the Instrument

#### Selection of Statements

Following Likert's advice, more statements than would be included in the final scales were assembled.<sup>1</sup> These statements were gathered in general according with the method suggested by Moser and Kalton.<sup>2</sup> Initial surveys were conducted with groups of K-8 teachers. In these initial surveys the teachers were asked to respond in writing to questions based on Barnard's four criteria for determining the authority of organizational communications, (orders). Later, some of these written responses were

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<sup>1</sup>Rensis Likert, "A Technique for the Measurement of Attitudes," Archives of Psychology 140 (June 1932):46.

<sup>2</sup>Moser and Kalton, Survey Methods, p. 358.

used verbatim among the four scales. Additionally, statements were selected from newspaper articles, professional journals, speeches, and conversations. Newspaper articles were the best source of statements because of their close parallel to natural speech. The original pool consisted of 104 statements distributed as twenty-six statements among the four scales. The scales were then shown to a sociology faculty member who has had wide experience with attitude scale construction. The objective of this consultation was to refine the unidimensionality of the scales. As a result of this consultation twenty-one statements were eliminated leaving a total of eighty-three statements.<sup>1</sup> The eighty-three statements were distributed as follows: (1) 20 statements in Scale I, "Understanding," (2) 20 statements in Scale II, "Not inconsistent with purposes," (3) 23 statements in Scale III, "Compatible with personal interest," and (4) 20 statements in Scale IV, "Mentally and physically able to comply." Positive and negative statements were approximately equally represented in the Likert-type scales. In Scale I, "Understanding," statements were equally divided among Yes-No responses.

This version of the scales was presented to a group of five K-8 teachers to evaluate the reading ease of the statement wordings and to estimate the time required for completion of the instrument. Many of the statements were

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<sup>1</sup>Meetings with Dr. William Ewens, April 1974.

rewritten as a result of the teachers' reports. The time estimated for completion of the eighty-three statements was twenty minutes.

#### Pretest of First Scale

This eighty-three statement version of the scales was pretested in the manner detailed by Babbie.<sup>1</sup> There was no attempt to randomize the K-8 teachers in the pretest. K-8 teachers, in school buildings were chosen from two of the states' largest cities, two of its middle sized cities, two suburban communities, and two rural communities. These schools were widely separated geographically and were located throughout the state including its upper peninsula. School districts were chosen by looking at a map of the state, locating a community, and then writing a letter to the superintendent of schools. The letter explained the research project and requested permission to sample the K-8 teachers in a school building which contained between ten and twenty teachers. An overview of the research proposal was included with the letter. The letters were followed-up after one week with phone calls to the superintendents to whom letters had been written. Several superintendents refused permission for the pretest survey on the grounds that it would upset their teachers. In the two large cities permission was readily granted for the survey of

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<sup>1</sup>Babbie, Survey Research Methods, pp. 206-08.

K-8 teachers by the central administration, but separate sets of negotiations had to be conducted with the local teachers' associations. In one of the large cities separate negotiations were needed at each school contacted. This meant that three sets of negotiations were needed to survey the teachers in that city. Two schools were enlisted this way. In one of the middle sized cities the superintendent suggested that negotiations be conducted directly with the local teachers' association. This approach worked well in this middle sized city. In the rest of the communities, the superintendent, or his deputy, handled the arrangements. It should be noted that the request for conducting the survey emphasized that responses from the teachers was purely voluntary.

Once permission was secured to conduct the pretest, a package of materials consisting of a cover letter, the eighty-three statement instrument, and a stamped envelop, for each teacher to be sampled was delivered to the appropriate official who was asked to distribute them to the teachers. The materials were delivered to the appropriate officials as negotiations were completed. A week after the delivery of the survey instruments a package of follow-up letters was mailed to the cooperating official who was asked to distribute them to the teachers. A total of 171 of the eighty-three statement scale were delivered in the manner described. It was decided that the first 100 responses returned would constitute the sample. The

first set of materials was distributed on May 9. The 100th response was received on June 3. Returned, and used, instruments represent .58 of those delivered. The summary characteristics of the 100 teachers responding are reported below in Table 3.1.

#### Selection of Statements for Second Scales

The 100 sets of K-8 teacher responses to the eighty-three statement scale were scored, coded, and punched onto data cards. A CDC 6500 computer was used to analyze the data.

#### Scale I

The first twenty statements referred to Barnard's criterion: the recipient can and does understand the communication. The statements were divided into two, ten statement, subscales, I-A and I-B. I-A was conceptualized as literal understanding, referring to factual descriptions of events. Scale I-B was conceptualized as the extension of the factual description onto possible events, or, the implications of the control of information. Four statements were chosen from each of these two dimensions of understanding, for a total of eight statements. These eight statements comprise two, four-statement subscales, which, when combined make-up Scale I.

Subscale I-A and I-B statements were required to meet two criteria for inclusion in the second version of the scales. These criteria were: (1) the ability to

Table 3.1.--Summary Characteristics of 100 Teachers  
Responding to First Scales.

| Grade                   | Women<br>N=77 | Men<br>N=23 | Total<br>N=100 |
|-------------------------|---------------|-------------|----------------|
| K                       | 8             | 0           | 8              |
| 1                       | 14            | 0           | 14             |
| 2                       | 14            | 0           | 14             |
| 3                       | 12            | 1           | 13             |
| 4                       | 13            | 2           | 15             |
| 5                       | 9             | 7           | 16             |
| 6                       | 5             | 11          | 16             |
| 7                       | 0             | 0           | 0              |
| 8                       | <u>0</u>      | <u>0</u>    | <u>0</u>       |
|                         | $\Sigma 75$   | $\Sigma 21$ | $\Sigma 96^*$  |
| Teaching Experience     |               |             |                |
| Mean                    | 8.1 Years     | 4.8 Years   | 6.5 Years      |
| Range                   | 33 Years      | 14 Years    | 33 Years       |
| Size of School District |               |             |                |
| 0-2,499                 | 37            | 12          | 49             |
| 2,500-4,999             | 14            | 6           | 20             |
| 5,000-9,999             | 9             | 1           | 10             |
| 10,000-14,999           | 3             | 2           | 5              |
| 15,000-19,999           | 3             | 1           | 4              |
| 20,000-49,999           | <u>11</u>     | <u>1</u>    | <u>12</u>      |
|                         | $\Sigma 77$   | $\Sigma 23$ | $\Sigma 100$   |

Note: Four teachers did not report grade level.

discriminate, (reported as percentage of sample which gave the correct answer; symbol ["%"]) and (2) at least moderate, positive correlation with the subscale. A cluster analysis was also performed as a check on the inter-item homogeneity of the scales.

Statements which met the criteria in scales I-A and I-B are given in Table 3.2.

#### Likert Statements

The remaining sixty-three statements of the first scale were distributed among the scales referring to Barnard's three remaining criteria for determining the authoritativeness of organizational communications, (orders). It was desired that each of the second versions of the scale include eight statements. There were two criteria for the inclusion of a statement in a Likert scale. These criteria were: (1) the statement should correlate positively with its scale, (this has been called the method of internal consistency)<sup>1</sup> and (2) each statement should discriminate between measurable degrees of attitude. Statements were therefore selected with as wide a standard deviation as possible among the positively correlated statements of the particular scale.<sup>2</sup> Correlations of

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<sup>1</sup>A. N. Oppenheim, Questionnaire Design and Attitude Measurement (New York: Basic Books, 1966), p. 138.

<sup>2</sup>Babbie, Survey Research Methods, p. 256.

Table 3.2.--Statements Selected for Inclusion in Scales I-A and I-B.<sup>a</sup>

| Statement*                                          | %   | r   |
|-----------------------------------------------------|-----|-----|
| Scale I-A                                           |     |     |
| 25. The Michigan Educational Assessment Test        | .73 | .68 |
| 26. A criterion referenced test                     | .52 | .54 |
| 27. The common goals                                | .41 | .46 |
| 28. Behavioral objectives                           | .83 | .33 |
| Scale I-B                                           |     |     |
| 29. Accountability/assessment could be used         | .69 | .71 |
| 30. If the state has information                    | .81 | .79 |
| 31. Accountability/assessment coming from the state | .81 | .95 |
| 32. To be professional                              | .83 | .52 |

\*Note: Numbers indicate placement of statement in instrument.

<sup>a</sup>Statements are in abbreviated form after the style used by T. W. Adorno, et al., in The Authoritarian Personality (New York: Harper & Row, 1950), pp. 78, 90.

statements with their scales was determined by a correlation matrix. Homogeneity of scales was determined by a principle factors, factor analysis. These operations were performed by the CDC 6500 computer. Means and standard deviations were reported with the factor analysis.

Below is a listing of statements which met the criteria for inclusion, with their intra-scale correlations, means, and standard deviations.

Table 3.3.--Statements Selected for Inclusion in Scales II-A and II-B.

| Statement*                               | r   | $\bar{x}$ | s    |
|------------------------------------------|-----|-----------|------|
| Scale II-A                               |     |           |      |
| 9. . . . mature in their reasoning       | .76 | 2.66      | .96  |
| 10. . . . expansion of child's abilities | .72 | 2.87      | 1.02 |
| 11. A classroom program based            | .69 | 2.81      | .65  |
| 12. The adoption of accountability       | .56 | 2.61      | .96  |
| Scale II-B                               |     |           |      |
| 13. Taxpayers should determine           | .62 | 2.15      | .98  |
| 14. Taxpayers should judge               | .53 | 1.85      | .83  |
| 15. A teacher's salary                   | .54 | 1.75      | .76  |
| 16. Each pupil should                    | .59 | 2.25      | .96  |

\*Note: Numbers refer to placement of statement in scale.

Scale II is designed to measure the criterion: at the time he believes the communication not inconsistent with the purposes of the organization. For a fuller discussion refer to page 97.

Table 3.4.--Statements Selected for Inclusion in Scale III.

| Statement*                                 | r   | $\bar{x}$ | s    |
|--------------------------------------------|-----|-----------|------|
| 1. . . . threat to teacher professionalism | .37 | 2.50      | 1.22 |
| 2. Providing the state                     | .36 | 2.13      | .83  |
| 3. Teachers fear                           | .45 | 2.18      | .97  |
| 4. . . . state prescribed procedures       | .44 | 2.60      | 1.09 |
| 5. . . . on local school districts         | .38 | 1.92      | 1.06 |
| 6. Teachers have little                    | .33 | 2.37      | 1.14 |
| 7. When we talk                            | .47 | 3.69      | 1.16 |
| 8. . . . not performing their jobs         | .41 | 2.85      | 1.33 |

\*Note: Numbers refer to placement of statement in instrument.

Scale III is designed to measure the criterion: at the time he believes the criterion compatible with his personal interest. For a fuller discussion refer to page 97.

Table 3.5.--Statements Selected for Inclusion in Scale IV.

| Statement*                                   | r   | $\bar{x}$ | s    |
|----------------------------------------------|-----|-----------|------|
| 17. Teachers have the knowledge              | .56 | 2.55      | 1.24 |
| 18. . . . every pupil to show progress       | .44 | 2.75      | 1.17 |
| 19. . . . each pupil to show a unit          | .52 | 2.64      | 1.24 |
| 20. . . . to measure how much                | .43 | 2.81      | 1.13 |
| 21. Teachers can see to it                   | .36 | 1.74      | .73  |
| 22. . . . each child to be on<br>grade level | .25 | 1.66      | .82  |
| 23. . . . for a pupil not learning           | .44 | 2.11      | .92  |
| 24. . . . measurable growth each year        | .42 | 2.97      | 1.04 |

\*Note: Numbers refer to placement of statement in instrument.

Scale IV is designed to measure the criterion: he is able, mentally and physically to comply. For a fuller discussion see page 98.

The thirty-two statements selected in accordance with the criteria described above were combined into a new instrument composed of four, eight statement scales. Scales I and II are made up for two, four statement subscales each. Scales III and IV are eight statement scales each.

### Reliability

#### Pretest of the Second Version of the Scales

To test the reliability of the second version of the scales, which contained thirty-two statements, a copy of the instrument was distributed to each of 101 1974 summer session graduate students in education, at Michigan State University. All of these students held Michigan K-8 certification and were employed in a Michigan public school the preceding school year. To achieve as much sample diversity as possible, students in mathematics, science, language arts, reading, and administration classes, held during daytime and evening hours, were sampled. The summer session group was less experienced than the first group of teachers sampled. The mean experience of the summer session group was 2.1 years smaller than the first group of teachers sampled. The range of experience of the summer session group was thirteen years smaller than the first group of teachers sampled. The characteristics of the groups are similar on the other remaining variables. Details of the summer session group are summarized in Table 3.6.

The students were informed of the nature of the survey in class. The instruments were handed out to volunteers who agreed to complete them. The instruments had stamped envelopes attached for return. The students were asked to return the completed scales as soon as

Table 3.6.--Summary Characteristics of Seventy-One Teachers Responding to Second Scales.

| Grade                   | Women<br>n=57 | Men<br>n=14 | Total<br>N=71 |
|-------------------------|---------------|-------------|---------------|
| K                       | 3             | 0           | 3             |
| 1                       | 11            | 0           | 11            |
| 2                       | 13            | 0           | 13            |
| 3                       | 10            | 2           | 12            |
| 4                       | 10            | 4           | 14            |
| 5                       | 2             | 2           | 7             |
| 6                       | 3             | 4           | 7             |
| 7                       | 0             | 1           | 1             |
| 8                       | <u>0</u>      | <u>0</u>    | <u>0</u>      |
|                         | Σ55           | Σ13         | Σ68*          |
| Teaching Experience     |               |             |               |
| Mean                    | 4.6 Years     | 4.2 Years   | 4.4 Years     |
| Range                   | 20 Years      | 9 Years     | 20 Years      |
| Size of School District |               |             |               |
| 0-2499                  | 22            | 8           | 30            |
| 2,500-4,999             | 13            | 3           | 16            |
| 5,000-9,999             | 8             | 1           | 9             |
| 10,000-14,999           | 0             | 0           | 0             |
| 15,000-19,999           | 3             | 0           | 3             |
| 20,000-49,999           | 9             | 0           | 9             |
| 50,000+                 | <u>2</u>      | <u>2</u>    | <u>4</u>      |
|                         | Σ57           | Σ14         | Σ71           |

\*Note: Three teachers did not report grade level.

possible. One hundred one instruments were handed out this way. Seventy-one were returned. There was no follow-up. The return rate was .70. The first instruments were distributed on July 8. The seventy-first instrument was returned on July 23, which was an arbitrary cut-off date.

### Measuring Reliability

The responses of the seventy-one teachers in the second group were scored, coded, and punched onto data cards. The most widely used way of computing reliability is the split-half method.<sup>1</sup> A program was written for the CDC 6500 computer to correlate matched halves of each scale. Since these matched-half correlations were simple correlations they were corrected with the Spearman-Brown formula.<sup>2</sup> The split-half correlations are reported in Table 3.7 below. The average reliability of the scales is .70. This is the same average reliability Adorno found on his similarly constructed Political-Economic Conservatism (PEC) Scale (Form 60). Adorno has contended that:

. . . it is doubtful that any scale measuring diverse trends in political-economic ideology could obtain an average reliability of much over .80.<sup>3</sup>

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<sup>1</sup>Moser and Kalton, Survey Methods, p. 354.

<sup>2</sup>Lee J. Cronbach, Essentials of Psychological Testing (New York: Harper & Brothers, 1949), p. 61.

<sup>3</sup>T. W. Adorno et al., The Authoritarian Personality (New York: Harper & Row, 1950), p. 159.

Table 3.7.--Reliability of Scales.

| Scale                                                                           | Reliability of Scales<br>(Corrected) |
|---------------------------------------------------------------------------------|--------------------------------------|
| Scale I: The recipient can and<br>does understand the<br>communication          |                                      |
| Scale I-A Literal understanding                                                 | .55*                                 |
| Scale I-B Conceptual understanding                                              | .72                                  |
| Scale II: He believes it not incon-<br>sistent with purposes of<br>organization |                                      |
| Scale II-A Satisfiers                                                           | .83                                  |
| Scale II-B Dissatisfiers                                                        | .63                                  |
| Scale III: Compatible with personal<br>interest                                 | .74                                  |
| Scale IV: Physically and mentally able<br>to comply                             | .75                                  |

\*Note: A serious typographical error was discovered in statement twenty-six (located in Scale I-A) after the instrument had been distributed to the teachers. The four statements of Scale I-A were duplicated with the error corrected. The corrected version of Scale I-A was administered to twenty-two summer session education students at Michigan State University who were certificated in grades K-8, and who had taught the previous school year. Heterogeneity of sample was sought by sampling in different types of classes. Classes sampled were in aerospace education and traffic safety. The format of Scale I-A was kept identical to its appearance on the complete instrument. Pretesting sections of an instrument in isolation has been recommended by Babbie, (refer to p. 206). The scales were completed in class on August 5 and 6.

The PEC scale attempts to measure the attitudes of citizens toward government. This is one point of similarity between the PEC and the scales described here. Another similarity is the method of scale construction.

#### Validity of the Scales

Cronbach has pointed out that: "A test is valid to the degree that we know what it measures or predicts."<sup>1</sup> The purpose of knowledge of validity in these scales is to determine if scores represent true variations in the attitudes of those who respond.

The validity of these scales is estimated in terms of what Cronbach has called "empirical validity," in which a scale is correlated with some other, known, variable and therefore is a measure of the same thing.<sup>2</sup> The validity of attitude scales can only be inferred since attitudes are abstractions of verbalized responses and as such are not themselves observable. Since direct correlations are not often possible with attitude scales a way to estimate an association between attitude scales, and other, known variables is to determine the relationship between the scale and some other variable taken to be the criterion variable.<sup>3</sup> Adorno used two persons with known attitudes

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<sup>1</sup>Cronbach, Essentials of Psychological Testing, p. 48.

<sup>2</sup>Ibid.

<sup>3</sup>Moser and Kalton, Survey Methods, p. 356.

as criterion referents for the validation of his several scales in the Authoritarian Personality.<sup>1</sup>

If these scales have empirical validity they should clearly differentiate between persons whose attitudes are known to differ in definite ways. To test the ability of the scales to discriminate, criterion persons who hold well-known attitudes were sought. The persons sought have made their attitudes manifestly clear from the speaker's platform, on TV, radio, and in the press. No informed person can doubt their attitudes as they relate to accountability and assessment. An official of the Michigan Department of Education who met these criteria was selected and asked to complete one of the questionnaires. Similarly, an official of the Michigan Education Association was selected to complete a questionnaire. It was reasonable to assume that an official of the School Boards Association would represent middle ground between the department of education and the state teacher's association. An official of the Michigan School Boards Association was asked to complete a questionnaire.

The results of the criterion-person comparisons are presented in Table 3.8. High scores on the scales represent favorable attitudes toward accountability and assessment. Low scores represent negative attitudes.

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<sup>1</sup>Adorno et al., Authoritarian Personality, p. 31.

Table 3.8.--Comparisons of Criterion-Persons on Questionnaire  
(Second Form).

| Scale                            | Poss.<br>High<br>Score | Dept. of<br>Educ.<br>Official | Schl Bd.<br>Assoc.<br>Official | MEA<br>Official | Poss.<br>Low<br>Score |
|----------------------------------|------------------------|-------------------------------|--------------------------------|-----------------|-----------------------|
| <u>"Understanding"</u>           |                        |                               |                                |                 |                       |
| Scale I-A (literal)              | 4                      | 4                             | 4                              | 4               | 0                     |
| Scale I-B (concept)              | 4                      | 4*                            | 4*                             | 4               | 0                     |
| Scale I (Total)                  | 8                      | 8                             | 8                              | 8               | 0                     |
| <u>"Purposes of Org."</u>        |                        |                               |                                |                 |                       |
| Scale II-A (satis)               | 20                     | 20                            | 15                             | 7               | 4                     |
| Scale II-B (dissat)              | 20                     | 20*                           | 12                             | 5               | 4                     |
| Scale II (Total)                 | 40                     | 40                            | 27                             | 12              | 8                     |
| <u>"Psnl. Interest"</u>          |                        |                               |                                |                 |                       |
| Scale III                        | 40                     | 35                            | 26                             | 11              | 8                     |
| <u>"Phys. &amp; Mentl. Able"</u> |                        |                               |                                |                 |                       |
| Scale IV                         | 40                     | 40*                           | 25                             | 9               | 8                     |
| Total Yes-No                     | 8                      | 8                             | 8                              | 8               | 0                     |
| Total Likerts                    | 120                    | 115                           | 78                             | 32              | 24                    |

\*Note: In scores starred, official did not check scale statement. There were narratives which clarified attitude beyond the scale statement. Directionality and intensity were confirmed. To arrive at a scale score the means were weighted.

It can be seen that attitudes are distributed in predicted ways and constitute a measure of validity for the scales.

A graphic representation of the three officials' scores appears below.

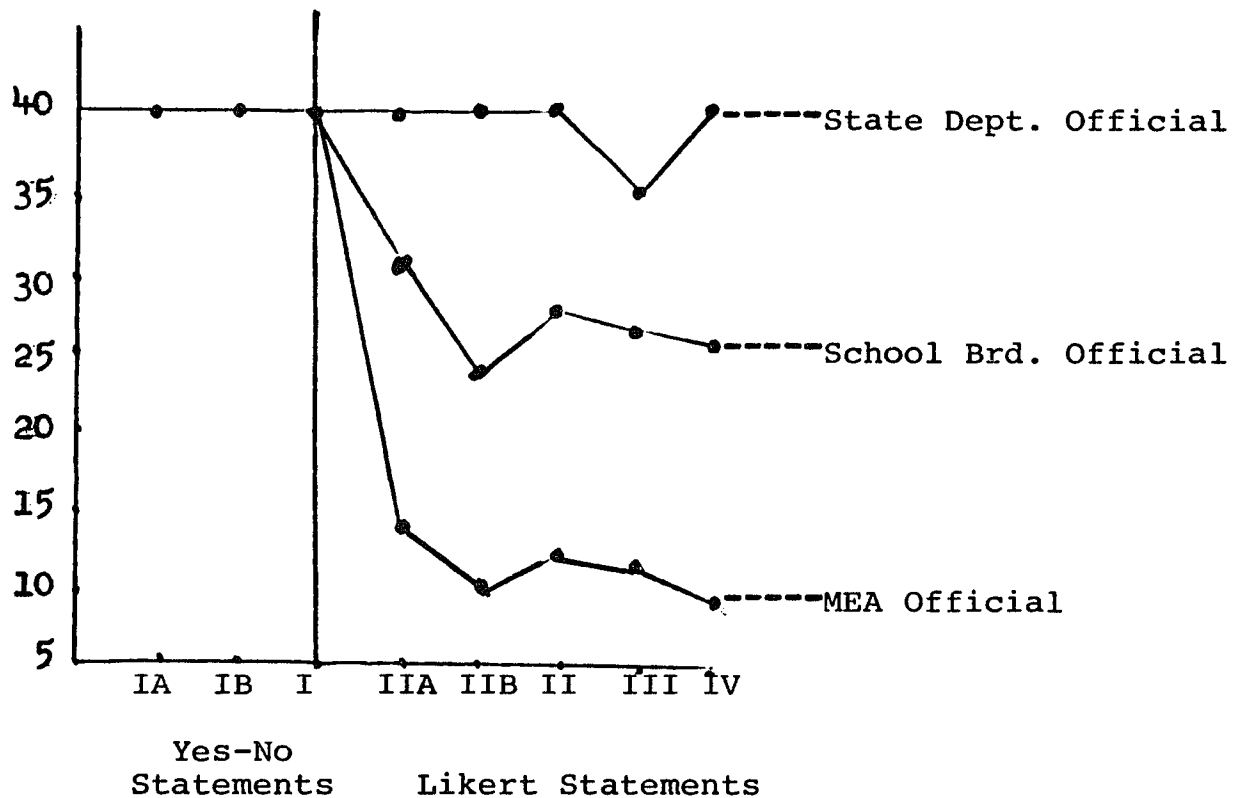


Figure 3.1.--Presentation of three officials' scores on questionnaire. Scales have been weighted to yield a maximum score of 40. All officials scored 40 on Yes-No statements.

#### Administration of the Questionnaire

##### Sample

The two previous samplings of K-8 Michigan teachers showed there was difficulty reaching teachers through administrative or union organizations. A method was sought which would permit direct access to teachers. It was

learned that the Michigan Department of Education maintained a master-list of teachers in the state. The list is kept in alphabetical order and indicates teachers' certification status and other information. Permission was requested, (and granted), to sample from this master-list of Michigan teachers. The master-list of Michigan teachers was revised by the Michigan Department of Education in the summer of 1974. This revised list was sampled in August 1974, shortly after the revision was completed. The list indicated there were 99,168 public school teachers during the 1973-74 school year. There were 40,058 K-8 teachers of whom 6,077 (15%) were male, and 33,981 (85%) were female.

The budget for this study allowed a sample of 500 K-8 teachers to be drawn from the master-list of Michigan teachers. This yielded a sampling ratio of one out of every eighty K-8 teachers in the state (.0125). Kellerer has reported satisfactory results using a .01 sampling ratio in a survey conducted in Bavaria, Germany, which he was able to verify by comparison with a concurrent population census.<sup>1</sup>

A K-8 teacher in this study is defined as a holder of the K-8 Michigan teaching certificate who was employed as a K-8 classroom teacher in a Michigan public school

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<sup>1</sup>H. Kellerer in Tore Dalenius, Sampling in Sweden: Contributions to the Methods and Theories of Sample Survey Practice (Stockholm: Almqvist & Wiksell, 1957), p. 216.

during the 1973-74 school year and is so employed during the 1974-75 school year.

Simple random sampling is rarely employed in survey research. A more usual method is systematic sampling with a random start. Empirically, the results of systematic sampling are almost identical to simple random sampling.<sup>1</sup>

A number was selected from a list of random numbers. The number was forty-three. The forty-third K-8 teacher was found on the master-list of Michigan teachers and each subsequent eightieth name was drawn until a sample of 500 names was developed.

On September 14, 1974 a questionnaire was mailed to each of the 500 K-8 Michigan teachers in the sample. On September 22, a follow-up letter was mailed to each teacher who had not responded. On September 29 a second questionnaire was mailed to each non-responding teacher. The cut-off date for receiving responses was October 12, 1974.

The September 14 mailing yielded 207 replies, (41.4%). The September 22 mailing yielded 99 replies (19.8%). The September 29 mailing yielded 78 responses (15.6%). The total number of responses received was 384 (76.8%). Fifteen of these responses were not usable leaving a net usable sample of 369 (74.8%). Two of the not-usable responses were from administrators, five were

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<sup>1</sup>Babbie, Survey Research Methods, p. 93.

from other than K-8 teachers, (art, physical education, reading), two were from teachers who passed the questionnaire to a colleague, and six were incomplete. Summary characteristics are reported in Table 3.9.

### Design

This work is designed to describe a systematically selected sample of 500 K-8 Michigan teachers' attitudes and understanding concerning the state's accountability and assessment program. The data are gathered by means of a survey questionnaire and the objective is generalization to the population of K-8 teachers in the state as they are represented in the sampling frame.

The dependent variables, attitudes toward accountability and assessment, and understanding of accountability and assessment are examined in terms of four independent variables divided into levels as follows:

1. Sex, with two levels, "Male" and "Female"
2. Grade level taught, with three levels: "Primary," (grades K-2); "Intermediate," (grades 3-5); and "Upper," (grades 6-8)
3. Years of teaching experience, with three levels: "Less Experienced Teacher," (1-3 years's experience); "Medium Experienced Teacher," (4-10 year's experience): and "Highly Experienced Teacher," (11 or more year's experience)

Table 3.9.--Summary Characteristics of 369 Teachers  
Responding to Questionnaire.

| Grade                   | Women<br>n=289 | Men<br>n=80 | Total<br>N=369 |
|-------------------------|----------------|-------------|----------------|
| K                       | 32             | 0           | 32             |
| 1                       | 61             | 1           | 62             |
| 2                       | 38             | 1           | 39             |
| 3                       | 45             | 6           | 51             |
| 4                       | 37             | 9           | 46             |
| 5                       | 42             | 25          | 67             |
| 6                       | 28             | 35          | 63             |
| 7                       | 2              | 1           | 3              |
| 8                       | 1              | 2           | 3              |
| N.R.*                   | <u>3</u>       | <u>0</u>    | <u>3</u>       |
|                         | $\Sigma 289$   | $\Sigma 80$ | $\Sigma 369$   |
| Teaching Experience     |                |             |                |
| Mean                    | 11.9 Years     | 7.56 Years  | 10.9 Years     |
| Range                   | 43 Years       | 22 Years    | 43 Years       |
| Size of School District |                |             |                |
| 0-2,499                 | 70             | 13          | 83             |
| 2,500-4,999             | 63             | 21          | 84             |
| 5,000-9,999             | 60             | 15          | 75             |
| 10,000-14,999           | 24             | 7           | 31             |
| 15,000-19,999           | 15             | 9           | 24             |
| 20,000-49,999           | 39             | 14          | 53             |
| 50,000+                 | 17             | 1           | 18             |
| N.R.*                   | <u>1</u>       | <u>0</u>    | <u>1</u>       |
|                         | $\Sigma 289$   | $\Sigma 80$ | $\Sigma 369$   |

Note: N.R. = No Response.

4. Size of school district, with three levels:

"Small District," (0-4,999 pupils); "Medium Sized District," (5,000-19,999 pupils); and "Large Districts," (20,000 or more pupils)

Teachers' attitudes toward, and understanding of, accountability and assessment communications are described by the four scales detailed above, which are separate instruments and conform operationally to Barnard's four criteria for the determination of the authoritativeness of organizational communications. To be in conformance with the theory, communications must satisfy each of the four criteria Barnard specified.

Scale I, made up of Subscales I-A and I-B, is the instrument with which teacher understanding of the communications of accountability and assessment is investigated. Factual understanding is demonstrated by a score of 75 percent or better on Subscale I-A. Conceptual understanding is demonstrated by a score of 75 percent or better on Subscale I-B. General understanding is demonstrated by a score of 75 percent or better on the complete Scale I. If one response is omitted on a subscale that person's response will be considered incorrect. If two or more responses are omitted on a subscale that person's subscale will not be included for statistical analysis.

The remaining three scales of the questionnaire are operationalizations of Barnard's second, ("not inconsistent with purposes"), third ("consistent with personal

interest"), and fourth ("physically and mentally able") principles and are of the Likert type. Acceptance of authoritativeness is indicated by a positively expressed attitude, (greater than 3 on the five point Likert scale). Rejection of authoritativeness is indicated by a negatively expressed attitude, (less than 3 on the five point Likert scale). A score of exactly 3 indicates a neutral position. Total scores are reduced to 1-5 values by dividing by the number of statements in a scale or subscale in the case of a single person, or dividing by the number of statements in a scale or subscale and then by the number of persons in the group to find group attitudes expressed in terms of 1-5 on a scale or subscale.

If two or less responses on a Likert scale are omitted they will be considered "3" responses, ("Uncertain"). If three or more responses are omitted on a scale that person's scale will not be included in statistical analysis. In the case of subscales, one omitted response will be considered a "3." If there is more than one response omitted on a subscale, that person's subscale will not be included in statistical analysis.

Statistical analysis will yield information showing how levels of the independent variable are related to each other and to the dependent variables.

## Testable Hypotheses

### Scale I ("Understanding," Yes-No Statements

Scales I-A and I-B are analyzed separately and then collectively to comprise Scale I.

The dependent variable is categorized in terms of proportions among levels of the independent variables. The objective is to determine if the observed differences in proportions, in the sample, are outside the range to be expected from sampling variation if there are no differences in the population,  $p < .05$ .

The hypothesis tested for the independent variable "Sex" is:

$$H_0 : P_{M_u} = P_{F_u}$$

The proportion of male teachers who understand accountability and assessment communications is the same as the proportion of female teachers who understand accountability and assessment communications.

against:

$$H_1 : P_{M_u} \neq P_{F_u}$$

The proportion of male teachers who understand accountability and assessment communications is not the same as the proportion of female teachers who understand accountability and assessment communications.

(2 tailed test  $p \leq .05$ )

The hypothesis for the independent variable "Grade Level Taught" is:

$$H_0 : P_{P_u} = P_{I_u} = P_{U_u}$$

The proportion of primary grade teachers, intermediate grade teachers, and upper grade teachers who understand accountability and assessment communications is the same.

against:

$$H_1 : H_0 \text{ is false}$$

The proportion of primary grade teachers, intermediate grade teachers, and upper grade teachers who understand accountability and assessment communications is not the same.

(2 tailed test  $p \leq .05$ )

The hypothesis tested for the independent variable "Years of Teaching Experience" is:

$$H_0 : P_{L_u} = P_{L_u} = P_{M_u} = P_{H_u}$$

The proportion of less experienced teachers, medium experienced teachers, and highly experienced teachers who understand accountability and assessment communications is the same.

against:

$$H_1 : H_0 \text{ is false}$$

The proportion of less experienced teachers, medium experienced teachers, and highly experienced teachers who understand accountability and assessment communications is not the same.

(2 tailed test  $p \leq .05$ )

The hypothesis tested for the independent variable, "Size of School District" is:

$$H_0 : P_{S_u} = P_{M_u} = P_{L_u}$$

The proportion of teachers in small sized districts, medium sized districts, who understand accountability and assessment communications is the same.

against:

$$H_1 : H_0 \text{ is false}$$

The proportion of teachers in small sized districts, medium sized districts, and large sized districts, who understand accountability and assessment communications is not the same.

(2 tailed test  $p \leq .05$ )

Scales II, III, and IV,  
(Likert Scales)

The remaining three scales are of the Likert Type and correspond to Barnard's three remaining principles, ("not inconsistent with purposes," "consistent with personal interest," and "physicall and mentally able").

Authoritativeness of accountability and assessment communications is signified by a positive attitude on a scale or subscale. A positive attitude is signified by a scale or subscale score greater than "3" as described above. A negative attitude is signified by a scale or subscale score of less than "3" as described above.

The independent variables are organized in levels as described in Scale I above. Means of the levels of the independent variable in Scales II, III, and IV will be tested at the  $p \leq .05$  level to determine if they represent

different populations. If a given test indicates differences exist, post-hoc analysis will be performed to determine which means are different. Statements of the testable hypotheses, by independent variable, follow.

The hypothesis tested for the independent variable "Sex" is:

$$H_0: u_1 = u_2$$

There is no mean level difference in male teachers' and female teachers' attitudes on this scale of interest.

against:

$$H_1 : u_1 \neq u_2$$

There is a mean level difference in male teachers' and female teachers' attitudes on this scale of interest.

The hypothesis tested for the independent variable "Grade Level Taught" is:

$$H_0 : u_1 = u_2 = u_3$$

There are no differences between primary grade teachers' attitudes, intermediate grade teachers' attitudes, and upper grade teachers' attitudes on this scale of interest.

against:

$$H_1 : H_0 \text{ is false}$$

There are differences between primary grade teachers' attitudes, intermediate grade teachers' attitudes, and upper grade teachers' attitudes on this scale of interest.

The hypotheses tested for the independent variable:  
 "Years of Teaching Experience" is:

$$H_0 : u_1 = u_2 = u_3$$

There are no differences between less experienced teachers' attitudes, medium experienced teachers' attitudes, and highly experienced teachers' attitudes on this scale of interest.

against:

$$H_1 : H_0 \text{ is false}$$

There are differences between less experienced teachers' attitudes, medium experienced teachers' attitudes, and highly experienced teachers' attitudes on this scale of interest.

The hypothesis tested for the independent variable  
 "Size of School District" is:

$$H_0 : u_1 = u_2 = u_3$$

There are no differences between teachers' attitudes on the scale of interest in terms of small districts, medium sized districts, and large sized districts.

against:

$$H_1 : H_0 \text{ is false}$$

There are differences between teachers' attitudes on the scale of interest in terms of small districts, medium sized districts, and large sized districts.

Mean levels of the independent variables will be tested for significant directional departure from a scale or subscale score of "3." The null hypothesis for this analysis is:

$$H_0 : u = 3$$

The mean of interest is not significantly different from a scale score of "3."

against:

$$H_1 : u \neq 3$$

The mean of interest is significantly different from a scale score of "3."

(2 tailed test  $p \leq .05$ )

#### Analysis

Scale I ("Understanding") is analyzed in terms of proportions of groups of persons assigned to levels of independent variables who respond either "Yes" or "No." These data represent nominal categorizations and therefore the chi-square statistic is appropriate for this analysis. The particular application of the chi-square statistic appropriate here is the test of homogeneity. The test attempts to determine if the respondents represent the same or different sub-populations in terms of "Understanding." The significance level chosen is  $p \leq .05$ .

The chi-square statistic indicates if observations differ from expectations at a given level of probability. If there is a significant departure from expectation the chi-square statistic does not yield an indication of the degree of association which exists between two related variables. A nominal-level measure of association is

required. Such a nominal-level measure of association is the coefficient of contingency. The coefficient of contingency yields an index of association between two nominal-level variables. The two nominal-level variables chosen are: (1) the independent variable, and (2) the dependent variable. The formula for the coefficient of contingency is:

$$C = \sqrt{\frac{X^2}{N+X^2}}$$

"C" is the coefficient of contingency. "N" is the number of persons within a level of an independent variable. " $X^2$ " is the chi-square statistic.

The coefficient of contingency consistently underestimates the degree of association between variables, no matter how greatly the observation departs from expectation. A correction factor will be used to more precisely appraise the degree of association which may exist. The correction factor is determined as follows:

$$\bar{C} = \frac{C}{\text{divisor}}$$

" $\bar{C}$ " is read: "C corrected." Divisor is a tabled value. Of interest here are the following tabled values

for divisor: (1) 2x2 table=.707, (2) 2x3 table=.685, and (3) 2x4 table=.730.<sup>1</sup>

Scales II, III, and IV are Likert scales and represent ordinal data. One method, appropriate for ordinal data, used to determine if mean levels of an independent variable represent the same population is the fixed effects one way analysis of variance. It is the method used in this work. The fixed effects one way analysis of variance indicates only if there are significant differences between means, not which means are significant at a given level of significance. A follow-up test is needed. Since the size of cells will differ, the Scheffe method of mean comparisons will be made where appropriate.

Since it is of interest to determine if accountability and assessment communications are significantly different from the neutral point "3," significant mean levels of the independent variables will be tested for departure from "3" by means of a t-test. The level of significance chosen is  $\leq .05$  in a two-tailed test.

#### The Zone of Indifference

Barnard classifies orders, (communications) into three categories: (1) those which are clearly unacceptable

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<sup>1</sup>For a full discussion of the coefficient of contingency see: Dean J. Champion, Basic Statistics for Social Research (Scranton, Penn.: Chandler Publishing Co., 1970), pp. 204-07.

and will not be carried out, (2) those which are on the neutral line and may or may not be carried out, and (3) those which are clearly acceptable and will be carried out as a matter of course. The third category of orders are those which lie within the zone of indifference.<sup>1</sup> For an order to lie within the zone of indifference it must be authoritative, that is, the teacher: (1) can and does understand the communication, (2) believes it is not inconsistent with the purpose of the organization, (3) believes it compatible with his personal interest, and (4) is able mentally and physically to comply.<sup>2</sup>

The zone of indifference, if one exists in this situation, can be located by observing the mean scale value response rates and their .95 confidence intervals on ordinal data, and the understanding score on nominal data.

If the mean scale value score is above "3," its .95 confidence interval does not cross "3" (on ordinal data), and the level of understanding is 75 percent or greater, (for 50% or more of a group of teachers on nominal data) the order, (communication), lies within the zone of indifference for that group of teachers.

Clearly unacceptable orders if they exist in this situation can be similarly found.

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<sup>1</sup>See Barnard, Functions of the Executive, pp. 168-69.

<sup>2</sup>Ibid., p. 165.

If the mean scale value score is below "3," its .95 confidence interval does not cross "3" (for ordinal data), or the level of understanding is such that less than 50 percent of a group of teachers understands 75 percent of the communication (on nominal data), the order, (communication), lies within the clearly unacceptable zone for that group of teachers.

Neutral zone orders can be identified, if they exist in this situation, in a similar manner. If the mean scale value score lies above "3," its .95 confidence interval crosses "3" (on ordinal data), and the understanding level is 75 percent or better (for 50% or more of a group of teachers) on nominal data, that group of teachers is in the neutral zone but favorably disposed toward accountability and assessment orders, (communications).

If the mean scale value score lies below "3," its .95 confidence interval crosses "3" (on ordinal data) and the level of understanding is such that more than 50 percent of the group understands 75 percent of the communication (on nominal data) the group is in the neutral zone but unfavorably disposed toward accountability and assessment orders, (communications).

#### Perceived Authority

If there is a group of teachers whose responses lie entirely within the zone of indifference their perceptions of the authority of the state department of

education is the authority of leadership, as far as accountability and assessment communications are concerned.

If there is a group of teachers whose responses lie entirely within the clearly unacceptable zone their perceptions of the state department of education is the authority of position, as far as accountability and assessment communications are concerned.

If there is a group of teachers whose responses are such that the .95 confidence interval crosses "3," their perceptions of the authority of the state department of education, (in reference to accountability and assessment communications) will vary in relation to the amount of positive and negative attitudes plus understanding. The more positive the attitude and the higher the level of understanding, the greater is the tendency to view the state department of education as possessing the authority of leadership. The more negative the attitude, or the lower the level of understanding, the greater is the tendency to view the state department of education as possessing the authority of position.

#### Unintended Effects

Unintended effects are defined as those groups of teachers whose mean scale value responses lie below "3," whose .95 confidence intervals do not cross "3," or whose level of understanding is such that 50 percent or less of the group understands 75 percent of the communication.

If such a group exists its responses would be in the clearly unacceptable zone.

### Summary

This chapter contains descriptions of the following procedures used in the study:

1. The construction, field testing, and administration of the questionnaire.
2. The selection of the sample and its demographic characteristics.
3. Testable hypotheses are listed and procedures for data analysis are explained.

## CHAPTER IV

### ANALYSIS

#### Overview

In this chapter each of Barnard's four principles for the determination of the authoritativeness of organizational communications of accountability and assessment will be presented and analyzed quantitatively in terms of four independent variables: (1) Sex of Teacher, (2) Grade Level Taught, (3) Years of Teaching Experience, and (4) District Size. Levels of the independent variables will be compared to determine if significant differences exist at the .05 (or less) level.

The authority of the communications of accountability and assessment will be classified within the zone of indifference, the zone of clear unacceptance and/or the zone of neutrality. Perceived authority of the state department of education will be classified as the authority of leadership and/or the authority of position. Unintended effects, if any, will be identified.

## Subscale I-A

This subscale is designed to measure the factual understanding component of Barnard's principle: The teacher can and does understand the communication.<sup>1</sup>

There were 369 K-8 Michigan teachers in this sample. Of these 369 teachers 221 (59.89%) understood the factual component of accountability and assessment communications. The sample proportion of teachers who understood (59.89%) is an unbiased estimator of the population proportion of teachers who understand.<sup>2</sup> The .95 confidence interval around the proportion of teachers who understood was 54.89 percent to 64.89 percent.<sup>3</sup>

The first independent variable of interest was Sex of Teacher. There were 80 men and 289 women in this sample. Fifty-six men (70.00% of men in sample) met the criterion of 75 percent understanding of the factual component of accountability and assessment communications. One hundred sixty-five women (57.09% of women in sample) met the 75 percent understanding criterion. When the proportion of men who understood (70.00%) was compared with the proportion of women who understood (57.09%) by means of the chi-square test the results were significant at the

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<sup>1</sup>See Barnard, Functions of the Executive, p. 165.

<sup>2</sup>Gene V. Glass and Julian C. Stanley, Statistical Methods in Education and Psychology (Englewood Cliffs, N.J.: Prentice-Hall, 1970), p. 322.

<sup>3</sup>Ibid., p. 323.

.05 level. The calculated chi-square value was 4.345 which was compared to the tabled chi-square value of 3.841. The null hypothesis that the proportion of men who understood the factual component of accountability and assessment communications was equal to the proportion of women who understood the factual component of accountability and assessment communications was rejected.

Since the chi-square test differed from expectation the degree of association between the independent variable Sex of Teacher and the dependent variable Understanding (of the factual component of accountability and assessment communications) was estimated by the corrected coefficient of contingency which yielded the result:  $\bar{C}=.151$ .<sup>1</sup>  $\bar{C}=.151$  indicates a slight relationship between the two variables. These results are summarized in Table 4.1 below. Also, see Table A.5 in Appendix.

The second independent variable of interest was Grade Level Taught with three levels: (1) Primary, (2) Intermediate, and (3) Upper.

There were 133 Primary teachers of whom 84 (63.16%) met the criterion of 75 percent understanding of the factual component of accountability and assessment communications. There were 164 Intermediate teachers of whom 95 (57.93%) met the 75 percent criterion of understanding. There were 69 Upper grade teachers of whom 40 (57.97%)

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<sup>1</sup>See pp. 127-28 above.

Table 4.1.--Proportions, by Sex of Teacher, Who Understood the Factual Component.

| Independent<br>Variable 1:<br>Sex of<br>Teacher | Prop.<br>Who<br>Understood            | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|-------------------------------------------------|---------------------------------------|----|-------------------|--------------------|----------------------------|
| Male                                            | 70.00%                                | 1  | 4.345             | 3.841              | Yes                        |
| Female                                          | 57.09%                                |    |                   |                    |                            |
|                                                 | p=.05                                 |    |                   |                    |                            |
|                                                 | $H_0 : P_{M_u} = P_{F_u}$ is rejected |    |                   |                    |                            |
|                                                 | $\bar{C}=.151$                        |    |                   |                    |                            |

met the 75 percent criterion of understanding of the factual component of accountability and assessment communications.

The calculated chi-square value was 1.018 which was not significant at the .05 level when compared with the tabled chi-square value 5.991.

The null hypothesis that there were no differences in the proportion of Primary, Intermediate, and Upper grade teachers' understanding of the factual component of accountability and assessment communications was accepted.

These results are summarized in Table 4.2 below. Also, see Table A.5 in Appendix.

The third independent variable of interest was Teaching-Experience with three levels: (1) Less Experienced Teacher, (2) Medium Experienced Teacher, and (3) Highly Experienced Teacher.

Table 4.2.--Proportions of Teachers by Grade Level Who Understood the Factual Component.

| Independent<br>Variable 2:<br>Grade Level       | Prop.<br>Who<br>Understood | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|-------------------------------------------------|----------------------------|----|-------------------|--------------------|----------------------------|
| Primary                                         | 63.16%                     | 2  | 1.018             | 5.991              | No                         |
| Intermediate                                    | 57.93%                     |    |                   |                    |                            |
| Upper                                           | 57.97%                     |    |                   |                    |                            |
|                                                 | p=.05                      |    |                   |                    |                            |
| $H_0 : P_{P_u} = P_{I_u} = P_{U_u}$ is accepted |                            |    |                   |                    |                            |

There were 56 Less Experienced Teachers in the sample of whom 35 (62.50%) met the criterion of 75 percent understanding of the factual component of accountability and assessment communications. There were 172 Medium Experienced Teachers of whom 108 (62.79%) met the criterion of 75 percent understanding. There were 136 Highly-Experienced Teachers of whom 75 (55.15%) met the criterion of 75 percent understanding.

The calculated chi-square value was 2.049 which was not significant at the .05 level when compared with the tabled chi-square value 5.991.

The null hypothesis of equivalent proportions of understanding among Less Experienced Teachers, Medium Experienced Teachers, and Highly Experienced Teachers was accepted.

These results are summarized in Table 4.3 below.

Also, see Table A.5 in Appendix.

Table 4.3.--Proportions of Teachers by Teaching Experience Who Understood the Factual Component.

| Independent<br>Variable 3:<br>Tching Exp.       | Prop.<br>Who<br>Understood | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | H <sub>0</sub><br>Signifi-<br>cant? |
|-------------------------------------------------|----------------------------|----|-------------------|--------------------|-------------------------------------|
| LET                                             | 62.50%                     | 2  | 2.049             | 5.991              | No                                  |
| MET                                             | 62.79%                     |    |                   |                    |                                     |
| HET                                             | 55.15%                     |    |                   |                    |                                     |
|                                                 | p=.05                      |    |                   |                    |                                     |
| $H_0 : P_{L_u} = P_{M_u} = P_{H_u}$ is accepted |                            |    |                   |                    |                                     |

The fourth independent variable of interest was District-Size with three levels: (1) Small, (2) Medium, and (3) Large.

There were 167 teachers from Small districts in this sample. Of these 167 teachers, 105 (62.87%) understood at the 75 percent or better level, the factual component of accountability and assessment communications. There were 130 teachers from medium sized districts and of these 72 (55.38%) demonstrated that they understood the factual component of accountability and assessment communications at the 75 percent or better level. There were 71 teachers from Large districts. Of these 71

teachers, 44 (61.97%) demonstrated that they understood at the 75 percent or better level.

The calculated chi-square value was 3.339 which was not significant at the .05 level when compared with the tabled chi-square value of 5.991.

The null hypothesis of equivalent levels of understanding among teachers from Small, Medium, and Large districts in reference to understanding of the factual component of accountability and assessment communications was accepted.

These results are summarized in Table 4.4 below. Also, see Table A.5 in Appendix.

Table 4.4.--Proportions of Teachers by District Size Who Understood the Factual Component.

| Independent<br>Variable 4:<br>District Size | Prop.<br>Who<br>Understood          | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|---------------------------------------------|-------------------------------------|----|-------------------|--------------------|----------------------------|
| Small                                       | 62.87%                              | 2  | 3.339             | 5.991              | No                         |
| Medium                                      | 55.38%                              |    |                   |                    |                            |
| Large                                       | 61.97%                              |    |                   |                    |                            |
|                                             | p=.05                               |    |                   |                    |                            |
|                                             | $H_0 : P_{S_u} = P_{M_u} = P_{L_u}$ |    |                   |                    |                            |

## Subscale I-B

This subscale is designed to measure the conceptual component of Barnard's principle: The teacher can and does understand the communication.<sup>1</sup>

There were 369 K-8 Michigan teachers in this sample. Of these 369 teachers, 263 (71.27%) understood the conceptual component of accountability and assessment communications. The sample proportion of teachers who understood the conceptual component (71.27%) is an unbiased estimator of the population proportion of teachers who understood.<sup>2</sup> The .95 confidence interval around the sample proportion of teachers who understood was 66.66 percent to 75.88 percent.<sup>3</sup>

The first independent variable of interest was Sex of Teacher. There were 80 men and 289 women in this sample. Fifty-three men (66.25% of men in sample) met the 75 percent or better criterion of understanding the conceptual component of accountability and assessment communications. Two hundred ten women (72.66% of women in sample) met the 75 percent or better criterion. When the proportion of men who understood (53.00%) was compared with the proportion of women who understood (72.66%) by means of

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<sup>1</sup>See Barnard, Functions of the Executive, p. 168.

<sup>2</sup>See Glass and Stanley, Statistical Methods in Education and Psychology, p. 322.

<sup>3</sup>Glass and Stanley, p. 323 and Pearson and Clopper in Glass and Stanley, p. 554.

the chi-square test the results were not significant at the .05 level.

The calculated chi-square value was 1.259 which was then compared with the tabled chi-square value of 3.841.

The null hypothesis that the proportion of men who understood was equal to the proportion of women who understood the conceptual component of accountability and assessment communications was accepted.

These results are summarized in Table 4.5 below. Also, see Table A.5 in Appendix.

Table 4.5.--Proportions by Sex of Teacher Who Understood the Conceptual Component.

| Independent<br>Variable 1:<br>Sex of<br>Teacher | Prop.<br>Who<br>Understood            | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|-------------------------------------------------|---------------------------------------|----|-------------------|--------------------|----------------------------|
| Male                                            | 66.25%                                | 1  | 1.259             | 3.841              | No                         |
| Female                                          | 72.66%                                |    |                   |                    |                            |
|                                                 | p=.05                                 |    |                   |                    |                            |
|                                                 | $H_0 : P_{M_u} = P_{F_u}$ is accepted |    |                   |                    |                            |

The second independent variable of interest was Grade Level Taught with three levels: (1) Primary, (2) Intermediate, and (3) Upper.

There were 133 Primary teachers of whom 103 (77.44%) met the criterion of 75 percent or better understanding of the conceptual component of accountability and

assessment communications. There were 164 Intermediate teachers of whom 118 (71.95%) met the 75 percent or better criterion of understanding. There were 69 Upper grade teachers of whom 39 (56.52%) met the 75 percent or better criterion of understanding the conceptual component of accountability and assessment communications.

The calculated chi-square value was 11.053 which was significant at the .05 level when compared with the tabled chi-square value 5.991.

The null hypothesis that there were no differences in the proportions of Primary, Intermediate, and Upper grade teachers' understanding of the conceptual component of accountability and assessment communications was rejected.

Since the chi-square test differed from expectation the degree of association between the independent variable Grade Level Taught and the dependent variable Understanding (of the conceptual component of accountability and assessment communications) was estimated by the corrected coefficient of contingency which yielded the result:  $\bar{C}=.249$ .<sup>1</sup>  $\bar{C}=.249$  indicates a slight relationship between the variables Grade Level Taught and Understanding.

These results are summarized in Table 4.6 below. Also, see Table A.5 in Appendix.

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<sup>1</sup>See pp. 127-28 above.

Table 4.6.--Proportions by Grade Level Who Understood the Conceptual Component.

| Independent<br>Variable 2:<br>Grade Level       | Prop.<br>Who<br>Understood | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|-------------------------------------------------|----------------------------|----|-------------------|--------------------|----------------------------|
| Primary                                         | 71.44%                     | 2  | 11.053            | 5.991              | Yes                        |
| Intermediate                                    | 71.95%                     |    |                   |                    |                            |
| Upper                                           | 56.52%                     |    |                   |                    |                            |
|                                                 | p=.05                      |    |                   |                    |                            |
| $H_0 : P_{P_u} = P_{I_u} = P_{U_u}$ is rejected |                            |    |                   |                    |                            |
| $\bar{C}=.249$                                  |                            |    |                   |                    |                            |

The third independent variable of interest was Teaching Experience with three levels: (1) Less Experienced Teacher, (2) Medium Experienced Teacher, and (3) Highly Experienced Teacher.

There were 56 Less Experienced Teachers in this sample of whom 36 (64.28%) met the criterion of 75 percent or better understanding of the conceptual component of accountability and assessment communications. There were 172 Medium Experienced teachers of whom 127 (73.84%) understood the conceptual component at the 75 percent or better level. There were 136 High Experienced Teachers of whom 97 (71.32%) understood at the 75 percent or better level.

The calculated chi-square value was 2.860 which was not significant at the .05 level when compared with the tabled chi-square value 5.991.

These results are summarized in Table 4.7 below. Also, see Table A.5 in Appendix.

Table 4.7.--Proportions by Teaching Experience Who Understood the Conceptual Component.

| Independent<br>Variable 3:<br>Tchg Exp           | Prop.<br>Who<br>Understood | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|--------------------------------------------------|----------------------------|----|-------------------|--------------------|----------------------------|
| LET                                              | 64.28%                     | 2  | 2.860             | 5.991              | No                         |
| MET                                              | 73.84%                     |    |                   |                    |                            |
| HET                                              | 71.32%                     |    |                   |                    |                            |
|                                                  | p=.05                      |    |                   |                    |                            |
| $H_0 : P_{L_u} = P_{M_u} = P_{U_u}$ was rejected |                            |    |                   |                    |                            |

The fourth independent variable of interest was District Size, with three levels: (1) Small, (2) Medium, and (3) Large. There were 167 teachers from small districts in this sample. Of these 167 teachers 118 (70.66%) understood the conceptual component of accountability and assessment communications at the 75 percent or better level. There were 130 teachers from Medium Sized Districts. Of these 130 teachers 87 (66.92%) understood at the 75 percent or better level. There were 71 teachers

from Large Districts of whom 57 (80.28%) understood the conceptual component at the 75 percent or better level.

The calculated chi-square value was 4.450 which was not significant at the .05 level when compared with the tabled chi-square value 5.991.

The null hypothesis of equivalent levels of understanding among teachers from Small, Medium, and Large districts in reference to understanding of the factual component of accountability and assessment communications was accepted.

These results are summarized in Table 4.8 below. Also, see Table A.5 in Appendix.

Table 4.8.--Proportions by District Size Who Understood the Conceptual Component.

| Independent<br>Variable 4:<br>District Size | Prop.<br>Who<br>Understood | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|---------------------------------------------|----------------------------|----|-------------------|--------------------|----------------------------|
| Small                                       | 70.66%                     | 2  | 4.450             | 5.991              | No                         |
| Medium                                      | 66.92%                     |    |                   |                    |                            |
| Large                                       | 80.28%                     |    |                   |                    |                            |
|                                             | p=.05                      |    |                   |                    |                            |

$H_0 : P_{S_u} = P_{M_u} = P_{L_u}$  was accepted

## Scale I

This scale is designed to measure Barnard's principle: The teacher can and does understand the communication.<sup>1</sup>

There were 369 K-8 Michigan Teachers in this sample. Of these 369 teachers 228 (61.78%) understood accountability and assessment communications. The sample proportion of teachers who understood (61.78%) is an unbiased estimator of the population proportion of teachers who understood.<sup>2</sup> The .95 confidence interval around the sample proportion of teachers who understood was 56.83 percent to 66.75 percent.<sup>3</sup>

The first independent variable of interest was Sex of Teacher. There were 80 men and 289 women in this sample. Fifty-two men (65.00% of men in sample) met the 75 percent or better understanding criterion. One hundred seventy-six women (60.90% of women in sample) met the 75 percent or better understanding criterion.

When the proportion of men who understood (65.00%) was compared to the proportion of women who understood (60.90%) by means of the chi-square test the results were not significant at the .05 level. The calculated chi-square value was .4460 which was compared to the tabled

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<sup>1</sup>See Barnard, Functions of the Executive, p. 168.

<sup>2</sup>See Glass and Stanley, Statistical Methods in Education and Psychology, p. 322.

<sup>3</sup>.95 confidence interval was constructed from Glass and Stanley, p. 323 and tabled data of Pearson and Clopper in Glass and Stanley, p. 554.

chi-square value 4.345. The null hypothesis that the proportion of men who understood accountability and assessment communications is equal to the proportion of women who understood was accepted.

These results are summarized in Table 4.9 below. Also, see Table A.5 in Appendix.

Table 4.9.--Proportion Who Understood by Sex of Teacher.

| Independent<br>Variable 1:<br>Sex of Tchr | Prop.<br>Who<br>Understood | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | Ho<br>Signifi-<br>cant? |
|-------------------------------------------|----------------------------|----|-------------------|--------------------|-------------------------|
| Male                                      | 65.00%                     | 1  | .4460             | 4.345              | No                      |
| Female                                    | 60.90%                     |    |                   |                    |                         |
| p=.05                                     |                            |    |                   |                    |                         |
| $H_0 : P_{M_u} = P_{F_u}$ was accepted    |                            |    |                   |                    |                         |

The second independent variable of interest was Grade Level Taught with three levels: (1) Primary, (2) Intermediate, and (3) Upper.

There were 133 Primary teachers of whom 90 (67.67%) met the criterion of 75 percent or better understanding. There were 164 Intermediate teachers of whom 102 (62.20%) met the 75 percent or better criterion of understanding. There were 69 Upper grade teachers of whom 34 (49.28%) met the criterion of 75 percent or better understanding.

The calculated chi-square value was 6.566 which was significant at the .05 level when compared with the tabled value 5.991.

Since the chi-square test differed from expectation the degree of association between the independent variable Grade Level Taught and the dependent variable Understanding (of accountability and assessment communications) was estimated by the corrected coefficient of contingency which yielded the result:  $\bar{C}=.1938$ .  $\bar{C}=.1938$  indicates a slight relationship between the variables.

These results are summarized in Table 4.10 below. Also see Table A.5 in Appendix.

Table 4.10.--Proportion Who Understood by Grade Level.

| Independent<br>Variable 2:<br>Grade Level | Prop.<br>Who<br>Understood                       | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|-------------------------------------------|--------------------------------------------------|----|-------------------|--------------------|----------------------------|
| Primary                                   | 67.67%                                           | 2  | 6.566             | 5.991              | Yes                        |
| Intermediate                              | 62.20%                                           |    |                   |                    |                            |
| Upper                                     | 49.28%                                           |    |                   |                    |                            |
|                                           | p=.05                                            |    |                   |                    |                            |
|                                           | $H_0 : P_{P_u} = P_{I_u} = P_{U_u}$ was rejected |    |                   |                    |                            |
|                                           | $\bar{C}=.1938$                                  |    |                   |                    |                            |

The third independent variable of interest was Teaching-Experience with three levels: (1) Less Experienced

Teacher, (2) Medium Experienced Teacher, and (3) Highly Experienced Teacher.

There were 56 Less Experienced Teachers in this sample, of whom 32 (57.14%) met the criterion of 75 percent or better understanding of accountability and assessment communications. There were 172 Medium Experienced Teachers of whom 116 (67.44%) met the 75 percent or better criterion of understanding. There were 136 Highly Experienced Teachers of whom 78 (57.35%) met the criterion of 75 percent or better understanding.

The calculated chi-square value was 4.998 which was not significant at the .05 level when compared with the tabled chi-square value 5.991.

The null hypothesis of equivalent proportions of understanding among Less Experienced Teachers, Medium Experienced Teachers, and Highly Experienced Teachers was accepted.

These results are summarized in Table 4.11 below. Also, see Table A.5 in Appendix.

The fourth Independent variable of interest was District-Size with three levels: (1) Small, (2) Medium, and (3) Large.

There were 167 teachers from Small districts in this sample. Of these 167 teachers 108 (64.67%) understood the communications of accountability and assessment at the 75 percent or better level. There were 130 teachers from Medium sized districts of whom 70 (53.85%) understood at

Table 4.11.--Proportion Who Understood by Experience.

| Independent<br>Variable 3:<br>Tchg Exp                                                                             | Prop.<br>Who<br>Understood | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | H <sub>0</sub><br>Signifi-<br>cant? |
|--------------------------------------------------------------------------------------------------------------------|----------------------------|----|-------------------|--------------------|-------------------------------------|
| LET                                                                                                                | 57.14%                     | 2  | 4.998             | 5.998              | No                                  |
| MET                                                                                                                | 67.44%                     |    |                   |                    |                                     |
| HET                                                                                                                | 57.35%                     |    |                   |                    |                                     |
|                                                                                                                    | p=.05                      |    |                   |                    |                                     |
| H <sub>0</sub> : P <sub>L<sub>u</sub></sub> = P <sub>M<sub>u</sub></sub> = P <sub>H<sub>u</sub></sub> was accepted |                            |    |                   |                    |                                     |

the 75 percent or better level. There were 71 teachers from Large districts of whom 50 (70.42%) met the criterion of 75 percent or better understanding.

The calculated chi-square value was 7.920 which was significant at the .05 level when compared with the tabled chi-square value 5.991.

The null hypothesis of equivalent levels of understanding among teachers from Small, Medium, and Large districts in reference to understanding accountability and assessment communications was rejected.

Since this chi-square test differed from expectation the degree of association between the independent variable District-Size and the dependent variable Understanding (of accountability and assessment communications)

was estimated by the corrected coefficient of contingency which yielded the result:  $\bar{C}=.211$ .<sup>1</sup>  $\bar{C}=.211$  indicates a slight relationship between the variables. These results are summarized in Table 4.12 below. Also, see Table A.5 in Appendix.

Table 4.12.--Proportion Who Understood by District Size.

| Independent<br>Variable 4:<br>District Size      | Prop.<br>Who<br>Understood | df | Calc.<br>$\chi^2$ | Tabled<br>$\chi^2$ | $H_0$<br>Signifi-<br>cant? |
|--------------------------------------------------|----------------------------|----|-------------------|--------------------|----------------------------|
| Small                                            | 64.67%                     | 2  | 7.920             | 5.991              | Yes                        |
| Medium                                           | 53.85%                     |    |                   |                    |                            |
| Large                                            | 70.42%                     |    |                   |                    |                            |
| p=.05                                            |                            |    |                   |                    |                            |
| $H_0 : P_{S_u} = P_{M_u} = P_{L_u}$ was rejected |                            |    |                   |                    |                            |
| $\bar{C}=.211$                                   |                            |    |                   |                    |                            |

### Likert Scales

#### Subscale II-A

Subscale II-A is designed to measure the satisfactions component of Barnard's principle:

At the time of decision it is believed the communication is not inconsistent with the purposes of the organization as the teacher understands it.<sup>2</sup>

<sup>1</sup>See pp. 127-28 above.

<sup>2</sup>See Barnard, Functions of the Executive, p. 165.

The means of the independent variables: (1) Sex of Teacher, (2) Grade Level Taught, (3) Years of Teaching Experience, and (4) District Size were tested at the  $p.05$  level by means of a fixed effects, one-way, analysis of variance to determine if they represented the same, or different, populations as measured on Subscale II-A.

The fixed effects, one-way, analysis of variance revealed that differences do exist among the levels of the independent variable, Teaching Experience, but not among the levels of the remaining independent variables: Sex of Teacher, Grade Level Taught, and District Size. Summary results of the fixed effects, one-way analysis of variance, for each of the independent variables, is presented below in Table 4.13.

Since the fixed effects, one-way, analysis of variance indicated that differences exist among the three levels of the independent variable: Teaching Experience, a Scheffe, post-hoc comparison was made. The Scheffe, post-hoc comparison indicated that less experienced teachers (LET) differ from highly experienced teachers (HET). There were no significant differences found in the comparisons of the mean response rates of less experienced teachers and medium experienced teachers (MET). Additionally, there were no significant differences found in the mean response rates of medium experienced teachers and highly experienced teachers. The results of Scheffe,

Table 4.13.--One-Way, Fixed Effects ANOVA Table on Four Independent Variables Measured on Subscale II-A.

| Independent Variable 1:<br>Sex of Teacher | df  | MS    | F-ratio | p-value | H <sub>0</sub><br>Signifi-<br>cant? |
|-------------------------------------------|-----|-------|---------|---------|-------------------------------------|
| Between Groups                            | 1   | 11.35 | .9614   | .3275   | No                                  |
| Within Groups                             | 367 | 11.81 |         |         |                                     |
| $H_0 : u_1 = u_2$ is accepted             |     |       |         |         |                                     |
| Independent Variable 2:<br>Grade Level    | df  | MS    | F-ratio | p-value | H <sub>0</sub><br>Signifi-<br>cant? |
| Between Groups                            | 2   | 31.18 | 2.6806  | .0699   | No                                  |
| Within Groups                             | 363 | 11.63 |         |         |                                     |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |       |         |         |                                     |
| Independent Variable 3:<br>Teaching Exp.  | df  | MS    | F-ratio | p-value | H <sub>0</sub><br>Signifi-<br>cant? |
| Between Groups                            | 2   | 66.17 | 5.7235  | .0036   | Yes                                 |
| Within Groups                             | 361 | 11.56 |         |         |                                     |
| $H_0 : u_1 = u_2 = u_3$ is rejected       |     |       |         |         |                                     |
| Independent Variable 4:<br>District Size  | df  | MS    | F-ratio | p-value | H <sub>0</sub><br>Signifi-<br>cant? |
| Between Groups                            | 2   | 29.94 | 2.5505  | .0795   | No                                  |
| Within Groups                             | 365 | 11.74 |         |         |                                     |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |       |         |         |                                     |

post-hoc comparisons on independent variable 3, (Teaching Experience) are presented below in Table 4.14.

Table 4.14.--Scheffe, Post-hoc Comparisons for Mean Response Rates of Less Experienced Teachers, Medium Experienced Teachers, and Highly Experienced Teachers on Teaching Experience (II-A).

| Estimate of Comparison | $\phi \hat{\phi}$ -ratio | Compared With | Significant |
|------------------------|--------------------------|---------------|-------------|
| (1) LET&MET            | 1.3628                   | 2.6           | No          |
| (2) LET&HET            | 3.1097                   | 2.6           | Yes         |
| (3) MET&HET            | 2.4749                   | 2.6           | No          |

Since less experienced teachers and highly experienced teachers are significantly different as measured on Subscale II-A their mean scale value scores are presented. The mean scale value score for less experienced teachers is 2.96 on Subscale II-A with the .95 confidence interval:  $2.75 < u < 3.17$ .

The mean scale value score for highly experienced teachers on Subscale II-A is 2.54 with the .95 confidence interval:  $2.39 < u < 2.69$ .

The mean response rate for the total sample of 369 K-8 Michigan teachers was 2.72.<sup>1</sup> A t-test at the .05 level did not reject the null hypothesis :  $H_0 : u=3$ . The t-test yielded a calculated  $t$  of -1.549 which was compared

<sup>1</sup>See Appendix A.6.

to a tabled  $t$  of  $\pm 1.970$ , with an alpha level of .05 and 368 degrees of freedom. The .95 confidence interval around the derived mean scale value 2.72 in this t-test was:

$2.37 < u < 3.07$ .

#### Subscale II-B

Subscale II-B is designed to measure the dissatisfactions component of Barnard's principle:

At the time of decision it is believed the communication is not inconsistent with the purpose of the organization as the teacher understands it.<sup>1</sup>

The means of the independent variables: (1) Sex of Teacher, (2) Grade Level Taught, (3) Years of Teaching Experience, and (4) District Size were tested at the p.05 level by means of a one-way, fixed effects, analysis of variance to determine if they represented the same, or different, populations as measured on Subscale II-B.

The fixed effects, one-way analysis of variance revealed that there were no significant differences among the means of the independent variables on Subscale II-B. Summary results of this fixed effects, one-way, analysis of variance are presented in Table 4.15 below.

The fixed effects, one-way, analysis of variance indicated there were no significant differences among the independent variables on Subscale II-B and therefore no post-hoc analysis was conducted.

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<sup>1</sup>See Barnard, Functions of the Executive, p. 165.

Table 4.15.--One-Way Fixed Effects ANOVA Table on Four Independent Variables Measured on Subscale II-B.

| Independent Variable 1:<br>Sex of Teacher | df  | MS    | F-ratio | p-value | H <sub>0</sub><br>Signifi-<br>cant? |
|-------------------------------------------|-----|-------|---------|---------|-------------------------------------|
| Between Groups                            | 1   | 13.30 | 2.0114  | .1570   | No                                  |
| Within Groups                             | 367 | 6.61  |         |         |                                     |
| $H_0 : u_1 = u_2$ is accepted             |     |       |         |         |                                     |
| Independent Variable 2:<br>Grade Level    | df  | MS    | F-ratio | p-value | H <sub>0</sub><br>Signifi-<br>cant? |
| Between Groups                            | 2   | 5.66  | .8548   | .4263   | No                                  |
| Within Groups                             | 363 | 6.65  |         |         |                                     |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |       |         |         |                                     |
| Independent Variable 3:<br>Teaching Exp.  | df  | MS    | F-ratio | p-value | H <sub>0</sub><br>Signifi-<br>cant? |
| Between Groups                            | 2   | 7.36  | 1.1070  | .3317   | No                                  |
| Within Groups                             | 361 | 6.65  |         |         |                                     |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |       |         |         |                                     |
| Independent Variable 4:<br>District Size  | df  | MS    | F-ratio | p-value | H <sub>0</sub><br>Signifi-<br>cant? |
| Between Groups                            | 2   | 7.74  | 1.1741  | .3103   | No                                  |
| Within Groups                             | 365 | 6.59  |         |         |                                     |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |       |         |         |                                     |

The mean response rate for the total sample of 368 K-8 Michigan teachers was 1.900.<sup>1</sup> A  $t$ -test at the .05 level rejected the null hypothesis:  $H_0 : u = 3$ . The  $t$ -test yielded a calculated  $t$  of -8.205 which was compared to a tabled  $t$  of  $\pm 1.970$  with an alpha level of .05 and 368 degrees of freedom. The .95 confidence interval around the derived mean scale value 1.900 was:  $1.64 < u < 2.16$ .

### Scale II

Scale II is designed to measure the satisfactions and dissatisfactions components of Barnard's principle:

At the time of decision it is believed the communication is not inconsistent with the purposes of the organization as the teacher understands it.<sup>2</sup>

The means of the independent variables: (1) Sex of Teacher, (2) Grade Level Taught, (3) Years of Teaching Experience, and (4) District Size were tested at the  $p.05$  level by means of a fixed effects, one-way, analysis of variance to determine if they represented the same, or different, populations as measured on Scale II.

The fixed effects, one-way, analysis of variance revealed that differences do exist among the levels of the independent variable Teaching Experience, but not among the levels of the remaining independent variables: Sex of Teacher, Grade Level Taught, and District Size. Summary

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<sup>1</sup>See Appendix A.6.

<sup>2</sup>See Barnard, Functions of the Executive, p. 165.

results of the fixed effects, one-way, analysis of variance, for each of the independent variables is presented below in Table 4.16.

Since the fixed effects, one-way, analysis of variance indicated that differences exist among the three levels of the independent variable: Teaching Experience, a Scheffe, post-hoc comparison was made. The Scheffe, post-hoc comparison indicated that less experienced teachers, (LET) differ from highly experienced teachers (HET) as they did on Subscale II-A. There were no significant differences found in the comparisons of the mean response rates of less experienced teachers and medium experienced teachers (MET). There were no significant differences found in the mean response rates of medium experienced teachers and highly experienced teachers. The results of the Scheffe, post-hoc comparisons on independent variable 3, (Teaching Experience), are presented in Table 4.17 below.

Since less experienced teachers and highly experienced teachers are significantly different as measured on Scale II their mean scale value scores are presented. The mean scale value score for less experienced teachers is 2.48 on Scale II, with the .95 confidence interval:  $2.32 < u < 2.64$ .

The mean scale value score on Scale II for highly experienced teachers is 2.19 with the .95 confidence interval:  $2.08 < u < 2.30$ .

Table 4.16.--One-Way, Fixed Effects ANOVA Table on Four Independent Variables Measured on Scale II.

| Independent Variable 1:<br>Sex of Teacher | df  | MS     | F-ratio | p-value | $H_0$<br>Signifi-<br>cant? |
|-------------------------------------------|-----|--------|---------|---------|----------------------------|
| Between Groups                            | 1   | 49.24  | 1.9027  | .1687   | No                         |
| Within Groups                             | 367 | 25.87  |         |         |                            |
| $H_0 : u_1 = u_2$ is accepted             |     |        |         |         |                            |
| Independent Variable 2:<br>Grade Level    | df  | MS     | F-ratio | p-value | $H_0$<br>Signifi-<br>cant? |
| Between Groups                            | 2   | 63.39  | 2.4826  | .0850   | No                         |
| Within Groups                             | 363 | 25.53  |         |         |                            |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |        |         |         |                            |
| Independent Variable 3:<br>Teaching Exp.  | df  | MS     | F-ratio | p-value | $H_0$<br>Signifi-<br>cant? |
| Between Groups                            | 2   | 117.08 | 4.5818  | .0109   | Yes                        |
| Within Groups                             | 361 | 25.55  |         |         |                            |
| $H_0 : u_1 = u_2 = u_3$ is rejected       |     |        |         |         |                            |
| Independent Variable 4:<br>District Size  | df  | MS     | F-ratio | p-value | $H_0$<br>Signifi-<br>cant? |
| Between Groups                            | 2   | 50.16  | 1.9445  | .1446   | No                         |
| Within Groups                             | 365 | 25.79  |         |         |                            |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |        |         |         |                            |

Table 4.17.--Scheffe, Post-hoc Comparisons for Mean Response Rates of Less Experienced Teachers, Medium Experienced Teachers, and Highly Experienced Teachers Experience--Scale II.

| Estimate of Comparison | $\frac{\sigma}{\sigma_{\phi}}$ -ratio | Compared With | Significant |
|------------------------|---------------------------------------|---------------|-------------|
| (1) LET&MET            | 1.342                                 | 2.6           | No          |
| (2) LET&HET            | 2.838                                 | 2.6           | Yes         |
| (3) MET&HET            | 2.126                                 | 2.6           | No          |

The mean scale value response rate for the total sample of 369 K-8 Michigan teachers was 2.31.<sup>1</sup> A t-test at the .05 level rejected the null hypothesis:  $H_0 : u = 3$ . The t-test yielded a calculated t of -2.599 which was compared to the tabled t of +1.970 with an alpha level of .05 and 368 degrees of freedom. The .95 confidence interval around the derived mean scale value 2.31 was:  $1.78 < u < 2.83$ .

### Scale III

Scale III is designed to measure Barnard's principle:

At the time of his decision the teacher believes the communication is compatible with his interest as a whole.<sup>2</sup>

The following independent variables: (1) Sex of Teacher, (2) Grade Level Taught, (3) Years of Teaching

<sup>1</sup>See Appendix A.6.

<sup>2</sup>Barnard, Functions of the Executive, p. 165.

Experience and (4) District Size were tested at the  $p .05$  level by means of a fixed effects, one-way, analysis of variance to determine if they represented the same, or different, populations as measured on Scale III.

The fixed effects, one-way, analysis of variance revealed that differences exist among the levels of the independent variables: Sex of Teacher, Grade Level Taught, and Years of Teaching Experience, but not among the levels of the independent variable, District Size. Summary results of the fixed effects, one-way, analysis of variance, for each of the independent variables is presented below in Table 4.18.

Since the fixed effects, one-way, analysis of variance indicated that differences existed among the levels of the independent variables: Sex of Teacher, Grade Level Taught, and Years of Teaching Experience, Scheffe post-hoc comparisons were made on these independent variables.

The Scheffe, post-hoc comparison on the independent variable, Sex of Teacher affirmed that men's responses were different from women's responses on Scale III.

The Scheffe, post-hoc comparison on the independent variable Grade Level Taught indicated that primary grade teachers' (Prim) responses were significantly different from upper grade teachers' (Uppr) responses. There were no significant differences in the responses of primary grade teachers' responses compared with the responses of

Table 4.18.--One-Way, Fixed Effects ANOVA Table on Four Independent Variables Measured on Scale III.

| Independent Variable:               | df  | MS     | F-ratio | p-value | $H_0$ Significant? |
|-------------------------------------|-----|--------|---------|---------|--------------------|
| Sex of Teacher                      |     |        |         |         |                    |
| Between Groups                      | 1   | 163.54 | 5.8307  | .0163   | Yes                |
| Within Groups                       | 367 | 28.05  |         |         |                    |
| $H_0 : u_1 = u_2$ is rejected       |     |        |         |         |                    |
| Independent Variable 2:             | df  | MS     | F-ratio | p-value | $H_0$ Significant? |
| Grade Level                         |     |        |         |         |                    |
| Between Groups                      | 2   | 101.80 | 3.7134  | .0254   | Yes                |
| Within Groups                       | 363 | 27.41  |         |         |                    |
| $H_0 : u_1 = u_2 = u_3$ is rejected |     |        |         |         |                    |
| Independent Variable 3:             | df  | MS     | F-ratio | p-value | $H_0$ Significant? |
| Teaching Exp.                       |     |        |         |         |                    |
| Between Groups                      | 2   | 116.87 | 4.1543  | .0165   | Yes                |
| Within Groups                       | 361 | 28.13  |         |         |                    |
| $H_0 : u_1 = u_2 = u_3$ is rejected |     |        |         |         |                    |
| Independent Variable 4:             | df  | MS     | F-ratio | p-value | $H_0$ Significant? |
| District Size                       |     |        |         |         |                    |
| Between Groups                      | 2   | 16.17  | .5670   | .5678   | No                 |
| Within Groups                       | 365 | 28.52  |         |         |                    |
| $H_0 : u_1 = u_2 = u_3$ is accepted |     |        |         |         |                    |

intermediate grade teachers (Int). Also, there were no significant differences in the responses of intermediate grade teachers' responses compared with upper grade teachers' responses.

The Scheffe, post-hoc comparison on the independent variable Years of Teaching Experience revealed that highly experienced teachers' responses differed significantly from less experienced teachers' responses on Scale III. There were no significant differences when the responses of less experienced teachers and medium experienced teachers were compared. Similarly, there were no significant differences found when the responses of medium experienced teachers and highly experienced teachers were compared.

The results of the Scheffe, post-hoc comparisons on the independent variables, Sex of Teacher, Grade Level Taught, and Years of Teaching Experience are summarized below in Table 4.19.

The mean scale value scores for significantly different levels of the independent variables: Sex of Teacher, Grade Level Taught, and Years of Teaching Experience are presented in summary form in Table 4.20 below. Each mean scale value is presented with a .95 confidence interval around it.

Table 4.19.--Scheffe Post-hoc Comparisons on Three Independent Variables--Scale III.

| Variable 1: Sex of Teacher               |                           |               |              |
|------------------------------------------|---------------------------|---------------|--------------|
| Estimate of Comparison                   | $\phi \delta_\phi$ -ratio | Compared With | Significant? |
| Men & Women                              | 2.422                     | 1.96          | Yes          |
| Variable 2: Grade Level Taught           |                           |               |              |
| Estimate of Comparison                   | $\phi \delta_\phi$ -ratio | Compared With | Significant? |
| (1) Prim&Int                             | -1.643                    | 2.46          | No           |
| (2) Prim&Uppr                            | -2.743                    | 2.46          | Yes          |
| (3) Int&Uppr                             | -2.022                    | 2.46          | No           |
| Variable 3: Years of Teaching Experience |                           |               |              |
| Estimate of Comparison                   | $\phi \delta_\phi$ -ratio | Compared With | Significant? |
| (1) LET&MET                              | 1.0349                    | 2.46          | No           |
| (2) LET&HET                              | 4.816                     | 2.46          | Yes          |
| (3) MET&HET                              | 2.204                     | 2.46          | No           |

Table 4.20.--Mean Scale Value Scores of Significant Independent Variables With .95 Confidence Intervals (III).

| Independent Variable: | Level  | Mean SV | .95 Confidence Interval             |
|-----------------------|--------|---------|-------------------------------------|
| <u>Sex of Tchr.</u>   | Male   | 2.76    | 2.63 <u>&lt;</u> u <u>&lt;</u> 2.89 |
|                       | Female | 2.56    | 2.48 <u>&lt;</u> u <u>&lt;</u> 2.63 |
| <u>Grade Level</u>    | Prim   | 2.51    | 2.40 <u>&lt;</u> u <u>&lt;</u> 2.62 |
|                       | Uppr   | 2.77    | 2.63 <u>&lt;</u> u <u>&lt;</u> 2.91 |
| <u>Yrs Tchg Exp.</u>  | LET    | 2.75    | 2.60 <u>&lt;</u> u <u>&lt;</u> 2.92 |
|                       | HET    | 2.48    | 2.35 <u>&lt;</u> u <u>&lt;</u> 2.60 |

The mean scale value score for the total sample of 369 K-8 Michigan teachers was 2.60.<sup>1</sup> A t-test at the .05 level did not reject the null hypothesis:  $H_0 : u = 3$ . The t-test yielded a calculated t of -1.429 with an alpha level of .05 and 368 degrees of freedom. The .95 confidence interval around the derived mean scale value 2.60 was: 2.53<u<2.67.

#### Scale IV

Scale IV is designed to measure Barnard's principle:

The teacher is able, mentally and physically, to comply.<sup>2</sup>

<sup>1</sup>See Appendix A.6.

<sup>2</sup>See Barnard, Functions of the Executive, p. 165.

The means of the independent variables: (1) Sex of Teacher, (2) Grade Level Taught, (3) Years of Teaching Experience, and (4) District Size, were tested at the  $p .05$  level by means of a fixed effects, one-way, analysis of variance to determine if they represented the same, or different, populations as measured on Scale IV.

The fixed effects, one-way, analysis of variance revealed that there were no significant differences among the levels of the independent variables as measured on Scale IV. Summary results of the fixed effects, one-way, analysis of variance, for each of the independent variables, is presented below in Table 4.21.

The fixed effects, one-way, analysis of variance indicated there were no significant differences among the levels of the independent variables on Scale IV and therefore no post-hoc analysis was conducted.

The mean response rate for the total sample of 369 K-8 Michigan teachers was 2.204.<sup>1</sup> A  $t$ -test at the  $.05$  level rejected the null hypothesis:  $H_0 : u = 3$ . The  $t$ -test yielded a calculated  $t$  of  $-3.289$  which was compared to a tabled  $t$  of  $\pm 1.970$  with an alpha level of  $.05$  and 368 degrees of freedom. The  $.95$  confidence interval around the derived mean scale value 1.900 was:  $1.72 < u < 2.68$ .

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<sup>1</sup>See Appendix A.6.

Table 4.21.--One-Way, Fixed Effects ANOVA Table on Four Independent Variables Measured on Scale IV.

| Independent Variable 1:<br>Sex of Teacher | df  | MS    | F-ratio | p-value | $H_0$<br>Signifi-<br>cant? |
|-------------------------------------------|-----|-------|---------|---------|----------------------------|
| Between Groups                            | 1   | 76.58 | 3.5661  | .0598   | No                         |
| Within Groups                             | 367 | 21.47 |         |         |                            |
| $H_0 : u_1 = u_2$                         |     |       |         |         |                            |
| Independent Variable 2:<br>Grade Level    | df  | MS    | F-ratio | p-value | $H_0$<br>Signifi-<br>cant? |
| Between Groups                            | 2   | 21.37 | .9838   | .3749   | No                         |
| Within Groups                             | 363 | 21.72 |         |         |                            |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |       |         |         |                            |
| Independent Variable 3:<br>Teaching Exp.  | df  | MS    | F-ratio | p-value | $H_0$<br>Signifi-<br>cant? |
| Between Groups                            | 2   | 17.3  | .7953   | .4525   | No                         |
| Within Groups                             | 361 | 21.76 |         |         |                            |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |       |         |         |                            |
| Independent Variable 4:<br>District Size  | df  | MS    | F-ratio | p-value | $H_0$<br>Signifi-<br>cant? |
| Between Groups                            | 2   | 2.79  | .1284   | .8696   | No                         |
| Within Groups                             | 365 | 21.78 |         |         |                            |
| $H_0 : u_1 = u_2 = u_3$ is accepted       |     |       |         |         |                            |

### The Zone of Indifference

Barnard classifies orders, (communications) into three categories: (1) those which are clearly unacceptable and will not be carried out, (2) those which are on the neutral line and may, or may not, be carried out, and (3) those which are clearly acceptable and will be carried out as a matter of course. The third category of orders are those which lie within the zone of indifference.<sup>1</sup> For an order to lie within the zone of indifference it must be authoritative, that is the teacher: (1) can and does understand the communication, (2) believes it is not inconsistent with the purposes of the organization, (3) believes it compatible with his personal interest, and (4) is physically and mentally able to comply.<sup>2</sup>

When results are examined on ordinal data and nominal data there are no groups of teachers observed in this sample who fall into the zone of indifference, that is whose mean scale value score is above "3," whose .95 confidence interval does not cross "3" and whose level of understanding is such that at least 50 percent of the group has 75 percent or better understanding.

The definition of a clearly unacceptable order is one where the mean scale value score is below "3," whose .95 confidence interval does not cross "3" or where the

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<sup>1</sup>Barnard, Functions of the Executive, pp. 168-69.

<sup>2</sup>Ibid., p. 165.

level of understanding is such that less than 50 percent of the group demonstrates 75 percent or better understanding.

By this definition, the sample as a whole and the sample observed in terms of four independent variables: (1) Sex of Teacher, (2) Grade Level Taught, (3) Years of Teaching Experience, and (4) District Size, regard the orders (communications) of accountability and assessment as clearly unacceptable as measured on scales: II (not inconsistent with purposes of organization), III (compatible with personal interest), and IV (mentally and physically able to comply). Although the sample as a whole, and the sample as observed by the independent variables regard the orders, (communications of accountability and assessment) as unacceptable there are differences. These differences are found on Scales II and III among levels of significantly different independent variables. These results are summarized below in Table 4.22.

The definition for an order within the neutral but favorably disposed zone is: the mean scale value lies above "3," its .95 confidence interval crosses "3" (on ordinal data), and the understanding level is 75 percent or better (for 50% or more of a group of teachers) on nominal data. This condition is met on Scale II-A (Purpose of organization-satisfactions). On that subscale the entire sample falls into the neutral and favorably disposed zone with Less Experienced Teachers and Highly Experienced

Table 4.22.--Groups of Teachers Regarding Order as Un-acceptable by Scales and Significant Levels.

| Scale II (Not inconsistent with purposes of organization) |           |                         |
|-----------------------------------------------------------|-----------|-------------------------|
|                                                           | $\bar{x}$ | .95 Confidence Interval |
| Entire Sample                                             | 2.31      | 1.78<u<2.83             |
| LET                                                       | 2.48      | 2.32<u<2.64             |
| HET                                                       | 2.19      | 2.08<u<2.30             |
| Scale III (Compatible with personal interest)             |           |                         |
|                                                           | $\bar{x}$ | .95 Confidence Interval |
| Entire Sample                                             | 2.60      | 2.53<u<2.67             |
| Males                                                     | 2.76      | 2.63<u<2.89             |
| Females                                                   | 2.56      | 2.48<u<2.63             |
| Primary                                                   | 2.51      | 2.40<u<2.62             |
| Upper                                                     | 2.77      | 2.63<u<2.91             |
| LET                                                       | 2.75      | 2.60<u<2.92             |
| HET                                                       | 2.48      | 2.35<u<2.60             |
| Scale IV (Mentally and physicall able to comply)          |           |                         |
|                                                           | $\bar{x}$ | .95 Confidence Interval |
| Entire Sample                                             | 2.20      | 1.72<u<2.68             |

Teachers being significantly different. Less Experienced Teachers are within the Neutral but favorably disposed zone but Highly Experienced Teachers are within the zone where the orders are clearly unacceptable. These results are summarized in Table 4.23 below.

Table 4.23.--Results of Subscale II-A by Sample and Levels.

| Subscale II-A (Not inconsistent with purposes-satisfactions) |           |                         |
|--------------------------------------------------------------|-----------|-------------------------|
|                                                              | $\bar{x}$ | .95 Confidence Interval |
| Entire Sample                                                | 2.72      | $2.37 < u < 3.07$       |
| LET                                                          | 2.96      | $2.75 < u < 3.17$       |
| HET                                                          | 2.54      | $2.39 < u < 2.69$       |

On Subscale II-B (Purpose of organization-dissatisfactions) the entire sample with no significant differences fell into the zone where the orders were clearly unacceptable. The mean was 1.900 with the .95 confidence interval:  $1.64 < u < 2.16$ .

The criterion of understanding is that at least 50 percent of a group of teachers understand 75 percent or more of the communication. By this definition all groups of teachers observed in this sample may be said to understand the communication.

### Perceived Authority

For the state department of education to hold the authority of leadership in reference to accountability and assessment communications these communications must fall within the teachers' zone of indifference.

The zone of indifference is that result which obtains when the mean scale score is above "3," its .95 confidence interval does not cross "3" (on ordinal data) and the level of understanding is 75 percent or greater (for 50% or more of the teachers, on nominal data).

No groups of teachers observed in this sample met these criteria.

For the state department of education to hold the authority of position in reference to accountability and assessment communications, these communications must fall into the zone where teachers regard the orders as clearly unacceptable.

The zone where orders are clearly unacceptable obtains when the mean scale score is below "3," its .95 confidence interval does not cross "3" (on ordinal data) or the level of understanding is such that less than 50 percent of the group of teachers understand 75 percent of the communication, (on nominal data).

All observed groups of teachers in this sample met these criteria on Scales II, III, IV, and Subscale II-B. Highly Experienced Teachers met these criteria on Subscale II-A.

For the state department of education to be regarded in the neutral zone with teachers disposed, the mean scale score should be "3," its .95 confidence interval would cross "3" (on ordinal data) and the understanding level would be 75 percent or better (for 50% or more of a group of teachers on nominal data).

This criterion was met for the sample as a whole, and for Less Experienced Teachers on Subscale II-A.

For the state department of education to be regarded in the neutral zone with teachers unfavorable disposed, the mean scale score would be below "3," its .95 confidence interval would cross "3" (on ordinal data) and the level of understanding would be such that 50 percent or more of the group does not understand 75 percent of the communication on nominal data.

No group of teachers observed in this sample met these criteria.

#### Unintended Effects

Unintended effects are defined as those groups of teachers whose mean scale value scores lie below "3," whose .95 confidence intervals do not cross "3" or whose level of understanding is such that 50 percent or less of the group understands 75 percent of the communication.

By this definition all groups of teachers observed in this sample create unintended effects as measured on

Scales II, III, IV, Subscale II-B and Highly Experienced Teachers on Subscale II-A.

Non-Response

One hundred sixteen persons, 23.20 percent of the sample, did not respond to the questionnaire. Of these 116 persons who did not respond 14 were men and 102 were women. Since non-response bias can increase sampling error an estimate of the attitudes and understanding of non-responders was sought. A 10 percent sample of 12 persons, 3 men and 9 women, was decided upon.

Moser and Kalton have suggested that follow-up studies may employ economies and that complete information is not essential. These suggestions were followed.<sup>1</sup>

The scales and subscales were reduced by one-half with those statements most highly correlated with their respective scales and subscales retained. The mode of contact with non-responding teachers was telephone interview.

A list of 5 male non-responders and 20 female non-responders was prepared. The sample was deemed complete when 3 males and 9 females had been successfully interviewed.

To interview 3 men successfully, 4 telephone calls were necessary. One man indicated he was no longer

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<sup>1</sup>Moser and Kalton, Survey Methods, p. 186.

teaching and so his responses were not sought. The other 3 men were successfully interviewed. Of these 3 men, 1 indicated he had filled out the earlier mail questionnaire but had not mailed it, 1 indicated he had been out on strike and had returned to the classroom too late to participate in the survey, the third man indicate he had intended to fill out the survey but had never gotten to it.

In order to successfully interview 9 women teachers, 15 telephone calls were necessary. Three women teachers refused to be interviewed. One of these women indicated she knew nothing about accountability and assessment. The other 2 women in the refusal group would give no reason other than their wish not to participate. Three additional women were not interviewed because of retirement, leave of absence, and moving away. Of the 9 women participating in the follow-up telephone survey 1 indicated she was afraid of political reprisals if her views became known, 2 indicated they did not know very much about accountability and assessment and the remaining 6 women participants indicated that they had meant to fill out the mail questionnaire but had never gotten around to it.

When a teacher agreed to be interviewed the statements were read and then scored on the basis of the verbalized responses. Below, in Table 4.24 is a listing of results by non-responders and responders.

It would appear from this comparison that non-responding teachers are not radically different from

Table 4.24.--Summary Results of Non-Responders and Responders by Scale and Subscale.

| Sample of<br>Non-Responders<br>N=12 |                         | Population of<br>Responders<br>N=369 |                         |
|-------------------------------------|-------------------------|--------------------------------------|-------------------------|
| Scale                               | Prop. Who<br>Understood | Scale                                | Prop. Who<br>Understood |
| I-A                                 | 25.00%                  | I-A                                  | 59.89%                  |
| I-B                                 | 58.00%                  | I-B                                  | 71.27%                  |
| I                                   | 66.00%                  | I                                    | 61.79%                  |
| Scale                               | Mean Scale<br>Value     | Scale                                | Mean Scale<br>Value     |
| II-A                                | 2.41                    | II-B                                 | 2.72                    |
| II-B                                | 2.44                    | II-B                                 | 1.90                    |
| II                                  | 2.43                    | II                                   | 2.31                    |
| III                                 | 2.91                    | III                                  | 2.60                    |
| IV                                  | 2.60                    | IV                                   | 2.20                    |

responding teachers. Generalizations on the basis of this sample of 369 K-8 teachers should not be biased by the 116 non-responders.

### Summary

In this chapter each of Barnard's four principles for the determination of the authoritativeness of organizational communications relating to accountability and assessment were presented and analyzed quantitatively in terms of four independent variables: (1) Sex of Teacher, (2) Grade Level Taught, (3) Years of Teaching Experience, and (4) District Size. Levels of the independent variables were compared for significant differences at the .05 (or less) level.

Subscales I-A, I-B, and Scale I represent nominal data (The teacher can and does understand the communication) so the chi-square test was appropriate for analysis of the data.

For Subscale I-A the null hypothesis of equal proportions of understanding (accountability and assessment communications) among the levels of the independent variables: Grade Level Taught, Teaching Experience, and District Size were accepted but the null hypothesis was rejected for the independent variable: Sex of Teacher. These results are summarized in Table 4.25 below.

For Subscale I-B the null hypothesis of equal proportions of understanding of the conceptual component

Table 4.25.--Subscale I-A, Factual Component.

| Independent Variable | Hypothesis                          | p Level | Accept?<br>Reject? |
|----------------------|-------------------------------------|---------|--------------------|
| Sex of Teacher       | $H_O : P_{M_u} = P_{F_u}$           | .05     | Reject             |
| Grade Level Taught   | $H_O : P_{P_u} = P_{I_u} = P_{U_u}$ | .05     | Accept             |
| Teaching Experience  | $H_O : P_{L_u} = P_{M_u} = P_{H_u}$ | .05     | Accept             |
| District Size        | $H_O : P_{S_u} = P_{M_u} = P_{L_u}$ | .05     | Accept             |

of accountability and assessment communications among the levels of the independent variables: Sex of Teacher, and District Size were accepted but the null hypothesis was rejected for the independent variables: Grade Level and Teaching Experience. These results are summarized in Table 4.26 below.

Table 4.26.--Subscale II-A Conceptual Component.

| Independent Variable | Hypothesis                          | p Level | Accept?<br>Reject? |
|----------------------|-------------------------------------|---------|--------------------|
| Sex of Teacher       | $H_O : P_{M_u} P_{F_u}$             | .05     | Accept             |
| Grade Level Taught   | $H_O : P_{P_u} = P_{I_u} = P_{U_u}$ | .05     | Reject             |
| Teaching Experience  | $H_O : P_{L_u} = P_{M_u} = P_{U_u}$ | .05     | Reject             |
| District Size        | $H_O : P_{S_u} = P_{M_u} = P_{L_u}$ | .05     | Accept             |

For Scale I the null hypothesis of equal proportions of understanding of accountability and assessment communications among the levels of the independent variables: Sex of Teacher, and Teaching Experience was accepted. The null hypothesis was rejected for the independent variables: Grade Level Taught, and District Size. See Table 4.27 below for summary.

Table 4.27.--Scale I: Understanding.

| Independent Variable | Hypothesis                          | p Level | Accept? Reject? |
|----------------------|-------------------------------------|---------|-----------------|
| Sex of Teacher       | $H_O : P_{M_u} = P_{F_u}$           | .05     | Accept          |
| Grade Level Taught   | $H_O : P_{P_u} = P_{I_u} = P_{U_u}$ | .05     | Reject          |
| Teaching Experience  | $H_O : P_{L_u} = P_{M_u} = P_{H_u}$ | .05     | Accept          |
| District Size        | $H_O : P_{S_u} = P_{M_u} = P_{L_u}$ | .05     | Reject          |

Subscales II-A, II-B, and Scales II, III, and IV represent ordinal data and so the fixed effects, one-way analysis of variance was appropriate for analysis.

For Subscale II-A (Purpose of organization-satisfactions) the null hypothesis of equivalence among the levels of the independent variables: Sex of Teacher, Grade Level, and District Size was accepted but the null hypothesis was rejected for the independent variable: Teaching Experience.

These results are summarized in Table 4.28 below.

Table 4.28.--Subscale II-A Purpose of Organization  
(Satisfactions).

| Independent Variable | Hypothesis              | p<br>Level | Accept?<br>Reject? |
|----------------------|-------------------------|------------|--------------------|
| Sex of Teacher       | $H_O : u_1 = u_2$       | .3275      | Accept             |
| Grade Level Taught   | $H_O : u_1 = u_2 = u_3$ | .0699      | Accept             |
| Teaching Experience  | $H_O : u_1 = u_2 = u_3$ | .0036      | Reject             |
| District Size        | $H_O : u_1 = u_2 = u_3$ | .0795      | Accept             |

For Subscale II-B (Purpose of organization-dissatisfactions), the null hypothesis of equivalence among the levels of the independent variables: Sex of Teacher, Grade Level Taught, Teaching Experience, and District Size was accepted.

These results are presented in Table 4.29 below.

Table 4.29.--Subscale II-B Purpose of Organization  
(Dissatisfactions).

| Independent Variable | Hypothesis              | p<br>Level | Accept?<br>Reject? |
|----------------------|-------------------------|------------|--------------------|
| Sex of Teacher       | $H_O : u_1 = u_2$       | .1570      | Accept             |
| Grade Level Taught   | $H_O : u_1 = u_2 = u_3$ | .4263      | Accept             |
| Teaching Experience  | $H_O : u_1 = u_2 = u_3$ | .3317      | Accept             |
| District Size        | $H_O : u_1 = u_2 = u_3$ | .3103      | Accept             |

For Scale II (Purpose of organization) the null hypothesis of equivalence among the levels of the independent variables: Sex of Teacher, Grade Level Taught, and District Size was accepted. The null hypothesis was rejected for the independent variable: Teaching Experience. These results are summarized in Table 4.30 below.

Table 4.30.--Scale II Purpose of Organization.

| Independent Variable | Hypothesis              | p Level | Accept?<br>Reject? |
|----------------------|-------------------------|---------|--------------------|
| Sex of Teacher       | $H_0 : u_1 = u_2$       | .1687   | Accept             |
| Grade Level Taught   | $H_0 : u_1 = u_2 = u_3$ | .0850   | Accept             |
| Teaching Experience  | $H_0 : u_1 = u_2 = u_3$ | .0109   | Reject             |
| District Size        | $H_0 : u_1 = u_2 = u_3$ | .1446   | Accept             |

For Scale III (Compatible with personal interest) the null hypothesis of equivalence among the levels of the independent variable: District Size was accepted. The null hypothesis was rejected for the independent variables: Sex of Teacher, Grade Level Taught, and Teaching Experience.

These results are summarized in Table 4.31 below.

For Scale IV (Mentally and Physically Able) the null hypothesis of equivalence among the levels of the independent variables: Sex of Teacher, Grade Level Taught, Teaching Experience, and District Size was accepted.

These results are presented in Table 4.32 below.

Table 4.31.--Scale III Compatible With Personal Interest.

| Independent Variable | Hypothesis              | p<br>Level | <u>Accept?</u><br><u>Reject?</u> |
|----------------------|-------------------------|------------|----------------------------------|
| Sex of Teacher       | $H_O : u_1 = u_2$       | .0163      | Reject                           |
| Grade Level Taught   | $H_O : u_1 = u_2 = u_3$ | .0254      | Reject                           |
| Teaching Experience  | $H_O : u_1 = u_2 = u_3$ | .0165      | Reject                           |
| District Size        | $H_O : u_1 = u_2 = u_3$ | .5678      | Accept                           |

Table 4.32.--Scale IV Mentally and Physically Able to Comply.

| Independent Variable | Hypothesis              | p<br>Level | <u>Accept?</u><br><u>Reject?</u> |
|----------------------|-------------------------|------------|----------------------------------|
| Sex of Teacher       | $H_O : u_1 = u_2$       | .0598      | Accept                           |
| Grade Level Taught   | $H_O : u_1 = u_2 = u_3$ | .3749      | Accept                           |
| Teaching Experience  | $H_O : u_1 = u_2 = u_3$ | .4525      | Accept                           |
| District Size        | $H_O : u_1 = u_2 = u_3$ | .8796      | Accept                           |

No group of teachers observed fell into the zone of indifference.

The sample, observed as a whole, and as levels of independent variables, regarded the communications of accountability and assessment as clearly unacceptable on Scales II, III, IV, and Subscale II-B. Highly Experienced Teachers met these criteria on Subscale II-A.

For these groups of teachers, the state department of education holds the authority of position and creates unintended effects.

The exceptions to the above occurred on Subscale II-A where the sample as a whole, and Less Experienced Teachers as a group, fell into the zone where they were neutral but unfavorably oriented toward the communications of accountability and assessment.

## CHAPTER V

### Summary

The purpose of this work was to examine the effects on Michigan's K-8 teachers of a state department of education demand for accountability and assessment of learning outcomes using Barnard's theory of authority.

A thirty-two statement instrument based on Barnard's four principles of authority was developed, field tested, and mailed to 500, K-8 Michigan teachers so that data could be collected to determine the degree to which the teachers: (1) can and do understand the communication, (2) believe the communication not inconsistent with the purposes of the organization as they understand it, (3) believe it compatible with their personal interest, and (4) are able, mentally and physically to comply. Three hundred and eighty-four (76.8%) of the questionnaires were returned. Fifteen of these responses were not usable leaving a net usable sample of 369 (74.8%) teachers.

The purpose of the instrument was the systematic description of the understanding and attitudes of the teachers in terms of Barnard's theory of authority whose four criteria are outlined above.

Scale I, made up of subscale I-A (factual understanding), and subscale I-B (conceptual understanding) is the scale used to measure teacher understanding of the communications of accountability and assessment.

Barnard classified orders (communications), into three categories: (1) those which are clearly unacceptable and will not be carried out, (2) those which are on the neutral line and may or may not be carried out, and (3) those which are clearly acceptable and will be carried out as a matter of course. The third category of orders (communications), are those which lie within the zone of indifference.

In this study the zone of indifference could be observed when the mean scale value score was above "3," its .95 confidence interval did not cross "3" (ordinal data) and the level of understanding was 75 percent or greater (for 50% or more of a group of teachers on nominal data).

Clearly unacceptable orders could be observed when the mean scale value score was below "3," its .95 confidence interval did not cross "3" (ordinal data) or the level of understanding was such that fewer than 50 percent of a group of teachers understood at least 75 percent of the communication on nominal data.

Orders lying within the neutral zone were observed when the .95 confidence interval crossed "3" on ordinal

data. A neutral but favorably oriented position was indicated when the mean scale value score was above "3," its .95 confidence interval crossed "3," and the level of understanding for the group was such that 50 percent or more of a group of teachers demonstrated 75 percent or more understanding as measured on the scale. A neutral but negatively oriented position was indicated when the mean scale value score was below "3," its .95 confidence interval crossed "3," and the level of understanding was such that 50 percent or more of the group of teachers demonstrated 75 percent or better understanding, as measured on the scale. For an individual teacher, understanding was demonstrated by a score of 75 percent or better on a scale or subscale.

The remaining three scales of the instrument were operationalizations of Barnard's second (not inconsistent with purpose), third (consistent with personal interest) and fourth (physically and mentally able) principles are in the Likert-type format. The Likert-type scale is a five point scale ranging from "Strongly Agree" (5) to "Strongly Disagree" (1). A positive attitude (a score greater than "3") is an indication of acceptance of authority. A negative attitude (a score less than "3") is an indication of rejection of authority. A score of exactly "3" is an indication of a neutral position.

Understanding, (Scale I, Subscales I-A and I-B) were analyzed in terms of proportions of groups of teachers who responded either "Yes" or "No" to statements on a scale or subscale. These data represented nominal categorizations and therefore the chi-square test was appropriate for data analysis.

Scale II, (Subscales II-A and II-B), III, and IV were the Likert-type statements and they were the means for quantifying Barnard's second, third, and fourth principles. These data are ordinal and so the fixed effects, one-way, analysis of variance was appropriate for data analysis. All tests were at the .05 level of significance, or less.

There were four independent variables which were: (1) Sex of Teacher, with two levels, (2) Grade Level Taught, with three levels, (3) Years of Teaching Experience, with three levels, and (4) District Size, with three levels.

Groups of teachers whose responses may have fallen into the zone of indifference could be said to regard the state department of education as possessing the authority of leadership as far as accountability and assessment communications are concerned. Groups of teachers whose responses may have fallen within the zone of clear unacceptance could be said to regard the state department of education as possessing the authority of position as far

as accountability and assessment communications are concerned.

Those teachers whose responses may have fallen into the neutral zone could be said to regard the state department of education as possessing the authority of leadership or the authority of position depending on attitude and understanding. In general, the more positive the attitude and the higher the level of understanding the greater is the tendency to view the state department of education as possessing the authority of leadership as far as accountability and assessment communications are concerned. The more negative the attitude and the lower the level of understanding the greater is the tendency to view the state department of education as possessing the authority of position as far as accountability and assessment communications are concerned.

Unintended effects could be observed when a group of teachers' responses fall within the zone where orders are defined as clearly unacceptable.

### Conclusions

This section of conclusions is related to Barnard's first principle: the teacher can and does understand the communication.<sup>1</sup>

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<sup>1</sup>See Barnard, Functions of the Executive, p. 165.

The total proportion of teachers who understood 75 percent or more of the communication as measured on Subscale I-A (factual component) was 59.89 percent.

Proportions of teachers who understood the factual component of accountability and assessment communications are given in Table 5.1, by levels of independent variables.

The total proportion of teachers who understood 75 percent or more of the communication on Subscale I-B (conceptual component) was 71.27 percent.

Proportions of teachers who understood the conceptual component of accountability and assessment communications are given in Table 5.2 by levels of independent variables.

The total proportion of teachers who understood 75 percent or more of the communication on Scale I (understanding) was 61.78 percent.

Proportions of teachers who understood accountability and assessment communications are given in Table 5.3, by levels of independent variables.

This section of conclusions is related to Barnard's second principle:

At the time of decision it is believed the communication is not inconsistent with the purpose<sup>1</sup> of the organization as the teacher understands it.

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<sup>1</sup>See Barnard, Functions of the Executive, p. 165.

Table 5.1.--Proportions of Teachers by Levels of Independent Variables Who Understood 75 Percent or More of Factual Component.

| Independent Variable 1: Sex of Teacher*     |        |
|---------------------------------------------|--------|
| Male                                        | 70.00% |
| Female                                      | 57.09% |
| Independent Variable 2: Grade Level Taught  |        |
| Primary                                     | 63.16% |
| Intermediate                                | 57.93% |
| Upper                                       | 57.97% |
| Independent Variable 3: Teaching Experience |        |
| Less Experienced Teacher                    | 61.37% |
| Medium Experienced Teacher                  | 57.79% |
| Highly Experienced Teacher                  | 57.97% |
| Independent Variable 4: District Size       |        |
| Small                                       | 62.87% |
| Medium                                      | 55.38% |
| Large                                       | 61.97% |

\*NOTE: Independent variable 1 significant at the .05 level with a corrected coefficient of contingency of .151.

Table 5.2.--Proportions of Teachers by Levels of Independent Variables Who Understood 75 Percent or More of Conceptual Component.

| Independent Variable 1: Sex of Teacher      |        |
|---------------------------------------------|--------|
| Male                                        | 66.25% |
| Female                                      | 72.66% |
| Independent Variable 2: Grade Level Taught* |        |
| Primary                                     | 71.44% |
| Intermediate                                | 71.95% |
| Upper                                       | 56.52% |
| Independent Variable 3: Teaching Experience |        |
| Less Experienced Teacher                    | 64.28% |
| Medium Experienced Teacher                  | 73.84% |
| Highly Experienced Teacher                  | 71.32% |
| Independent Variable 4: District Size       |        |
| Small                                       | 70.66% |
| Medium                                      | 66.92% |
| Large                                       | 80.28% |

\*NOTE: Independent variable 2 significant at the .05 level with a corrected coefficient of contingency of .249.

Table 5.3.--Proportions of Teachers by Levels of Independent Variables Who Understood 75 Percent or More of the Communication.

| Independent Variable 1: Sex of Teacher      |        |
|---------------------------------------------|--------|
| Male                                        | 65.00% |
| Female                                      | 60.90% |
| Independent Variable 2: Grade Level Taught* |        |
| Primary                                     | 67.67% |
| Intermediate                                | 62.20% |
| Upper                                       | 49.28% |
| Independent Variable 3: Teaching Experience |        |
| Less Experienced Teacher                    | 57.14% |
| Medium Experienced Teacher                  | 67.44% |
| Highly Experienced Teacher                  | 57.35% |
| Independent Variable 4: District Size*      |        |
| Small                                       | 64.67% |
| Medium                                      | 53.85% |
| Large                                       | 70.42% |

\*NOTE: Independent variables 2 and 4 significant at the .05. The corrected coefficient for Grade Level was .194, and for District Size it was .211.

For Subscale II-A (satisfactions) the mean scale value score for the entire sample was 2.72 with the .95 confidence interval ranging from 2.37 to 3.07.

Of the four independent variables, Teaching Experience showed differences between levels at .05. The levels which were different from each other were Highly Experienced Teachers and Less Experienced Teachers. These differences are listed below in Table 5.4.

Table 5.4.--Levels Different at .05 (II-A).

| Independent Variable 3: Years of Teaching Experience |                        |                     |
|------------------------------------------------------|------------------------|---------------------|
| Level                                                | Mean Scale Value Score | .95 Confidence Int. |
| LET                                                  | 2.96                   | $2.75 < \mu < 3.17$ |
| HET                                                  | 2.54                   | $2.39 < \mu < 2.69$ |

For Subscale II-B (dissatisfactions) the mean scale value score for the entire sample was 1.90 with the .95 confidence interval ranging from 1.64 to 2.16. At .05 no levels of the independent variables showed significant differences.

For Scale II (purpose of the organization) the mean scale value for the sample as a whole was 2.31 with the .95 confidence interval ranging from 1.78 to 2.83.

Of the four independent variables Teaching Experience showed significant differences at .05 between the

levels Less Experienced Teachers and Highly Experienced Teachers. These differences are listed below in Table 5.5.

Table 5.5.--Levels Different at .05 (II).

| Independent Variable 3: Years of Teaching Experience |                        |                     |
|------------------------------------------------------|------------------------|---------------------|
| Level                                                | Mean Scale Value Score | .95 Confidence Int. |
| LET                                                  | 2.48                   | $2.32 < \mu < 2.64$ |
| HET                                                  | 2.19                   | $2.08 < \mu < 2.30$ |

This section of conclusions is related to Barnard's third principle:

At the time of his decision the teacher believes the communication is compatible with his interest as a whole.<sup>1</sup>

For Scale III the mean scale value score for the sample as a whole was 2.60 with the .95 confidence interval ranging from 2.53 to 2.67.

Of the four independent variables, Sex of Teacher, Grade Level Taught, and Years of Teaching Experience, showed differences between levels at .05. These differences are listed in Table 5.6.

This section of conclusions is based on Barnard's fourth principle:

The teacher is able mentally and physically to comply.<sup>2</sup>

<sup>1</sup>See Barnard, Functions of the Executive, p. 165.

<sup>2</sup>Ibid.

Table 5.6.--Levels of Four Independent Variables Different at .05.

| Independent Variable 1: Sex of Teacher               |                        |                     |
|------------------------------------------------------|------------------------|---------------------|
| Level                                                | Mean Scale Value Score | .95 Conf. Int.      |
| Male                                                 | 2.76                   | $2.63 < \mu < 2.89$ |
| Female                                               | 2.56                   | $2.48 < \mu < 2.63$ |
| Independent Variable 2: Grade Level Taught           |                        |                     |
| Level                                                | Mean Scale Value Score | .95 Conf. Int.      |
| Primary                                              | 2.51                   | $2.40 < \mu < 2.62$ |
| Upper                                                | 2.77                   | $2.63 < \mu < 2.91$ |
| Independent Variable 3: Years of Teaching Experience |                        |                     |
| Level                                                | Mean Scale Value Score | .95 Conf. Int.      |
| LET                                                  | 2.75                   | $2.60 < \mu < 2.92$ |
| HET                                                  | 2.48                   | $2.35 < \mu < 2.60$ |

For Scale IV the mean scale value for the entire sample was 2.20 with the .95 confidence interval ranging from 1.72 to 2.68.

There were no significant differences among levels of the independent variables.

This section of conclusions is related to the research question: Is there a zone of indifference in this situation?

The definition of the zone of indifference in this study is: the mean scale value is above "3," the .95 confidence interval does not cross "3," and the level of understanding is such that at least 50 percent of the group of teachers demonstrates 75 percent or better understanding of the communications of accountability and assessment.

No groups of teachers met these criteria.

The definition of the zone where orders are clearly unacceptable in this study is: the mean scale value is below "3," the .95 confidence interval does not cross "3," or, the level of understanding is such that less than 50 percent of a group of teachers demonstrates 75 percent or better understanding of the communications of accountability and assessment.

Groups of teachers meeting these criteria are listed in Table 5.7.

Table 5.7.--Groups of Teachers Meeting Criteria for Zone of Unacceptable Orders by Subscale and Scale.

| Group                                                    | Mean Scale Value | .95 Conf. Int.      |
|----------------------------------------------------------|------------------|---------------------|
| Subscale II-A (purpose of organizations-satisfactions)   |                  |                     |
| HET                                                      | 2.54             | $2.39 < \mu < 2.69$ |
| Subscale II-B (purpose of organization-dissatisfactions) |                  |                     |
| Entire Sample                                            | 1.90             | $1.64 < \mu < 2.16$ |
| Scale II (purposes of the organization)                  |                  |                     |
| Entire Sample                                            | 2.31             | $1.78 < \mu < 2.83$ |
| LET*                                                     | 2.48             | $2.32 < \mu < 2.64$ |
| HET*                                                     | 2.19             | $2.08 < \mu < 2.30$ |
| Scale III (compatible with personal interest)            |                  |                     |
| Entire Sample                                            | 2.60             | $2.53 < \mu < 2.67$ |
| Males*                                                   | 2.76             | $2.63 < \mu < 2.89$ |
| Females*                                                 | 2.56             | $2.48 < \mu < 2.63$ |
| PRIM*                                                    | 2.51             | $2.40 < \mu < 2.62$ |
| UPPR*                                                    | 2.77             | $2.63 < \mu < 2.91$ |
| LET*                                                     | 2.75             | $2.60 < \mu < 2.92$ |
| HET*                                                     | 2.48             | $2.35 < \mu < 2.60$ |
| Scale IV (mentally and physically able)                  |                  |                     |
| Entire Sample                                            | 2.20             | $1.72 < \mu < 2.60$ |

\*NOTE: Starred groups refer to significantly different means at the .05 level.

The definitions of orders which are in the neutral zone but with teachers favorably disposed toward the communications of accountability and assessment is: the mean scale value is above "3," the .95 confidence interval crosses "3," and the understanding level is such that at least 50 percent of the group of teachers understand at least 75 percent of the communication. This condition was met on Subscale II-A (purpose of organization-satisfactions), by the entire sample and by Less Experienced Teachers. The mean scale value for the entire sample was 2.72 with the .95 confidence interval ranging from 2.37 to 3.07. The mean scale value for Less Experienced Teachers was 2.96 with the .95 confidence interval ranging from 2.75 to 3.17.

The definition of orders which are in the neutral zone but teachers are unfavorably disposed to the communications of accountability and assessment is: the mean scale value score is below "3," the .95 confidence interval crosses "3," and the understanding level is such that at least 50 percent of the group of teachers understands at least 75 percent of the communication.

There were no groups of teachers who met these criteria.

This section of conclusions is related to the research question: If there is perceived authority in this situation is it the authority of position or the authority of leadership? For the state department of

education to hold the position of leadership in reference to accountability and assessment communications these communications must fall within the teachers' zone of indifference. No groups of teachers were observed to regard the communications of accountability and assessment as falling within their zone of indifference.

For the state department of education to hold the position of the authority of position the communications must fall within the zone where they regard the communications as clearly unacceptable. All observed groups of teachers in this sample met the criteria on Scales II, III, IV, and Subscale II-B. Highly Experienced Teachers met these criteria on Subscale II-A.

This section of conclusions is related to the research question: Are there unintended effects in this state department demand for accountability and assessment? All groups of teachers observed in this sample create unintended effects as measured on Scales II, III, IV, Subscale II-B, and Highly Experienced Teachers on Subscale II-A.

### Discussion

Since the purpose of this work was to examine the effects on Michigan's K-8 teachers of a state department of education demand for accountability and assessment of learning outcomes using Barnard's theory of authority the findings were examined in terms of Barnard's four

criteria for the determination of authoritativeness of organizational communications. These criteria are: (1) the teacher can and does understand the communication, (2) at the time of decision he believes it not inconsistent with the purposes of the organization, (3) at the time of his decision he believes it to be compatible with his personal interest as a whole, and (4) he is able, mentally and physically, to comply.<sup>1</sup>

Scale I was designed to measure the criterion: the teacher can and does understand the communication. Since understanding was the criterion of interest the responses were in a "yes"-"No" format to statements which could be scored right or wrong. Within Scale I there were two, four statement, subscales. Subscale I-A was designed to measure literal understanding of the communications of accountability and assessment. Literal understanding is factual and descriptive and might be obtained from sources such as: peer contact, or media contact such as: professional journals, newspapers, and tv programs. Scale I-B was designed to measure conceptual understanding of the implications of the control of information. This understanding might be obtained from observations in settings where information is controlled by an identifiable source. In school settings this could be observed when an

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<sup>1</sup>See Barnard, Functions of the Executive, p. 165.

administrator, teacher, or secretary controls the channels of information.

The criterion for an individual teacher understanding the literal (factual) component of understanding (Subscale I-A) is a score of 75 percent or better. If an individual teacher scores 75 percent or better on Subscale I-A that teacher is said to understand the literal (factual) component of accountability and assessment communications. The criterion for a group of teachers understanding the literal (factual) component of accountability and assessment communications is at least 50 percent of the group understanding at least 75 percent of the communication.

The total proportion of teachers in this sample who understood the factual component of accountability and assessment communications was 59.89 percent. As a group, therefore, K-8 teachers in this sample can be said to have understood the literal (factual) component of accountability and assessment communications. Sex of Teacher was the only independent variable in which there were significant (.05) differences among levels. The proportion of men in the sample who understood 75 percent or more of the communications of accountability and assessment was 70.00 percent while the proportion of women in the sample who understood 75 percent or more of the communications of accountability and assessment was 57.09 percent.

In the course of this work it was observed that elementary school administrators appear to possess more factual information about accountability and assessment communications than do classroom teachers. Many elementary administrators are male.

It may be that the male administrators pass along the literal (factual) information to their male teachers in the course of on-the-job contacts. Male elementary teachers are likely to be in frequent contact with their administrators since, as a group, they are upwardly mobile.<sup>1</sup>

The total proportion of teachers in this sample who understood at least 75 percent of the conceptual component of accountability and assessment communications was 71.27 percent. As a group, the teachers in this sample may be said to understand the implications of the control of information in relation to accountability and assessment communications. As a group, the teachers in this sample may be said to have a better understanding of the implications of control of information than an understanding of the factual components of accountability and assessment communications.

There is apparently unequal access to the means of literal understanding of the communications of

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<sup>1</sup>James Hill Parker, "The Alienation of Teachers: A Reference Group Theory Approach," Contemporary Education, 41:276-79, May '70, p. 278.

accountability and assessment with men having greater access than women as shown by their higher proportion of group understanding. This differential on the variable, Sex of Teacher, disappears when conceptual understanding is considered. Access to conceptual understanding is more openly available to men and women teachers as evidenced by the similarity of the proportion of group understanding. There is a significant difference among levels of one independent variable and that variable is, Grade Level Taught. The levels of the independent variable which are significantly different from each other are: Primary Teachers and Upper Grade Teachers. 71.44 percent of Primary Teachers understood the conceptual component of accountability and assessment communications. 56.25 percent of Upper Grade Teachers understood. In this study, Upper Grade Teachers were defined as teachers of grades 6, 7, and 8. Sixty-three of the 72 Upper Grade Teachers were teachers of grade 6. In a K-6 school the 6th grade teacher may have the least involvement with accountability and assessment since the assessment test takes place in grade 7 which is in the junior high school and out of the K-6 elementary school. The primary teachers (defined as teachers of grades K-2) may have the greatest concern with accountability and assessment since their pupils will be evaluated in grade 4. The intermediate teachers (defined as teachers of grades 3-5) straddle the

assessment test which takes place in October of the 4th grade year. The 3rd grade teachers may have the greatest concern with the outcome of the test for the intermediate group. The 4th grade teachers and the 5th grade teachers are in the same relative position as the 6th grade teachers. Teachers in grades K-3 should be the most threatened by accountability and assessment and teachers of grades 4-6 should be the least threatened in schools with a K-6 organization. The lower grade teachers should be more sensitive to the patterns of information control than the upper grade teachers. The group responses on the independent variable, Grade Level Taught, would appear to suggest this pattern.

The total proportion of teachers in this sample who understood the communications of accountability and assessment was 61.78 percent. As a group, the teachers in this sample may be said to have understood the communications of accountability and assessment.

Once again, the independent variable, Grade Level Taught, contained levels significantly different. Primary teachers understood at the highest level (67.67%), Intermediate teachers understood at an intermediate level (62.20%), and Upper grade teachers understood the least (49.28%).<sup>1</sup>

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<sup>1</sup>49.28 percent is deemed to satisfy the criterion of 50 percent of a group of teachers understanding at least 75 percent of the communications.

Within the independent variable, Size of School District, Medium sized districts showed the smallest proportion of teachers who understood accountability and assessment communications (53.85%). This pattern was found in Subscales I-A and I-B but without statistical differences at the .05 level. The proportion of teachers from Small sized districts who understood was 64.67 percent and the proportion of teachers from Large sized districts who understood was 70.42 percent. One of the pre-tests took place during a summer session. It was found that the group of summer session teachers were highly informed about accountability and assessment communications, but teachers from medium sized districts were under-represented in the sample.<sup>1</sup> The relatively poorly informed teachers from Medium sized districts as reported in this work and their under-representation at summer session may be related events.

It is concluded that the teachers in this sample of 369 K-8 Michigan teachers can and do understand the communications of accountability and assessment since they met the criterion of at least 50 percent of the group understanding at least 75 percent of the communications.

Scale II, made up of Subscales II-A and II-B, was designed to measure Barnard's second principle:

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<sup>1</sup>See pp. 109-110 above.

At the time of decision it is believed the communication is not inconsistent with the purposes of the organization as the teacher understands it.<sup>1</sup>

The data was gathered from a questionnaire with the scales in a five-point, Likert-type, format ranging from "5" (Strongly Agree) to "1" (Strongly Disagree).

Scale II-A was designed to measure the satisfactions component of the purposes of the organization as they relate to accountability and assessment communications.

The mean subscale score for the entire sample was 2.72 with the .95 confidence interval ranging from 2.37 to 3.07. This placed the sample as a whole in the neutral but favorably disposed category. There were significant differences among the levels of the independent variable, Teaching Experience, with Less Experienced Teachers being different from Highly Experienced Teachers. Less Experienced Teachers had a stronger feeling that accountability and assessment communications were contributing to their job satisfactions than did Highly Experienced Teachers. Less Experienced Teachers, in this sample, scored 2.96 on the five-point Likert scale. The .95 confidence interval ranged from 2.75 to 3.17. Highly Experienced Teachers in this sample scored 2.54 on the five-point Likert scale with the .95 confidence interval ranging from 2.39 to 2.69.

Less Experienced Teachers, like the sample as a whole, regarded the satisfaction component as within the

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<sup>1</sup>See Barnard, Functions of the Executive, p. 165.

neutral but positively disposed zone. Highly Experienced Teachers regarded the satisfaction component as falling entirely within the zone where orders are unacceptable.

The Highly Experienced Teachers are predominantly the older female teachers.<sup>1</sup> Since older female teachers in the elementary school traditionally tend to experience both decisional saturation and the highest level of satisfaction they would be the group with the most to lose by acceptance of accountability and assessment communications since this adoption would shift the locus of the control of information away from them.<sup>2</sup>

In summary, the sample as a whole regarded accountability and assessment communications as contributing negatively to their satisfactions. Highly Experienced Teachers are significantly different from Less Experienced Teachers. Highly Experienced Teachers in the sample did not have the feeling that accountability and assessment communications contribute to their satisfactions. Less Experienced Teachers have a higher regard for accountability and assessment communications as they contribute to their satisfactions.

Subscale II-B was designed to measure the dissatisfactions component of the purposes of the organization as they relate to accountability and assessment communications.

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<sup>1</sup>See p. 119 above.

<sup>2</sup>See p. 75 above.

The mean scale value score for this sample of K-8 teachers was 1.90 with the .95 confidence interval ranging from 1.64 to 2.10. There were no levels significantly different among the independent variables. The sample can be regarded as feeling that accountability and assessment communications contribute to their job dissatisfactions.

Scale II was designed to measure Barnard's second principle. The mean scale value for the sample as a whole was 2.31 with the .95 confidence interval ranging from 1.78 to 2.83. The only independent variable to show significant differences was Teaching Experience with Less Experienced Teachers less negatively inclined than Highly Experienced Teachers. The mean scale value score for Less Experienced Teachers was 2.48 while the mean scale value score for Highly Experienced Teachers was 2.19.

It is concluded that teachers in this sample believe the communications of accountability and assessment are inconsistent with the purposes of the organization as they understand it.

Scale III was designed to measure Barnard's third principle:

At the time of decision the teacher believes the communication is compatible with his personal interest as a whole.<sup>1</sup>

The mean scale value for the sample as a whole was 2.60 with the .95 confidence interval ranging from 2.53 to

2/67. There were significant differences among levels of the independent variables: Sex of Teacher, Grade Level Taught, and Years of Teaching Experience. No level of an independent variable extended to the favorable side of the Likert scale. Male teachers were less negatively inclined than Female teachers. Upper grade teachers were less negative than Lower grade teachers, and Less Experienced Teachers were less negative than Highly Experienced Teachers. If, as Belasco and Alutto maintain, older elementary, female teachers, tend to experience both decisional saturation and the highest levels of satisfaction, they would have the most to lose by the adoption of accountability and assessment communications, since the locus of the control of information would become more distant from them. This would account for the finding in this study that female teachers, primary teachers, and highly experienced teachers are those with the most negative attitudes on Scale III.

Since no mean scale value or confidence interval on Scale III reaches into the positive side of the Likert scale it is concluded that the teachers in this sample believed the communications of accountability and assessment not compatible with their personal interest as a whole.

Scale IV was designed to measure Barnard's fourth principle:

The teacher is able, mentally and physically, to comply.<sup>1</sup>

The mean scale value for the K-8 teachers in this sample as a whole was 1.90 with the .95 confidence interval ranging from 1.72 to 2.68. There were no significant differences among the levels of the independent variables.

For this sample of K-8 teachers it is concluded that the teachers feel they cannot comply, mentally and physically, with the communications of accountability and assessment.

According to Barnard communications are accepted as authoritative when four conditions obtain at once. These four conditions are: (1) the teacher can and does understand the communication, (2) at the time of his decision the teacher believes the communication not inconsistent with the purpose of the organization, (3) at the time of decision the teacher believes the communication compatible with his personal interest as a whole, and (4) he is able, mentally and physically, to comply with the communication.

The K-8 teachers in this sample: (1) can and do understand the communications of accountability and assessment, (2) believe it inconsistent with the purpose

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<sup>1</sup>See Barnard, Functions of the Executive, p. 165.

of the organization, (3) do not believe it compatible with their personal interest as a whole, and (4) do not feel able, mentally and physically, to comply.

It is concluded the communications of accountability and assessment originating at the state department of education are not authoritative as the K-8 teachers in the state perceive these communications when analyzed in terms of Barnard's four criteria of authoritativeness of organizational communications.

For all intents and purposes there is no zone of indifference where the K-8 teachers, as a group, will carry out these communications as a matter of course. The communications of accountability and assessment, as far as the K-8 teachers are concerned, lie in the zone where the orders are clearly unacceptable and will not be carried out.

The state department of education is striving for a position of leadership but it has gone beyond what teachers are ready to accept as appropriate and correct.

The authority of the state department of education in reference to accountability and assessment is the authority of position. It is the authority that resides in offices rather than persons. The authority that resides in offices is not in its own right final or absolute. The authority of position can be lost "if the communication

shows an absence of adjustment to the actual situation  
 . . . ."<sup>1</sup>

There is an unintended effect in this situation and that is the vastly negative attitudes of the K-8 teachers. The ultimate threat to the accountability and assessment program with reference to the K-8 teachers is the withdrawal of active support. The continuance of the accountability and assessment program depends on the participation of the teachers, yet this participation would appear to be unlikely. The withdrawal of support by the K-8 teachers from the accountability and assessment program is unlikely to be sudden and dramatic. As Presthus has observed, "explicit rejection becomes a crude and unlikely alternative."<sup>2</sup> Rejection by the K-8 teachers is likely to be in the form of minimal compliance and by pressure from the organized teacher groups. As the state department of education is forced to react to the resistance of the teachers it may well re-emphasize the traditional role of state departments of education, that of providing service and statistics. Accountability and assessment communications may well assume the guise of a service to the teacher to help him help his pupils. The K-8 teachers view accountability and assessment as so far

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<sup>1</sup>See Barnard, Functions of the Executive, p. 173.

<sup>2</sup>See Presthus, The Organizational Society, p. 137.

from their interests that changing the attitudes is a formidable task.

Unless benignly neglected the communications of accountability and assessment will remain an irritant in the relations of the state department of education with the K-8 teachers. At present the K-8 teachers perceive little advantage in participating in the accountability and assessment program, and they will, at the least, not actively work to support it. If Barnard's theory of authority is accepted, the program in its present form is a failure.

#### Implications for Future Research

Four elementary school principals have completed the final version of the questionnaire. Two principals returned the mail-back questionnaire (these were non-usable responses), and two principals filled out the questionnaire during the course of reliability studies. The response patterns of these elementary school principals appears to be quite different from the K-8 teachers in this sample. A future research may well profitably study the attitudes and understanding of school administrators in reference to accountability and assessment communications. A comparison with the responses of the K-8 teachers in this sample is recommended.

A future research using the questionnaire described here to measure the attitudes and understanding of

## APPENDICES

## APPENDIX A

### FIRST SCALES

Appendix A contains a copy of the cover letter and the 83 statement scale used in the pre-test which took place in May and June of 1974.

Harvey Bleecher  
1645-A Spartan Village  
East Lansing, Michigan 48823  
517-353-7922

May 13, 1974

Dear Teacher,

As you know, the problems of accountability and assessment are of great concern to us as Michigan teachers. In the envelope attached are attitude scales I plan to use as part of my dissertation at MSU. I would like to determine how Michigan elementary teachers feel about accountability and assessment. As far as I know, no one has asked us.

Since these are pilot scales they are longer than the final scales will be. I am asking a select group of about 125 Michigan teachers to help by responding to these pilot attitude scales. It should take about twenty minutes.

As a small token of my appreciation there is a pen enclosed which I would like you to keep.

When you complete the scales, place them in the pre-addressed envelope and mail them back to me. Since the pilot study includes so few persons your response is very important.

If you would like to have the results of this study write to me at the above address. Do not include a note in the supplied envelope since that will destroy confidentiality.

Thank you very much for your help.

Sincerely yours,

Harvey Bleecher

In order to statistically analyze the responses people make on these attitude scales I need to ask the following questions:

1. Are you:

a man \_\_\_\_\_ a woman \_\_\_\_\_

2. What grade do you teach?

K \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_ 6 \_\_\_\_\_

3. How many years have you been teaching?

\_\_\_\_\_ years.

4. How many principals and assistant principals are there in your school?

0 \_\_\_\_\_

2 \_\_\_\_\_

1 \_\_\_\_\_

3 \_\_\_\_\_

5. How many pupils are there in your school district (K-12)? (K-12)?

0-2,499 \_\_\_\_\_

10,000-14,999 \_\_\_\_\_

2,500-4,999 \_\_\_\_\_

15,000-19,999 \_\_\_\_\_

5,000-9,999 \_\_\_\_\_

20,000-49,000 \_\_\_\_\_

6. How would you describe your school district?

Urban \_\_\_\_\_

Suburban \_\_\_\_\_

Rural \_\_\_\_\_

Scale 1-A. Please circle either "Yes" or "No" in response to the following statements. Be certain not to omit any.

- |                                                                                                                                      |     |    |
|--------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 1. One of the major purposes of the Michigan Educational-Assessment Test is to provide information for decisionmakers.               | Yes | No |
| 2. Behavioral objectives specify learning outcomes in observable ways.                                                               | Yes | No |
| 3. The common goals of Michigan Education have yet to be specified by the State Board of Education.                                  | Yes | No |
| 4. The Michigan Educational Assessment Test is one phase of a six-step process adopted by the State Board of Education.              | Yes | No |
| 5. A criterion referenced test is when a pupil is compared to a large group of other pupils.                                         | Yes | No |
| 6. The state legislature opposes the concept of accountability/assessment.                                                           | Yes | No |
| 7. There is only one Michigan Assessment Test given at the K-6 level at this time.                                                   | Yes | No |
| 8. The Michigan Education Association favors the Michigan Educational Assessment Test.                                               | Yes | No |
| 9. Teacher characteristics are reported as part of the Michigan Educational Assessment Test results.                                 | Yes | No |
| 10. School district results on the Michigan Educational Assessment Test are held in confidence by the State Department of Education. | Yes | No |

Scale 1-B. Please circle either "Yes" or "No" in response to the following statements. Be certain not to omit any. You are doing just fine.

- |                                                                                                                                      |     |    |
|--------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 1. Accountability/assessment is a system the state could use to control teachers' decisions about pupils.                            | Yes | No |
| 2. If the state has information about how children perform in class, it could control what teachers teach.                           | Yes | No |
| 3. Accountability/assessment coming from the state level could reduce the professional authority of teachers.                        | Yes | No |
| 4. The teachers' professional authority is increased when people who are not teachers tell her how to teach.                         | Yes | No |
| 5. Teachers' professional judgments are enhanced when learning objectives are specified by state education officials.                | Yes | No |
| 6. To be in charge of the classroom the teacher should decide what is best for each pupil.                                           | Yes | No |
| 7. Accountability/assessment communications from the state will increase teachers' ability to determine what is best for each pupil. | Yes | No |
| 8. Public reporting of accountability/assessment information could free teachers from taxpayer control.                              | Yes | No |
| 9. Being professional means making decisions about pupils and then taking responsibility for those decisions.                        | Yes | No |
| 10. To be professional the teacher needs to follow the orders of decision-makers.                                                    | Yes | No |

Scale 2. Please indicate your agreement or disagreement with the following statements by placing a checkmark in the appropriate box.

If you strongly agree with a statement your checkmark would go in column "St A."

If you agree with a statement your checkmark would go in column "Agr."

If you are uncertain your checkmark would go in column "Unc."

If you disagree with a statement your checkmark would go in column "Dis."

If you strongly disagree with a statement your checkmark would go in column "St D."

Your thoughts are appreciated.

|                                                                                                                         | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|-------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 1. Accountability/assessment will be used as a tool to prove teachers are not performing their jobs.                    |           |          |          |          |           |
| 2. Teachers are not accountable to the state but rather to their pupils.                                                |           |          |          |          |           |
| 3. Accountability/assessment programs are leading us to the imposition of a state curriculum on local school districts. |           |          |          |          |           |
| 4. Teachers have little control over the factors that might render accountability/assessment feasible.                  |           |          |          |          |           |

|                                                                                                                                                                              | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 5. The primary purpose of accountability/assessment is identification of inequities in pupil performance.                                                                    |           |          |          |          |           |
| 6. If teachers consistently meet, or exceed, accountability/assessment norms they should be rewarded.                                                                        |           |          |          |          |           |
| 7. It is becoming evident that accountability/assessment may provide some of the controls necessary to insure that teachers do not deviate from state-prescribed procedures. |           |          |          |          |           |
| 8. Teachers should regularly report their classroom activities to their administrators.                                                                                      |           |          |          |          |           |
| 9. Providing the state with accountability/assessment information could lead to a state school system.                                                                       |           |          |          |          |           |
| 10. Teachers should have a voice in the determination of policies concerning accountability/assessment.                                                                      |           |          |          |          |           |
| 11. Accountability/assessment is a threat to teacher professionalism.                                                                                                        |           |          |          |          |           |
| 12. Teachers fear accountability/assessment as a punitive, union-busting tool, threatening them and the way they teach.                                                      |           |          |          |          |           |

|                                                                                                                                                                  | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 13. Teachers, as a group, desire true professional status.                                                                                                       |           |          |          |          |           |
| 14. Teachers should have the right to select their pupils.                                                                                                       |           |          |          |          |           |
| 15. Teachers have the obligation to accept greater responsibility for the regulation of teaching.                                                                |           |          |          |          |           |
| 16. If teachers consistently fail to move their pupils towards accountability/assessment norms, they should be subjected to penalties.                           |           |          |          |          |           |
| 17. Administrators, not teachers, should examine educational objectives in relation to resources and develop alternative choices for achieving those objectives. |           |          |          |          |           |
| 18. Until the teaching profession regulates itself its members are not truly professional.                                                                       |           |          |          |          |           |
| 19. Instruction that does not come up to predicted standards, disproves the professional skill of the individual teacher.                                        |           |          |          |          |           |
| 20. Teachers cannot argue they are professional because they have no proof of results.                                                                           |           |          |          |          |           |

|                                                                                                                        | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 21. Independent, publicly reported, outside review of promised results of a school promotes competence in that school. |           |          |          |          |           |
| 22. Assessment/accountability will indicate those areas in which objective educational needs have not been met.        |           |          |          |          |           |
| 23. When we talk about accountability/assessment we are talking about which teachers should be hired or fired.         |           |          |          |          |           |

Scale 3-A. Please indicate your agreement or disagreement with the following statements by placing a checkmark in the appropriate box.

If you strongly agree with a statement your checkmark would go in column "St A."

If you agree with a statement your checkmark would go in column "Agr."

If you are uncertain your checkmark would go in column "Unc."

If you disagree with a statement your checkmark would go in column "Dis."

If you strongly disagree with a statement your checkmark would go in column "St D."

I appreciate the time you are putting in on this.

|                                                                                                                        | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 1. The adoption of accountability/assessment will mean greater trust in teachers by the taxpayers.                     |           |          |          |          |           |
| 2. A classroom program based on accountability/assessment could mean greater professional recognition for the teacher. |           |          |          |          |           |
| 3. Accountability/assessment will help teachers in their efforts to see pupils mature in their reasoning.              |           |          |          |          |           |
| 4. Accountability/assessment will help teachers in their efforts to see the expansion of a child's abilities.          |           |          |          |          |           |

|                                                                                                                             | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|-----------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 5. Teachers should participate in decisions pertaining to their job conditions as they relate to accountability/assessment. |           |          |          |          |           |
| 6. The teacher should determine just which information should be released to parents.                                       |           |          |          |          |           |
| 7. Adoption of accountability/assessment programs will not contribute to my job satisfaction.                               |           |          |          |          |           |
| 8. Accountability/assessment tends to limit the opportunities open to children.                                             |           |          |          |          |           |
| 9. Teachers are the best judges of the desirability of adopting accountability/assessment programs.                         |           |          |          |          |           |
| 10. Teachers should be promoted if their pupils do well on accountability/assessment measures.                              |           |          |          |          |           |

Scale 3-B. Please indicate your agreement or disagreement with the following statements by placing a checkmark in the appropriate box.

If you strongly agree with a statement your checkmark would go in column "St A."

If you agree with a statement your checkmark would go in column "Agr."

If you are uncertain your checkmark would go in column "Unc."

If you disagree with a statement your checkmark would go in column "Dis."

If you strongly disagree with a statement your checkmark would go in column "St D."

Don't give up now, you are nearing the end.

|                                                                                                    | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|----------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 1. Accountability/assessment means that teachers will be looked upon as hired hands.               |           |          |          |          |           |
| 2. Accountability/assessment will mean an increase in the supervision of teachers' work.           |           |          |          |          |           |
| 3. A teachers' effectiveness can be measured in terms of agreed upon goals and objectives.         |           |          |          |          |           |
| 4. Each child should accomplish one specified increment of learning for each period of attendance. |           |          |          |          |           |

|                                                                                                                    | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|--------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 5. A teacher's salary should be related to performance under accountability/assessment programs.                   |           |          |          |          |           |
| 6. Teachers regard pupils as products.                                                                             |           |          |          |          |           |
| 7. Pupil progress should be subject to outside review.                                                             |           |          |          |          |           |
| 8. Administrators have the right to determine if accountability/assessment will be adopted in the school district. |           |          |          |          |           |
| 9. The taxpayers should determine if accountability/assessment programs will be adopted in the school district.    |           |          |          |          |           |
| 10. The taxpayers should judge the effectiveness of teachers.                                                      |           |          |          |          |           |

Scale 4. Please indicate your agreement or disagreement with the following statements by placing a checkmark in the appropriate box.

If you strongly agree with a statement your checkmark would go in column "St A."

If you agree with a statement your checkmark would go in column "Agr."

If you are uncertain your checkmark would go in column "Unc."

If you disagree with a statement your checkmark would go in column "Dis."

If you strongly disagree with a statement your checkmark would go in column "St D."

You made it! This is the last one.

|                                                                                                                      | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|----------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 1. Without additional help there is no way the teacher can carry out accountability/assessment projects with pupils. |           |          |          |          |           |
| 2. Individualization of instruction is an impossible ideal.                                                          |           |          |          |          |           |
| 3. It is possible for each pupil to be on grade level.                                                               |           |          |          |          |           |
| 4. It is possible for each child to make an increment of progress for each period of attendance.                     |           |          |          |          |           |
| 5. It is possible to measure how much a pupil has learned in a teacher's class.                                      |           |          |          |          |           |

|                                                                                                                                    | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 6. Teachers can see to it that each pupil learns to perform at grade level.                                                        |           |          |          |          |           |
| 7. Teachers have the knowledge to insure that every child will learn in her class.                                                 |           |          |          |          |           |
| 8. There is too little known about the learning process for the teacher to make guarantees.                                        |           |          |          |          |           |
| 9. Teachers just don't know enough about accountability/assessment to do anything about it.                                        |           |          |          |          |           |
| 10. There are too many mental and physical factors affecting what pupils do, for teachers to be accountable for what pupils learn. |           |          |          |          |           |
| 11. It is possible for every pupil to show progress on annual educational assessment tests.                                        |           |          |          |          |           |
| 12. Enough is known of the learning process so there can be no valid reason for a pupil not learning.                              |           |          |          |          |           |
| 13. It is not physically possible for every child in my class to show learning progress.                                           |           |          |          |          |           |
| 14. This whole business of accountability/assessment is just too difficult for us classroom teachers to understand.                |           |          |          |          |           |

|                                                                                                                 | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|-----------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 15. There is no physical reason why teachers cannot carry out accountability/assessment projects in class.      |           |          |          |          |           |
| 16. Teaching by behavioral objectives will make teaching too complicated for me.                                |           |          |          |          |           |
| 17. Teachers work too hard now to be burdened with additional chores like accountability/assessment projects.   |           |          |          |          |           |
| 18. Enough is known of the learning process so that every child should show progress each year.                 |           |          |          |          |           |
| 19. As a teacher, I have the skills needed to implement teaching techniques based on accountability/assessment. |           |          |          |          |           |
| 20. It is too much for anyone to expect a teacher to change her teaching methods.                               |           |          |          |          |           |

## APPENDIX B

### MAIN SURVEY

Appendix B contains a copy of the cover letter, two follow-up letters, and the 32 statement scales used in the main survey which took place in September and October of 1974.

September 16, 1974

Dear Colleague:

As you know, the issues of accountability and assessment have been of concern to Michigan teachers for the past several years. Part of my doctoral dissertation is to determine how K-8 teachers feel about accountability and assessment.

You have been chosen randomly from the master-list of teachers in the state to respond to a short questionnaire about accountability and assessment. Only one out of every eighty K-8 teachers has been selected so you can see how important your response is. Responding should take just a few minutes. When you finish, please place your completed questionnaire in the envelope supplied. I hope you will be able to mail it back within a day or so.

This is a good chance to express your personal feelings about accountability and assessment since results will be made known to the Michigan Department of Education, the Michigan School Boards Association, and the Michigan Education Association. Of course, the confidential nature of your reply is strictly guaranteed.

If you would like a copy of the results for your own use enclose your name and address on a slip of paper.

I appreciate your help.

Sincerely yours,

Harvey Bleecher

September 23, 1974

Dear Colleague:

If you have already mailed back the questionnaire about accountability and assessment I certainly thank you. Accountability and assessment are important issues for Michigan teachers and will probably continue to be concerns in the future. The results of this survey will be presented to the Michigan Department of Education, the Michigan Education Association, and the Michigan School Boards Association.

If you have not yet had the chance to return your questionnaire I hope you will be able to take a few minutes to complete it and mail it back within the next day or so.

I am looking forward to hearing from you so that your opinions can be part of the results. Your response is strictly confidential.

Your help is appreciated in this survey which is part of my doctoral dissertation.

Sincerely yours,

Harvey Bleecher

September 30, 1974

Dear Colleague:

If you have returned your questionnaire about accountability and assessment I truly thank you.

If you have not returned the questionnaire I am enclosing a fresh copy which I hope you can complete and mail back within a day or so.

The more questionnaires returned the more accurate is the description of Michigan K-8 teachers' feelings about these important issues.

If you would like a copy of the results just enclose your name and address on a slip of paper.

Your time and effort are appreciated.

Sincerely yours,

Harvey Bleecher

In order to analyze responses I need to ask:

1. Are you:

a man \_\_\_\_\_ a woman \_\_\_\_\_

2. What grade do you teach?

K \_\_\_\_\_ 5 \_\_\_\_\_

1 \_\_\_\_\_ 6 \_\_\_\_\_

2 \_\_\_\_\_ 7 \_\_\_\_\_

3 \_\_\_\_\_ 8 \_\_\_\_\_

4 \_\_\_\_\_

3. How many years have you been teaching?

\_\_\_\_\_ years.

4. How many K-12 pupils are there in your school district?

0-2,499 \_\_\_\_\_

10,000-14,999 \_\_\_\_\_

2,500-4,999 \_\_\_\_\_

15,000-19,999 \_\_\_\_\_

5,000-9,999 \_\_\_\_\_

20,000-49,999 \_\_\_\_\_

50,000 or more \_\_\_\_\_

Note to future users of this instrument:

Please be reminded that statements 1-8 must be reversed for scoring.

The attempt in the following twenty-four statements is to determine how Michigan teachers feel about accountability/assessment.

If you strongly agree with a statement place a checkmark in column "St A."

If you agree with a statement place a checkmark in column "Agr."

If you are uncertain place a checkmark in column "Unc."

If you disagree with a statement place a checkmark in column "Dis."

If you strongly disagree with a statement place a checkmark in column "St D."

1. Accountability/assessment is a threat to teacher professionalism.
2. Providing the state with accountability/assessment information could lead to a state controlled school system.
3. Teachers fear accountability/assessment as a punishing, union-busting tool, threatening them and the way they teach.

| St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|-----------|----------|----------|----------|-----------|
|           |          |          |          |           |
|           |          |          |          |           |
|           |          |          |          |           |

Comments:

|                                                                                                                                                  | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 4. Accountability/assessment may provide some of the controls necessary to insure that teachers do not deviate from state-prescribed procedures. |           |          |          |          |           |
| 5. Accountability/assessment procedures are leading us to the imposition of a state curriculum on local school districts.                        |           |          |          |          |           |
| 6. Teachers have little control over the things that might make accountability/assessment practical.                                             |           |          |          |          |           |
| 7. When we talk about accountability/assessment we are talking about which teachers should be hired or fired.                                    |           |          |          |          |           |
| 8. Accountability/assessment will be used as a tool to prove teachers are not performing their jobs.                                             |           |          |          |          |           |
| 9. Accountability/assessment will help teachers in their efforts to see pupils mature in their reasoning.                                        |           |          |          |          |           |
| 10. Accountability/assessment will help teachers in their efforts to see the expansion of a child's abilities.                                   |           |          |          |          |           |

Comments:

|                                                                                                                         | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|-------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 11. A classroom program based on accountability/assessment could mean greater professional recognition for the teacher. |           |          |          |          |           |
| 12. The adoption of accountability/assessment will mean greater trust in teachers by the taxpayers.                     |           |          |          |          |           |
| 13. The taxpayers should determine if accountability/assessment programs will be adopted in the school district.        |           |          |          |          |           |
| 14. The taxpayers should judge the effectiveness of teachers.                                                           |           |          |          |          |           |
| 15. A teacher's salary should be related to performance under accountability/assessment programs.                       |           |          |          |          |           |
| 16. Each pupil should accomplish one specified unit of learning for each period of attendance.                          |           |          |          |          |           |
| 17. Teachers have the knowledge to insure that every child will learn in his, or her, class.                            |           |          |          |          |           |
| 18. It is possible for every pupil to show progress on annual educational assessment tests.                             |           |          |          |          |           |

Comments:

|                                                                                                          | St A<br>5 | Agr<br>4 | Unc<br>3 | Dis<br>2 | St D<br>1 |
|----------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
| 19. It is possible for each pupil to make a unit of progress for each period of attendance.              |           |          |          |          |           |
| 20. It is possible to measure how much a pupil has learned in a teacher's class.                         |           |          |          |          |           |
| 21. Teachers can see to it that each child learns to perform at grade level.                             |           |          |          |          |           |
| 22. It is possible for each child to be on grade level each year.                                        |           |          |          |          |           |
| 23. Enough is known of the learning process so there can be no valid reason for a pupil not learning.    |           |          |          |          |           |
| 24. Enough is known of the learning process so that every pupil should show measurable growth each year. |           |          |          |          |           |

You have completed this section of the scale. The next section attempts to determine general knowledge of accountability by means of eight, "Yes"- "No" statements.

Comments:

Please underline either "Yes" or "No" in response to the following statements. Be certain not to skip any.

- |                                                                                                                 |     |    |
|-----------------------------------------------------------------------------------------------------------------|-----|----|
| 25. The Michigan Educational Assessment Test is administered to eligible pupils in grades 4 and 7 once a year.  | Yes | No |
| 26. A criterion referenced test is when a pupil is compared to a group of other pupils.                         | Yes | No |
| 27. The common goals of Michigan education have yet to be specified by the State Board of Education.            | Yes | No |
| 28. Behavioral objectives are a part of the Michigan educational accountability program.                        | Yes | No |
| 29. Accountability/assessment could be used to control teachers' decisions about pupils.                        | Yes | No |
| 30. If the state has information about how pupils perform in class, it could control what teachers teach.       | Yes | No |
| 31. Accountability/assessment, coming from the state level could reduce the professional authority of teachers. | Yes | No |
| 32. To be professional the teacher needs to follow the orders of decision-makers.                               | Yes | No |

You have completed the scale. Thanks for your help.

Comments:

## APPENDIX C

### ADDITIONAL TABLES

Appendix C contains additional tables in reference to findings of the main survey. Here will be found tables listing percentages of correct responses on Yes-No scales, means and standard deviations for Likert statements, frequencies of rates of teacher understanding and not understanding, and mean scores with standard deviations for each Likert statement by independent variable.

Table A.1.--Percentages of Correct Yes-No Responses by Subscale.

| Subscale I-A (Literal Understanding)                        |           |       |
|-------------------------------------------------------------|-----------|-------|
| Statement                                                   | % Correct | N=369 |
| 25. The Michigan Educational Assessment Test . . . .        | 85.63     |       |
| 26. A criterion referenced test . . . .                     | 53.11     |       |
| 27. The common goals . . . .                                | 54.74     |       |
| 28. Behavioral objectives . . . .                           | 78.32     |       |
| Subscale II-A (Conceptual Understanding)                    |           |       |
| Statement                                                   | % Correct | N=369 |
| 29. Accountability/assessment could be used . . . .         | 69.10     |       |
| 30. If the state has information . . . .                    | 72.08     |       |
| 31. Accountability/assessment coming from the state . . . . | 81.03     |       |
| 32. To be professional . . . .                              | 81.03     |       |

Table A.2.--Means and Standard Deviations for Individual Statements on Likert Scales and Subscales.

| Subscale II-A (Purpose of Organization; Satisfaction)    |           |      |       |
|----------------------------------------------------------|-----------|------|-------|
| Statement                                                | $\bar{x}$ | s    | N=369 |
| 9. . . . mature in their reasoning                       | 2.63      | 1.07 |       |
| 10. . . . expansion of a child's abilities               | 2.78      | 1.11 |       |
| 11. A classroom program based . . . .                    | 2.76      | 1.07 |       |
| 12. The adoption of accountability                       | 2.70      | 1.04 |       |
| Subscale II-B (Purpose of Organization; Dissatisfaction) |           |      |       |
| Statement                                                | $\bar{x}$ | s    | N=369 |
| 13. Taxpayers should determine . . . .                   | 1.93      | 0.99 |       |
| 14. Taxpayers should judge . . . .                       | 1.60      | 0.81 |       |
| 15. A teacher's salary . . . .                           | 1.75      | 0.94 |       |
| 16. Each pupil should . . . .                            | 2.306     | 1.33 |       |
| Scale III (Compatible with Personal Interest)            |           |      |       |
| Statement                                                | $\bar{x}$ | s    | N=369 |
| 1. . . . threat to teacher professionalism               | 2.87      | 1.20 |       |
| 2. Providing the state . . . .                           | 2.24      | 0.98 |       |
| 3. Teachers fear . . . .                                 | 2.55      | 1.10 |       |

Table A.2.--Continued.

| Scale III (Compatible with Personal Interest) |           |       |       |
|-----------------------------------------------|-----------|-------|-------|
| Statement                                     | $\bar{x}$ | s     | N=369 |
| 4. . . . state prescribed procedures          | 2.66      | 1.047 |       |
| 5. . . . on local school districts            | 2.24      | 0.96  |       |
| 6. Teachers have little . . . .               | 2.19      | 1.11  |       |
| 7. When we talk . . . .                       | 3.38      | 1.07  |       |
| 8. . . . not performing their jobs            | 2.68      | 1.08  |       |
| Scale IV (Mentally and Physically Able)       |           |       |       |
| Statement                                     | $\bar{x}$ | s     | N=369 |
| 17. Teachers have the knowledge . . . .       | 2.69      | 1.18  |       |
| 18. . . . every pupil to show progress        | 2.46      | 1.08  |       |
| 19. . . . each pupil to show a unit . . . .   | 2.44      | 1.17  |       |
| 20. . . . to measure how much . . . .         | 2.53      | 1.11  |       |
| 21. Teachers can see to it . . . .            | 1.59      | 0.72  |       |
| 22. . . . each child to be on grade level     | 1.40      | 0.59  |       |
| 23. . . . for a pupil not learning            | 1.74      | 0.87  |       |

Table A.2.--Continued.

| Scale IV (Mentally and Physically Able)  |           |      |       |
|------------------------------------------|-----------|------|-------|
| Statement                                | $\bar{x}$ | s    | N=369 |
| 24. . . . measurable growth<br>each year | 2.75      | 1.17 |       |

Table A.3.--Frequencies of Teachers Understanding and Not Understanding the Factual Component of Accountability and Assessment Communications.

| Subscale I-A                    |         |              |       |
|---------------------------------|---------|--------------|-------|
| Variable 1: Sex of Teacher      |         | N=369        |       |
|                                 | Men     | Women        |       |
| Not Understanding               | 24      | 124          |       |
| Understanding                   | 56      | 165          |       |
| Variable 2: Grade Level Taught  |         | N=366        |       |
|                                 | Primary | Intermediate | Upper |
| Not Understanding               | 49      | 69           | 29    |
| Understanding                   | 84      | 95           | 40    |
| Variable 3: Teaching Experience |         | N=363        |       |
|                                 | LET     | MET          | HET   |
| Not Understanding               | 21      | 64           | 61    |
| Understanding                   | 34      | 108          | 75    |
| Variable 4: District Size       |         | N=368        |       |
|                                 | Small   | Medium       | Large |
| Not Understanding               | 62      | 58           | 27    |
| Understanding                   | 105     | 72           | 44    |

NOTE: N varies because some respondents did not include all information on returned questionnaires.

Table A.4.--Frequencies of Teachers Understanding and Not Understanding the Conceptual Component of Accountability and Assessment Communications.

| Subscale I-B                    |         |              |       |
|---------------------------------|---------|--------------|-------|
| Variable 1: Sex of Teacher      |         | N=369        |       |
|                                 | Men     | Women        |       |
| Not Understanding               | 27      | 19           |       |
| Understanding                   | 53      | 210          |       |
| Variable 2: Grade Level Taught  |         | N=366        |       |
|                                 | Primary | Intermediate | Upper |
| Not Understanding               | 30      | 46           | 30    |
| Understanding                   | 103     | 118          | 39    |
| Variable 3: Teaching Experience |         | N=364        |       |
|                                 | LET     | MET          | HET   |
| Not Understanding               | 20      | 45           | 39    |
| Understanding                   | 36      | 127          | 97    |
| Variable 4: District Size       |         | N=368        |       |
|                                 | Small   | Medium       | Large |
| Not Understanding               | 49      | 43           | 14    |
| Understanding                   | 118     | 87           | 57    |

Table A.5.--Frequencies of Teachers Understanding and Not Understanding Accountability and Assessment Communications.

| Scale I                        |         |              |       |
|--------------------------------|---------|--------------|-------|
| Variable 1: Sex of Teacher     |         | N=369        |       |
|                                | Men     | Women        |       |
| Not Understanding              | 28      | 113          |       |
| Understanding                  | 52      | 176          |       |
| Variable 2: Grade Level Taught |         | N=366        |       |
|                                | Primary | Intermediate | Upper |
| Not Understanding              | 43      | 62           | 35    |
| Understanding                  | 90      | 102          | 34    |
| Variable 3: District Size      |         | N=364        |       |
|                                | LET     | MET          | HET   |
| Not Understanding              | 24      | 56           | 58    |
| Understanding                  | 32      | 116          | 78    |
| Variable 4: District Size      |         | N=368        |       |
|                                | Small   | Medium       | Large |
| Not Understanding              | 59      | 60           | 21    |
| Understanding                  | 108     | 70           | 50    |

Table A.6.--Mean Scores with Standard Deviations and Scale Values by Levels of Independent Variables for Each Likert Scale and Subscale.

| Subscale II-A (Purpose of Organization; Satisfaction) |     |           |       |      |
|-------------------------------------------------------|-----|-----------|-------|------|
| Variable                                              | n   | $\bar{x}$ | s     | SV   |
| <u>Sex of Teacher</u>                                 |     |           |       |      |
| Male                                                  | 80  | 11.225    | 3.434 | 2.80 |
| Female                                                | 289 | 10.799    | 3.437 | 2.69 |
| <u>Grade Level Taught</u>                             |     |           |       |      |
| Primary                                               | 133 | 10.466    | 3.454 | 2.61 |
| Intermediate                                          | 164 | 10.878    | 3.386 | 2.72 |
| Upper                                                 | 69  | 11.637    | 3.382 | 2.90 |
| <u>Years of Teaching Experience</u>                   |     |           |       |      |
| Less Exp Tchr                                         | 56  | 11.857*   | 3.204 | 2.96 |
| Med Exp Tchr                                          | 172 | 11.139    | 3.365 | 2.78 |
| High Exp Tchr                                         | 136 | 10.176*   | 3.519 | 2.54 |
| <u>District Size</u>                                  |     |           |       |      |
| Small                                                 | 167 | 11.191    | 3.334 | 2.80 |
| Medium                                                | 130 | 10.930    | 3.537 | 2.73 |
| Large                                                 | 71  | 10.098    | 3.431 | 2.52 |

Table A.6.--Continued.

| Subscale II-B (Purpose of Organization; Dissatisfactions) |     |           |       |      |
|-----------------------------------------------------------|-----|-----------|-------|------|
| Variable                                                  | n   | $\bar{x}$ | s     | SV   |
| <u>Sex of Teacher</u>                                     |     |           |       |      |
| Male                                                      | 80  | 7.962     | 2.462 | 1.99 |
| Female                                                    | 289 | 7.501     | 2.600 | 1.87 |
| <u>Grade Level Taught</u>                                 |     |           |       |      |
| Primary                                                   | 133 | 7.428     | 2.547 | 1.85 |
| Intermediate                                              | 164 | 7.591     | 2.669 | 1.89 |
| Upper                                                     | 69  | 7.927     | 2.378 | 1.98 |
| <u>Years of Teaching Experience</u>                       |     |           |       |      |
| Less Exp Tchr                                             | 56  | 7.982     | 2.720 | 1.99 |
| Med Exp Tchr                                              | 172 | 7.656     | 2.600 | 1.91 |
| High Exp Tchr                                             | 136 | 7.389     | 2.491 | 1.84 |
| <u>District Size</u>                                      |     |           |       |      |
| Small                                                     | 167 | 7.802     | 2.534 | 1.95 |
| Medium                                                    | 130 | 7.346     | 2.535 | 1.83 |
| Large                                                     | 71  | 7.535     | 2.698 | 1.88 |

Table A.6.--Continued.

| Scale II (Purpose of Organization)  |     |           |       |      |
|-------------------------------------|-----|-----------|-------|------|
| Variable                            | n   | $\bar{x}$ | s     | SV   |
| <u>Sex of Teacher</u>               |     |           |       |      |
| Male                                | 80  | 19.187    | 5.051 | 2.39 |
| Female                              | 289 | 18.301    | 5.096 | 2.28 |
| <u>Grade Level Taught</u>           |     |           |       |      |
| Primary                             | 133 | 17.894    | 5.112 | 2.23 |
| Intermediate                        | 164 | 18.469    | 5.077 | 2.30 |
| Upper                               | 69  | 19.565    | 4.873 | 2.44 |
| <u>Years of Teaching Experience</u> |     |           |       |      |
| Less Exp Tchr                       | 56  | 19.839*   | 5.022 | 2.47 |
| Med Exp Tchr                        | 172 | 18.796    | 5.085 | 2.34 |
| High Exp Tchr                       | 136 | 17.566*   | 5.029 | 2.19 |
| <u>District Size</u>                |     |           |       |      |
| Small                               | 167 | 18.994    | 4.926 | 2.37 |
| Medium                              | 130 | 18.276    | 5.138 | 2.28 |
| Large                               | 71  | 17.633    | 5.319 | 2.20 |

Table A.6.--Continued.

| Scale III (Compatible with Personal Interest) |     |           |       |      |
|-----------------------------------------------|-----|-----------|-------|------|
| Variable                                      | n   | $\bar{x}$ | s     | SV   |
| <u>Sex of Teacher</u>                         |     |           |       |      |
| Male                                          | 80  | 22.100*   | 4.913 | 2.76 |
| Female                                        | 289 | 20.484*   | 5.396 | 2.56 |
| <u>Grade Level Taught</u>                     |     |           |       |      |
| Primary                                       | 133 | 20.135*   | 5.166 | 2.51 |
| Intermediate                                  | 164 | 20.743    | 5.476 | 2.59 |
| Upper                                         | 69  | 22.246*   | 4.757 | 2.78 |
| <u>Years of Teaching Experience</u>           |     |           |       |      |
| Less Exp Tchr                                 | 56  | 22.035*   | 5.088 | 2.75 |
| Med Exp Tchr                                  | 172 | 21.191    | 4.853 | 2.64 |
| High Exp Tchr                                 | 136 | 19.852*   | 5.902 | 2.48 |
| <u>District Size</u>                          |     |           |       |      |
| Small                                         | 167 | 20.520    | 5.141 | 2.56 |
| Medium                                        | 130 | 21.138    | 5.694 | 2.64 |
| Large                                         | 71  | 21.070    | 5.125 | 2.63 |

Table A.6.--Continued.

| Scale IV (Mentally and Physically Able) |     |           |       |      |
|-----------------------------------------|-----|-----------|-------|------|
| Variable                                | n   | $\bar{x}$ | s     | SV   |
| <u>Sex of Teacher</u>                   |     |           |       |      |
| Male                                    | 80  | 18.500    | 4.638 | 2.31 |
| Female                                  | 289 | 17.394    | 4.632 | 2.17 |
| <u>Grade Level Taught</u>               |     |           |       |      |
| Primary                                 | 133 | 17.263    | 4.906 | 2.15 |
| Intermediate                            | 164 | 17.628    | 4.509 | 2.20 |
| Upper                                   | 69  | 18.231    | 4.524 | 2.27 |
| <u>Years of Teaching Experience</u>     |     |           |       |      |
| Less Exp Tchr                           | 56  | 18.142    | 4.904 | 2.26 |
| Med Exp Tchr                            | 172 | 17.691    | 4.323 | 2.21 |
| High Exp Tchr                           | 136 | 17.250    | 4.970 | 2.15 |
| <u>District Size</u>                    |     |           |       |      |
| Small                                   | 167 | 17.658    | 4.459 | 2.20 |
| Medium                                  | 130 | 17.738    | 4.787 | 2.21 |
| Large                                   | 71  | 17.394    | 4.917 | 2.17 |

NOTE: \* significant mean.

Three persons' responses were omitted on the Grade variable, five persons' responses were omitted on the Experience variable, and one person's response was omitted on the District variable because the appropriate information was not checked on the questionnaire.

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## BIBLIOGRAPHY

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