

A STUDY OF THE ROLE OF THE PRINCIPAL IN
SCHOOLS WITH DIFFERENTIATED STAFFING

A Dissertation
Presented to
the Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Elmer E. Froese
August, 1972

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ABSTRACT

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Committee Chairman: Dr. Stewart D. North

The purpose of this study was to examine the role of the principal in schools with differentiated staffing (DS) as perceived by the principal, and as it was advocated by the literature. Four specific questions were researched:

(1) What role was advocated for the DS principal by the literature? (2) What was the perceived role of the DS principal? (3) What was the perceived role of the non-DS principal?, and (4) What was the nature of the difference, if any, between the perceived role of the DS principal and the perceived role of the non-DS principal?

The research was conducted in two phases. A summary review of the literature, focusing upon implications DS presented for the principal's role, was undertaken as the initial phase of the study. A survey of principals' perceived role constituted a second phase of the study. The Administrative Task Inventory (ATI) was developed and administered to DS principals within the USOE, School Personnel Utilization, DS projects and to a control group of randomly selected non-DS principals from within the same school districts.

Data from 126 respondents were subjected to three successive forms of principal factor analysis. The first form analyzed responses dealing with time spent on the 73 administrative tasks of the ATI, a second treated responses dealing with the importance attributed to these tasks, and a third form factor analyzed responses to items which had correlated with DS on the first two forms. The found differences and similarities between the responses of the DS and non-DS principals were interpreted in the context of what the literature predicated as the role of the DS principal.

There was considerable similarity in the structural pattern of the thirteen factors derived in the three forms. Twelve of the factors in the third and final form were named: INSTRUCTIONAL LEADERSHIP, OPERATIONAL MANAGEMENT, EDUCATIONAL PLANNING, BEHAVIORAL MANAGEMENT, CHANGE AGENT, DESIRED PROFESSIONAL DEVELOPMENT, INSTRUCTIONAL SUPPORT, PERSONNEL MANAGEMENT, DIFFERENTIATED STAFFING, COMMUNITY RELATIONS, ANCILLARY ADMINISTRATIVE TASKS, and PERSONNEL UTILIZATION. One factor was not named.

Only one factor in each form had a loading on the DS variable. The absence of loadings on the DS variable in the remaining factors suggested that these factors were representative of the entire research population of DS and non-DS principals. The following conclusions were based on the outcomes of the study.

1. On the basis of item content, twelve of the thirteen factors in each of the three ATI forms showed no evidence to indicate that the role of the DS principal was perceived or reported as significantly different ($p=.01$) from the role of the non-DS principal.
2. The item content of one factor in each of the three forms suggested that the DS principal was characterized by an open perspective regarding research, consulting and liaison with other institutions, and that he emphasized the formulation of objectives, the selection of instructional content and the evaluation of instructional planning.
3. The prominence in all three forms, of role behaviors associated with instruction, human relations, and conferring with staff regarding personnel requirements and instructional planning suggested that promotion of the DS concept and dissemination of its salient attributes had influenced the administrative behavior of both DS and non-DS principals.
4. Professional growth and development of principals was viewed as important by the entire research population, yet there was evidence of a lack of effective provision for or engagement in such endeavors.
5. DS schools tended to be somewhat smaller, were administered by principals with less principal's experience, and had a

much higher proportion of supportive staff than non-DS schools.

6. The overall approach used in this study appeared to have promise as a model for producing more definitive descriptions of administrative role in settings where divergence from traditional patterns of behavior is purported.

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Chapter 1

Introduction to the Study

Differentiated staffing has, in recent years, achieved recognition as a major innovative concept. The basis for this widespread interest has been that differentiated staffing called for a major restructuring of existing methods of organizing and staffing the public schools. Application of the differentiated staffing concept effected changes in the roles of personnel within the educational organization. Such changes were generally characterized by a hierarchical stratification of the school's staff and the creation of multi-dimensional instructional support systems including paraprofessional personnel.

Olson (1971) presented the rationale underlying differentiated staffing as the enhancement of the pupils' education by remodeling the teacher's role, total reorganization of school systems; and by changing the methods of making educational decisions. Sharpes (1970), English (1971) and McKay (1971) all referred to the broad scope of the differentiated staffing concept by citing concomitant organizational changes such as the implementation of flexible or modular scheduling, team-teaching, individualization of instruction, and the use of performance criteria for assessing

students and staff. Study of the literature indicated that proponents of differentiated staffing saw it not as just another innovation, but as a versatile instrument which could serve as the integrative means towards the realization of client-centered performance-based education.

Central to the process of staff differentiation was the delineation of instructional responsibilities which could provide specific performance-based criteria for instructional staff. The integration of various roles tended to take the form of a staff hierarchy including para-professional staff, teachers, master teachers, and administrators. The specific structural characteristics and the particular positions within the hierarchy varied considerably from one differentiated staffing model to another, but the basic purposes were generally similar.

The multi-faceted concept of differentiated staffing was generally purported to benefit the quality of the instructional process and the professional status of the educator. These benefits were generally accomplished by the incorporation of paraprofessional staff, by providing a career ladder for advancement for the teacher without having to leave the field of classroom instruction, and by rewarding superior performance with additional compensation, expanded professional responsibility and greater participation in the decision-making process.

The interrelatedness of role changes within organizations is well known. Wilkins (1971) reported that the first roles to be affected by the implementation of differentiated staffing practices were those of the middle management level; principals, supervisors, and directors. The subject of this study is the perceived role of principals in schools with differentiated staffing.

Purpose of the Study

The major consideration of the study was to examine the extent to which the role of the principal was influenced by differentiated staffing. The amount of empirical data regarding differentiated staffing projects was found to be limited. Much of the existing material dealt with the design and description of models, many of which had not yet been implemented. A few studies explored the acceptance of the differentiated staffing concept by educators, or their satisfaction with organizational aspects of differentiated staffing. The bulk of the material currently available from schools engaged in differentiated staffing was descriptive and dealt primarily with the teacher. Project reports and journal articles by practitioners involved in projects frequently spoke of changes in the principal's role. Upon the inception of this study, no evidence had yet been presented to indicate that there were discernible differences in the role of principals of schools with differentiated staffing as compared

with the role of principals in schools with traditional staffing practices.

There was no evidence to suggest that there had been a review or consolidation of literature dealing with the differentiated staffing principal. Only nine studies dealing in any way with differentiated staffing were reported in the Dissertation Abstracts when this study was undertaken. A single study by McKay (1971), who surveyed Indiana principals' perceptions of differentiated staffing as a viable method of school personnel organization, focused directly upon the principal. Only cursory descriptions of the administrator's role in differentiated staffing were found. With the exception of incidental reference to changes in the principal's role, there was little evidence that the differentiated principal's role itself had been examined directly or in depth.

Review of the recommendations cited by persons who had researched differentiated staffing indicated that investigation of this area was warranted. Olson (1971) and McKay (1971) both recommended that the role of the principal of schools with differentiated staffing be studied. Butterfield (1971) stated a need for analysis of the role of the principal in a differentiated staff and Evans (1970) recommended that a future study focus totally on an analysis of the role of the chief administrator of a differentiated structure as contrasted with the traditional principal's role. Sharpes (1969) recommended that attention be given to studies contributing

information to the development of a model for administrative personnel.

The impetus for this research came from the revised staffing practices and structural changes of schools influenced by differentiated staffing. The need for this study was emphasized by the paucity of empirical data and the limited literature dealing directly with the principal in a differentiated staffing situation.

The purpose of this study was to review and to consolidate the literature dealing with the role of the differentiated staffing principal and to examine his perceived role as indicated by tasks he reportedly performs and the importance he attributes to these tasks. The role perceptions identified by use of an inventory of administration tasks constituted the basis for analysis and comparison of administrative role in two situations.

Two groups were surveyed and compared: (1) a group of principals administering schools with differentiated staffing, and, (2) a group of principals administering schools not engaged in differentiated staffing. The basic factors underlying the responses pertaining to the perceived role of principals in the two groups were identified by factor analysis and interpreted in the context of role behavior described and prescribed by recent literature dealing with differentiated staffing.

The problem undertaken by this study was to determine the role of the principal in schools with differentiated staffing: (1) as advocated by the literature, and (2) as perceived by the principals of schools funded by the United States Office of Education as differentiated staffing project schools.

In order to accomplish the purposes of this study, specific attention was focused toward answering the following questions:

1. What role is advocated for the differentiated staffing administrator by the literature?
2. What is the perceived role of the differentiated staffing administrator as indicated by the Administrative Task Inventory?
3. What is the perceived role of the non-differentiated staffing administrator as indicated by the Administrative Task Inventory?
4. What is the nature of the difference, if any, between the perceived role of the differentiated staffing administrator and the perceived role of the non-differentiated staffing administrator as indicated by analysis of their responses to the task items of the Administrative Task Inventory?

Limitations of the Study

Research dealing with the differentiated staffing concept is currently limited to data, interpretations and observations drawn from practitioners engaged in exploring what is still an evolving concept. The following limitations apply to this study:

1. The study was limited to those school systems or school districts cooperating with the U.S.O.E. Bureau of Educational Personnel Development as federally funded differentiated staffing projects.
2. The traditional role of the non-differentiated staffing principal was included in this study only for basis of comparison in the application of the Administrative Task Inventory and specific treatment of this particular topic was not intended.
3. Responses to items of the Administrative Task Inventory were subject to the limitations of a linear-scale instrument dealing with perceptions of individuals.
4. Findings were subject to the limitations of factor analytical techniques which Fruchter (1954) cautioned merely serve to represent fundamental underlying variables observed under a specified set of conditions.

It should be noted that research employing factor analysis is of an exploratory nature. Williams (1968) stated that the interpretation and naming of factors is left to the subjective evaluation of the researcher. The labeling and interpretation of factors descriptive of the research population was based upon findings and principles extracted from current literature dealing with differentiated staffing.

The findings of this study apply only to individuals in the survey and care should be taken in making inferences concerning other populations.

Definitions and Abbreviations

Terms used in this study are generally understood and accepted by most educators. For purposes of clarity and consistency of interpretation a number of terms will be defined to place them within a specific context in this study. Certain descriptive terms used frequently in the study are abbreviated as indicated by the abbreviation appearing in parentheses when that term is presented for definition.

Role. This study assumed that the perceived task performance and the importance attributed to these tasks were representative of the principal's perception of his role--as he reported it. The term "role" is used by the writer to represent the composite description of individual principal's reports of their own task performance and the importance they

attribute to these tasks. Such an interpretation is most consistent with the term "role description" which Owens (1970) says, "refers to the actual behavior of an individual performing a role, or, more accurately, to a report stemming from one individual's perception of that behavior [p. 72],."

Differentiated staffing (DS). The general term, DS, is defined as a planned method of induction, preparation, and deployment of staff by distinguishing individual differences in teachers' responsibilities according to their professional needs, interests, abilities and aptitudes, which will improve the educational opportunities for students. Other descriptors commonly used to describe the same concept are DS, differential staffing, staff differentiation, and differentiated teaching assignments (DTA).

For purposes of determining the parameters of this study the term, DS, was applied only to schools accepted and funded by the United States Office of Education as DS projects.

Differentiated staffing principal (DSP). This designation is applied to the individual building administrator who assumes responsibility for the direction and management of a public school as building principal. In this study the designation, DSP, is applied to the principals of schools with differentiated staffing accepted and funded by the United States Office of Education as DS projects.

Non-differentiated staffing principal (NDSP). This designation is applied to the individual building administrator who assumes responsibility as building principal for the direction and management of a public school with a traditional non-differentiated form of personnel utilization. In this study the NDSP designation is applied to principals of non-DS schools within the cooperating districts.

Decision-making. This term is used as interpreted by Griffiths (1957) in referring to judgments which affect course of action - in this case dealing with the educational process.

Factor analysis. This term is applied as interpreted by Fruchter (1954) for referring to a method of statistically determining the number and the nature of the underlying constructs among a large number of measures.

Summary

Differentiated staffing is a descriptor which is comparatively new to the educational scene. Those educators who purport the many advantages of differentiated staffing view it as a process for more effectively accomplishing educational objectives. Fenwick English (1969), one of the leading spokesmen for the DS movement says, "to differentiate a teaching staff means to separate by different roles [p. 53]." Such differentiation has generally taken the form of major

reorganization of the structure of the traditional school, with a major effect upon the roles of the staff. Little research evidence is available to describe the impact that the various DS models have had upon administrative staff, or for principals in particular.

This study was conducted in order to examine both the literature and the perceptions of principals participating in DS projects to determine the degree and nature of the effect that differentiated staffing has had upon the role of the principal.

Chapter 2

Review of the Literature

A study of the literature dealing with the DS revealed a paucity of published material and a very limited supply of research papers or dissertations. McKay (1971) and Brotman (1970) both referred to the shortage of theoretical material or empirical data pertinent to a study of DS. Much of the most recent material such as books (Cooper, 1972; English, 1972) or dissertations (Sharpes, 1969; Pillot, 1970; Frinks, 1971; English, 1971) were written by practitioners directly involved in DS projects. Examination of bibliographies, or special issues of journals such as the January, 1972, issue of the National Elementary Principal (1972) demonstrated that the majority of articles, papers and reports emanated from a limited number of writers. This group of educators including persons such as Dwight Allen, Fenwick English, Donald Sharpes, Bernard McKenna, Roy Edelfelt, Bruce Joyce and John Rand have had a major influence upon the development of differentiated staffing.

The descriptive term, differentiated staffing, or common abbreviation, DS, are comparatively new terms. Research in Education did not carry an ERIC listing of this

descriptor until 1969, when it listed only twelve articles in its first subject index reference to DS. Dissertation Abstracts did not list any dissertations under the DS descriptor until 1970. The National Cluster Coordination Center at Mesa, Arizona, funded by the United States Office of Education, has made a major contribution to study of this topic by its collection, publication and dissemination of materials related to differentiated staffing.

This chapter will present a compendium consisting of the background of DS, descriptions of DS models, the theoretical base and the emerging concepts which comprise the DS movement. The primary intent is to identify and to summarize recurrent thinking and research pertinent to the administrative aspects of DS.

Background of Differentiated Staffing

The emergence of the differentiated staffing concept was motivated by a marked dissatisfaction with the utilization of human and material resources within the existing educational organization. Numerous innovative concepts developed prior to use of the term differentiated staffing, contributed to and were synthesized in the DS movement. The changing perspectives of teachers and their insistence upon playing a significant role in the design and implementation of educational process was central to changes leading to DS.

Administrative differentiation. Fenwick English, former director of the Temple City project and now director of the DS project at Mesa Arizona makes frequent reference to the Lancastrian school of the early nineteenth century as the earliest predecessor of DS. Olson (1971) agrees that the evolution of differentiated roles and positions can be traced to the Lancastrian model, but goes on to point out that this concept was extended as head teachers, principals and superintendents became an accepted part of the educational structure. Lucio and McNeil (1962) described how supervisors, coordinators, and directors were also an outgrowth of this same process of progressive specialization or differentiation. Administrative and supervisory positions were evidence of the first differentiation within educational organizations. Until the last decade the teacher's role remained virtually unchanged.

Changes in the role of the teacher. During the sixties a number of significant steps were taken toward reorganization of the entire educational structure. In 1961 the Commission on the Experimental Study of the Utilization of the Staff in the Secondary Schools, solicited proposals for experimental projects to more effectively utilize the professional competence of teachers. Trump (1961) reports that this early study, focusing on the utilization of non-professional workers and teacher aides, directly affected more than a

hundred high schools. Anderson (1964), in a review of research dealing with staff utilization, stated:

Only the beginning suggestion of differentiated staffing appeared, primarily in the use of apprentice teachers and paraprofessionals and relief from routine chores, but with the addition of aides to the regular staff rather than through restructuring (Anderson, 1964, p. 455).

McKay (1971) and Sadler (1971) identified the use of teacher aides and the development of team-teaching as forerunners to differentiated staffing. By the mid-sixties a number of revolutionary concepts were beginning to impact upon the traditional educational organization. The use of teacher aides, the emergence of team teaching, and demands for continuous progress or non-gradedness emerged as salient concepts influencing educators. As early as 1961, Trump and Baynham (1961) issued a report recommending the use of individual, small group, and large class activities, flexibility in scheduling, the recognition of individual differences of teachers in differentiating assignments, and the specialized utilization of teacher talents and abilities. These recommendations challenged the structural status quo of schools which accepted self-contained single teacher classrooms as the norm.

Goodlad (1966), an ardent advocate of individualized instruction, said that the central problem in the full utilization of a diverse array of potential teaching talent was primarily an organizational problem. Team-teaching was the

concept which attracted the attention of educational administrators. It offered little as a specific form of school structure but team-teaching did provide an organizational concept which demanded cooperative planning, constant collaboration, close unity and open professional communication. As such, team-teaching emerged as the organizational precursor to DS. J. Lloyd Trump is regarded by most educators as the major figure in the promotion and development of team-teaching.

Differentiated staffing. An Education U.S.A. publication, Differentiated Staffing in Schools (1970) cited Trump as one of the originators of the DS concept and identified team-teaching as a forerunner to DS when it said:

Differentiated staffing is an outgrowth and refinement of team-teaching and the idea of 'the teacher and his staff,' both of which recognize a diversity of teaching tasks and propose use of auxiliary personnel in the schools to relieve teachers of non-teaching duties (NSPRA, 1970, p. 1).

The proposals advanced by Trump and other proponents of team-teaching received support in the 1966 Regional TEPS Report of the National Commission on Teacher Education and Professional Standards entitled Remaking the World of the Career Teacher. This report recognized the need for restructuring the educational organization and marked the beginning of the move into DS, in which the National Commission on Teacher Education and Professional Standards played a significant role.

The literature clearly indicated that teacher aides, team-teaching and the growing salience of the teacher as a professional individual contributed to the evolution of differentiated staffing. The DS concept was first described by men like Trump (1961), Allen (1967) and Joyce (1967). These early descriptions of DS emphasized the uniqueness of the individual teacher which was to be recognized by the differentiation of teaching levels and salaries; flexible scheduling and grouping of students; and the minimization of individualization of instruction through a better utilization of teacher and student talent and time.

Differentiated Staffing Models

The original model of a DS plan was developed by Dwight Allen, presented to the California Board of Education in 1966 and first implemented in Temple City, California. Allen (1967) established three essential attributes for differentiated staffing: (1) a minimum of three differentiated teaching levels, each with a different salary range; (2) a maximum salary at the top level at least double that of the maximum salary of the lowest level, and (3) a substantial amount of direct teaching responsibility for all teachers at all levels. These criteria became the accepted descriptors of what is now known as the Temple City Model and served as the guidelines for applicants seeking funding of DS projects under the Education Professions Act of 1967.

Edelfelt (1967), in a paper presenting a rationale for DS, stated eight basic arguments in favor of differentiated staffing:

1. The present job of the teacher has become unmanageable.
2. Teachers cannot function effectively in isolation.
3. Teachers desire and need the stimulation of colleagues.
4. Modern developments, an affluent society, and the knowledge explosion are mandates of curricular change which can be achieved effectively by a 'teacher and his staff.'
5. Teachers, like all human beings, possess individual differences which can be best utilized through different assignments.
6. Pupils are different, too, and these differences can be met more effectively by a teacher and his staff.
7. Differentiated assignments cause teaching and learning to be more exciting and effective.
8. Teachers need to look forward to promotion in teaching (Edelfelt, 1967, pp. 16-19).

This conceptual treatment by Edelfelt of what is frequently referred to as the concept of "the teacher and his staff" integrated the use of paraprofessional staff and the emerging elements of DS.

Joyce (1967), McKenna (1967), and Sharpes (1967) presented basic criteria for staff differentiation and proposed models which paralleled the theoretical emphasis of Edelfelt (1967) and Allen (1967). Actively stimulated by the Education Professions Development Act of 1967 and the consequent funding of DS projects by the United States Office of Education catalysed the development of innovative staff utilization models across the nation. Donald K. Sharpes (1972)

described the effect of federal investment in staff differentiation as creating unprecedented expectations among educators. Tillotson (1970) reported that by 1969 some two hundred school districts in the United States had implemented some aspect of DS.

Professional interest in DS was exemplified by the genesis of numerous models for staff differentiation. English (1969) identified fourteen different DS models and presented a primitive taxonomy for classifying them. He divided the models into four broad categories: (1) learning models, (2) teaching models, (3) teaching models and curricular models and (4) organizational models. English viewed staffing as a control system based upon: (1) assumptions of man and the work environment; (2) assumptions regarding the nature of knowledge; and (3) assumptions regarding the nature of learning and teaching. In reality all models touched to some degree on each of the four categories, but they did differ in their emphasis.

The DS models differed greatly in the hierarchies they created and in the degree of flexibility in their structure. Several characteristics, however, were common to all models: (1) all models differentiated the role and responsibilities of staff members; (2) differentiated pay usually accompanied the differentiated role; (3) differentiated staffing was generally accompanied by changes in institutional variables,

such as class organization, curricular focus, scheduling and the physical organization of the school plant.

Sharpes (1969) presented a comprehensive treatment of the process of designing a DS model in his dissertation, Differentiated Teaching Personnel: A Model for the Secondary School. He described the McKenna and Temple City DS models and reviewed the theory of model building as it applied to DS. Sadler (1971), who also designed a DS model, preceded his proposed model with general descriptions of twelve DS models, which were receiving current attention.

Sadler concluded from his review of the literature that DS must: (1) meet the individual needs of pupils, (2) facilitate shared decision-making involving all constituents of the school, (3) include peer evaluation tied to a concept of accountability and, (4) have the flexibility of a fluid hierarchy based upon changing instructional needs.

Recent studies (Sadler, 1971; Olson, 1971) and analyses by English (1969, 1972) dealing with DS models indicate that although vertical differentiation related to the career ladder concept continued, there was increasing evidence of a trend towards horizontal differentiation based upon student needs. This increased emphasis upon instructional performance of teachers based upon student needs was described by Peter Mann (1971) in his review of the Mesa, Arizona, DS project. Mann referred to the Mesa project as a "generation

two model." The Mesa plan is described along with other models in the following section.

Comparison of the various DS models was complicated by the limited amount of up-to-date material. The following summary descriptions are intended to present a general overview of the purposes, structural aspects and salient characteristics of a number of relatively popular models. The models are presented to illustrate the various approaches taken rather than as a complete summary of existing models.

Temple City model. The Temple City, California, DS model, first proposed by Dwight Allen in 1966, has undergone considerable change. English (February, 1969) described the original model as including seven roles: teaching research associate, teaching curriculum associate, master teacher, senior teacher, staff teacher, academic assistant, educational technician, and a school manager. A later report, entitled Synthesized Description of Distinct Features: Temple City DS Project (August, 1971) stated that a four level teacher hierarchy including Master Teachers, Senior Teachers, Staff Teachers and Associate (Intern) Teachers had been developed and implemented. This four-step hierarchy represented the revision of two preceding models and the elimination of three levels in the structure (See Figure 1).

The same report presented the major components of the Temple City model as: differentiated roles of teaching staff,

Temple City Differentiated Staffing Plan
(1969-71 Model)

			Non-tenure MASTER TEACHER Doctorate or equivalent
		Non-tenure SENIOR TEACHER M.A. or equivalent	
	Tenure STAFF TEACHER B.A. and Calif. Credential		
Tenure ASSOCIATE TEACHER B.A. or Intern 100% teaching responsibilities	100% teaching responsibilities	3/5's staff teaching responsibilities	2/5's staff teaching responsibilities
10 Months \$6,500-9,000	10 Months \$7,500-11,000	10-11 Months \$14,500-17,500	12 Months \$15,646-25,000
INSTRUCTIONAL AIDE II \$6,000-7,500			
INSTRUCTIONAL AIDE I \$4,000-7,500			
CLERKS \$5,000-7,500			

Temple City Model

Figure 1

flexible use of time and space including non-gradedness, diffused decision-making by collegial action, teacher involvement in the selection of professional and paraprofessional personnel, the utilization of paraprofessionals for clerical and housekeeping tasks, and the use of performance criteria and peer evaluation for teacher assessment. The career ladder concept which enabled teachers to advance in status and level of remuneration while remaining in the classroom has continued to be a part of the Temple City model. It would appear that the concepts of the career ladder and the Academic Senate have been two salient characteristics of the Temple City DS project.

Mesa, Arizona project. English and Zaharis (April, 1971) described the two major objectives of the Mesa DS project as: (1) the creation of differentiated teaching staffs which met the specific needs of learners in particular schools, and (2) the development of internal performance contracting as an accompanying pay vehicle for the DS model.

The Mesa model differed markedly from other DS projects in that its hierarchy existed in the form of a fluid arrangement of teacher roles determined by current pupil needs. Vertical differentiation was on an ad hoc basis. Peter Mann (1971) listed the critical aspects of the Mesa approach as follows:

1. . . . all new teaching roles must be based upon a needs assessment of learners.

2. . . . no permanent ranking or hierarchy of roles is envisioned.
3. . . . a hierarchy of roles must parallel a hierarchy of student needs assessment, roles are established for a specific period of time.
4. . . . the pay mechanism for such a fluid arrangement is a secondary aspect to the project, subject to the involvement of all parties concerned.
5. . . . there is no overall (generic) model in the Mesa project. The emphasis of the project has been upon teaching teachers how to build models based upon sound theoretical practices, and from a pupil data base [Mann, 1971, pp. 13-17].

The Mesa project incorporated many of the positive aspects of earlier models, but was unique in its "fluid" hierarchy.

Kansas City, Missouri model. The Kansas City project has operated in two new schools since 1968. The model was designed with primary emphasis upon instructional criteria and a secondary emphasis upon organizational considerations. The hierarchy included five professional steps in a vertical hierarchy. Hair (1969) reported that the differentiated structure included the positions of: coordinating instructor, senior instructor, associate instructor, intern, and principal. Supportive personnel, student teachers, and paraprofessional personnel completed the model. The basic distinction between the elementary and secondary situation was that in the elementary schools organization was by grade rather than by subject fields.

Utah model. The Utah model description was taken from the original proposal which constituted a state plan for DS. The major objectives proposed for the Utah project were the development of strategies contributing to continuous progress, individualized study, flexible student grouping, flexible scheduling and use of facilities. Sadler (1971) described the staff structure in the Utah plan as consisting of five roles: teacher, experienced teacher, tutorial assistant or intern, volunteer aide, and clerk-student progress accountant. The first three positions listed were comparable to the senior teacher, staff teacher and academic assistant of the Temple City plan. The Utah DS model was quite typical of many general staff utilization projects being undertaken across the nation.

Beaverton, Oregon model. The Beaverton DS model was designed to achieve better utilization of staff by: (1) precise definition of teaching skills, (2) designing a staff model based upon defined skills and (3) developing personnel for differentiated assignments. The project was designed as a planning and staff development model. Tasks and responsibilities were differentiated, with related salary schedules, and staffing patterns were based upon those skills required for individualized instruction.

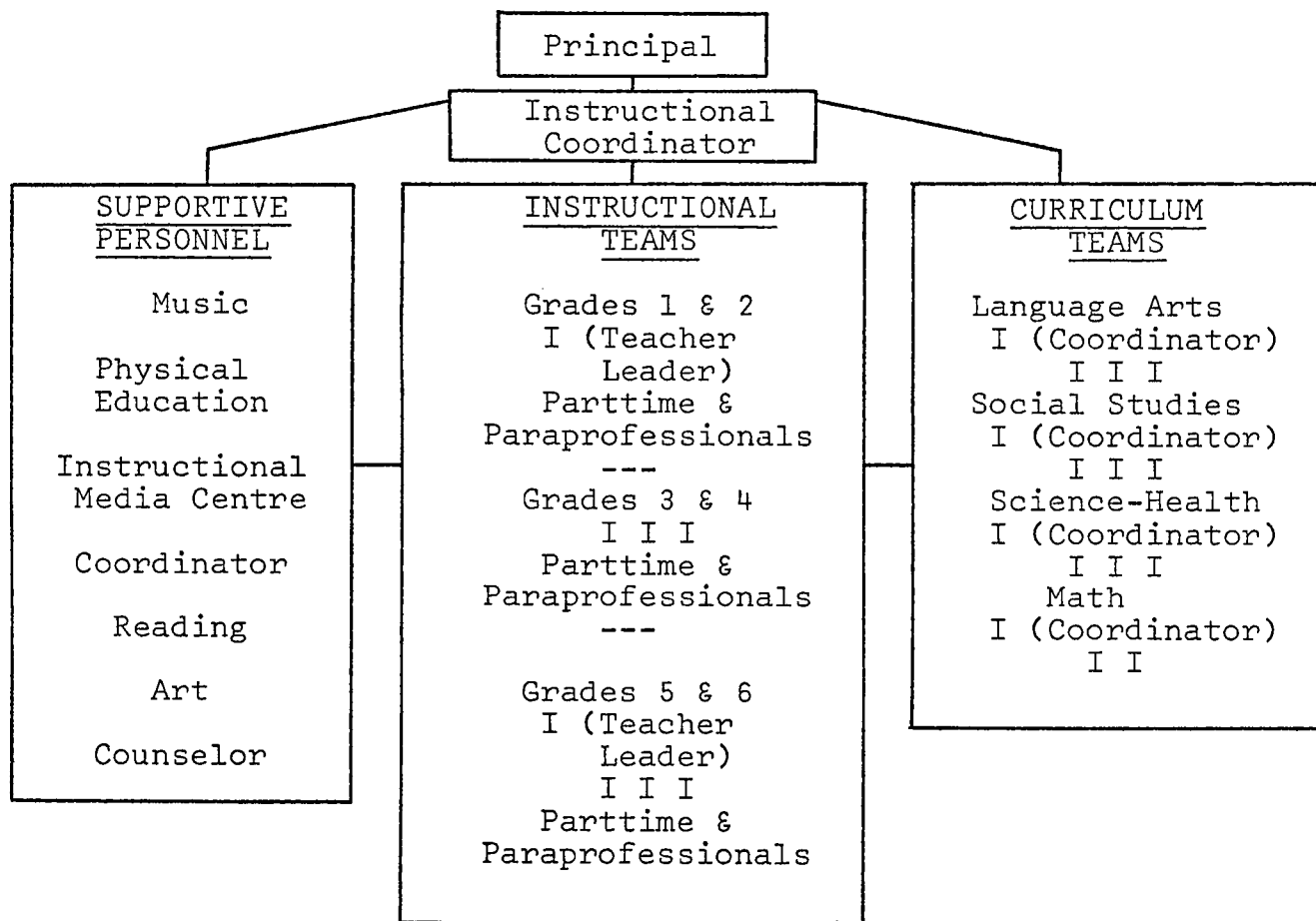
The model included both professional and paraprofessional roles. Three categories of personnel were identified

in the proposal for federal funding of the project. Curriculum teams, instructional teams and supportive personnel were to be coordinated by an instructional coordinator. The staff hierarchy had three levels: the principal, the instructional coordinator and the teams consisting of teaching staff. Teams included coordinator, teacher leaders, teachers, part-time staff and paraprofessional staff. (See Figure 2).

Florida projects. Differentiated staffing models in the state of Florida were a consequence of the united support of the Florida State Department of Education and federal funding under the Education Professions Development Act. Legislation by the state of Florida provided the impetus for the development of flexible staff utilization projects. Pilot projects engaged in staff development procedures, task analysis, model design, and staff training programs were initiated in three school districts--Dade County (Miami), Leon County (Tallahassee) and Sarasota County (Sarasota).

Frinks (1972) identified the basic elements of these pilot DS projects as the development of:

- (1) Levels of instructional responsibility which identify and respond to specific performance objectives.
- (2) Compensation commensurate with instructional and organizational responsibilities.



I = (Instructor)

Beaverton, Oregon Model

Figure 2

- (3) Instructional programs reflecting student needs.
- (4) Flexible scheduling for better instructional options.
- (5) Instructional support systems.
- (6) Involvement for personnel in decision-making.
- (7) Flexible use of physical facilities.

The Florida project, like that of Mesa, Arizona, emphasized the development of site-specific models. The focus was upon systemic planning, emphasis upon student performance criteria and career incentives for staff. The staffing pattern included professional, non-professional, and support personnel. One of the illustrative hierarchies developed for consideration by pilot projects included eight levels: Teaching Research Specialist, Teaching Curriculum Specialist, Senior Teacher, Staff Teacher, Associate Teacher, Assistant Teacher, Educational Technician, and Teacher Aide. The requirements ranged from being unspecified for aides to a doctorate with accredited speciality for the top level. Salary ranged from \$3,500 at the lowest level to \$19,000 at the Specialist level (See Figure 3).

The Florida DS models were characterized by gradual but scientific development within a state plan. They showed evidence of capitalizing upon the experience of preceding projects.

							Nontenure	Salary Range
							Teaching Research Spec. Dr. Degree	17,000- 19,000
						Nontenure	Teaching Curricu- lum Spec- ialist	15,000- 16,500
					Nontenure	Senior Teacher MS, MA or M.Ed.	Master's	12,500- 14,000
				Tenure	Staff Teacher BA, BS, B.Ed.			10,000- 11,500
			Tenure	Associate Teacher BA, BS, or B.Ed.				7,500- 9,000
		Nontenure	Assistant Teacher Assoc. Degree					5,500- 6,500
	Nontenure	Educational Technician						4,500- 5,500
Teacher Aide								3,500- 4,500

Florida Model

Figure 3

San Diego model. One of the earliest projects now labelled as a DS model was developed in San Diego in 1963 to offer principals greater autonomy in the selection, organization and utilization of personnel. The one basic requirement made of administrators designing models was that the costs of a total staff's salaries had to remain the same as in the traditional organization. Earl (1970) reported that the most popular sub-plan in San Diego was one in which teacher units could be converted to paraprofessional units at a ratio of one to four. In practice this meant that with the consent of his staff a principal could place four paraprofessional staff on faculty for each professional person he deleted. The need for staff consent, and a limit of two years service for the paraprofessionals acted as a control to curb abuse.

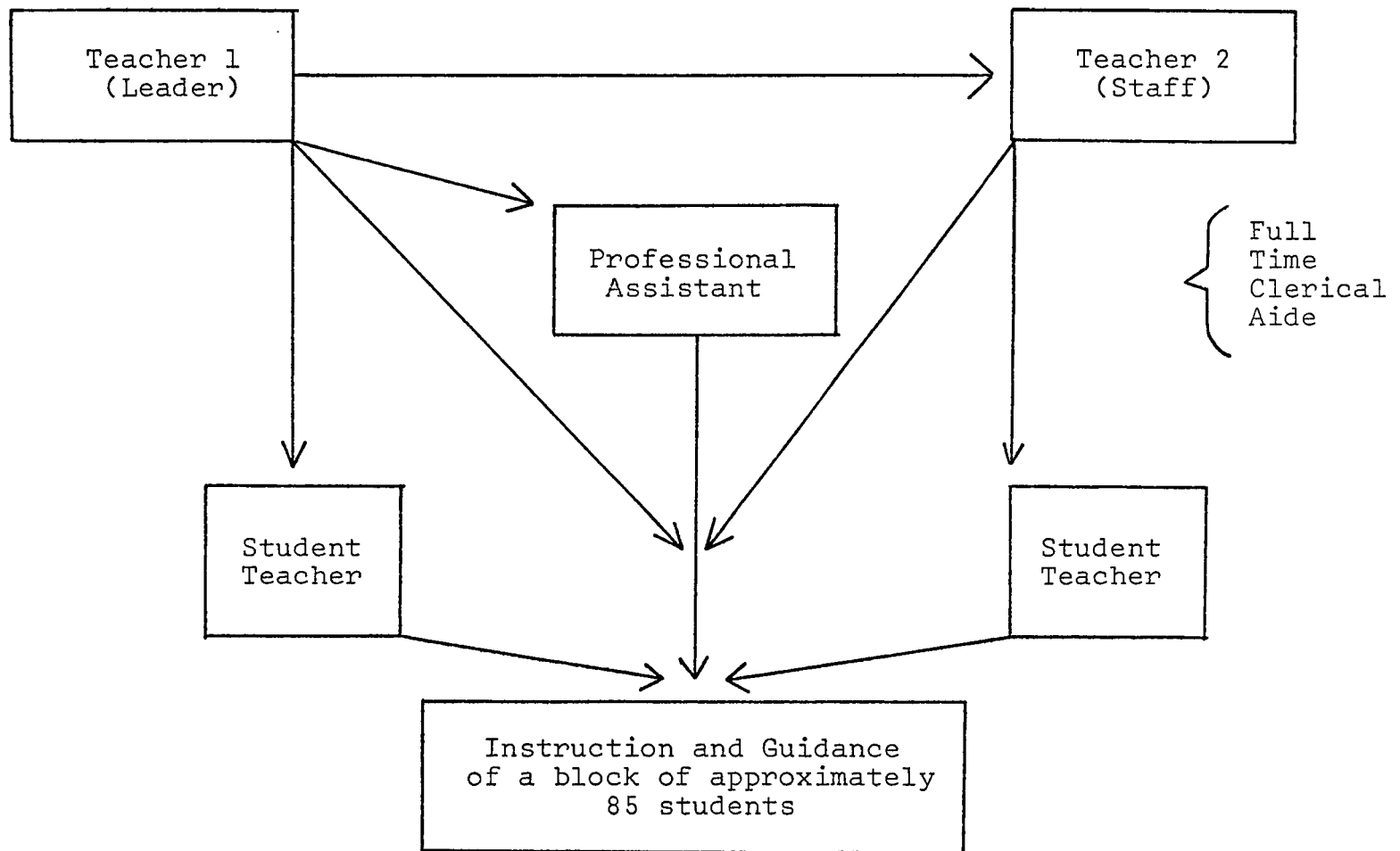
English (1972) criticized this plan as having been, "constructed so as to not interfere with the vested power of administration [p. 35]." The plan was limited in the degree of differentiation effected, and can hardly be compared to the broad scope of more recent DS models.

Niskayuna, New York model. A recent innovative DS model evolved in the Niskayuna Public School System of Schenectady, New York, as a result of a three year study in independent study techniques. The model proposed the use of a differentiated staff comprised of a team leader, staff

teacher, professional assistant (comparable to Temple City's academic assistant) and two student teachers for the instruction of blocks of students. Each block consisting of approximately 85 elementary pupils was instructed in flexibly sized groups engaged in a considerable amount of independent, but guided study. The plan, described by Joseph Oakey in a mimeographed report, "Model of a Proposed DS Pattern" was presented to the Niskayuna Public Schools. Although limited information is available about this plan, it illustrated the recent increase of innovative flexible staffing plans being developed across this continent (see Figure 4).

Analysis of the various models developed since the early sixties indicated a distinct shift in the emphasis and basic objectives of DS plans. The literature shows that primary emphasis originally placed upon structural aspects has given way to instructional considerations. Comparison of the Temple City model of 1966 and the more recent models developed at Mesa and in Florida demonstrated the continued presence of concepts such as team-teaching, the increased use of paraprofessional staff and the flexible utilization of personnel, time, and space. The literature also reveals an increased emphasis upon shared decision-making and its relationship to hierarchical differentiation.

Temple City first offered the career ladder to the professional teacher. More recent models such as the Mesa



Niskayuna, New York Model

Figure 4

model either place the career ladder on its side thereby effecting a horizontal differentiation based upon function rather than position or they make upward mobility tentative and contingent upon evaluation by the teacher's professional peers. The presence of needs assessment and the increased prominence of performance criteria based upon instructional objectives was also more apparent in the more recent DS models.

The Theoretical Base of Differentiated Staffing

Differentiated staffing emerged as the synthesis of a number of preceding movements and theoretical precursors. The work of theorists like Myron Lieberman and J. Lloyd Trump had suggested the restructuring of the traditional educational organization. The growing strength of teacher associations and the increased recognition by teachers that their professional status was not being recognized contributed to the growth of teacher militance. The first symptoms of the need to revise the structure of the educational organization was manifested as demands of teachers for participation in decision-making.

The philosophical base. Differentiated staffing by its very nature affects the role of each individual within the educational organization. The philosophical base for this revolutionary concept was established by Myron Lieberman

(1960). Lieberman drew an analogy to the medical profession and suggested a personnel structure for education radically different from the prevailing one. He proposed a differentiated hierarchical structure which he said could facilitate: a higher level of competence in the school; the training of educators in the field rather than solely in training institutions; greater incentive through higher salaries for quality personnel at the top of the hierarchy; attracting more men to the profession through greater career possibilities; lower costs; and increased technical competence through specialization and by freeing professionals of non-professional tasks.

The implications of Lieberman's proposal for the teacher-administrator relationship are evident in existing DS models. The effect of DS upon the administrator was particularly pertinent to this study. The preceding section outlining the development of DS only alluded to administrative implications. Recent research (English, 1971; Olson, 1971) pointed out that DS proceeded in concert with the growth of teacher militancy. These studies drew heavily upon organizational and administrative theory as they examined the professional relationships of educators. Differentiated staffing relates not only to the restructuring of roles to achieve better education. It presents major implications for the process of decision-making within a traditionally bureaucratic educational organization.

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Power and authority. Saxe (1966) in writing about DS in the NCTEPS report, Remaking the World of the Career Teacher, said, "Part of the attempt to increase the status of the teacher has involved a transfer of power. Some of the administrator's power has been relegated to the master teachers [p. 182]." Bruce Caldwell (1970) suggested that DS presented a desirable alternative to existing staffing practices by offering in its design a new distribution of power. The issue of shared or decentralized decision-making and its relation to the concept of power demands a theoretical analysis of DS.

Teacher participation in decision-making was a prominent feature in Allen's original elucidation of DS. Reference to this issue in the literature generally states or infers that teacher militance is in fact evidence of the process of professionalization. The proponents of DS are consistent in their support of demands for increased participation for teachers in decision-making. English was the most ardent advocate for this cause, asserting that only by sharing power and by admitting teachers to the decision-making process could administrators escape obsolescence and bureaucratic entrophy.

The issue of power and authority has become increasingly pertinent to the organizational relationship of teacher and administrator within the DS situation. Hunter (1953) presented a definition of power which has general acceptance. He stated that, "power is a word that will be used to describe the acts of men going about the business of moving other men

to act in relation to themselves or in relation to organic or inorganic things [p. 3]."

Griffiths (1967) stated that power was sought so as to control the decision-making process in an organization. Simon (1950) also distinguished between power and authority when he referred to superior-subordinate relationships and stated that, "authority may be defined as the power to make decisions which guide the actions of another [p. 125]." He went on to say that, "A subordinate may be said to accept authority whenever he permits his behavior to be guided by a decision reached by another, irrespective of his own judgment as to the merit of that decision [p. 22]."

Olson (1971) referred to this issue within the educational organization when he stated:

An element fundamental to the differentiated staffing concept is the dichotomy formed by administrative authority (which in the case of the schools is legally endowed), on the one hand, and professional authority, on the other. . . . The function of administrative authority is primarily the control and coordination of the organization's basic activities. In contrast, professional authority emanates from knowledge and appears in organizations when they must be concerned with the generation and application of knowledge (Olson, 1971, p. 65).

Olson goes on to cite Amiti Etzioni's view that administrative authority and authority based on knowledge or professional authority are basically incompatible.

English (1969) referred to Zaleznik's (1966) concept of "situational leadership" and Rensis Likert's (1961) concepts

of "linkage" and the "interaction-influence-system" to provide a theoretical basis for participative administration of the educational process. Artisans of DS such as Allan, Rand and English express views consistent with the organizational models of modern theorists such as Warren Bennis (1966) and Rensis Likert who speak of integrating the needs of individuals and organizational goals.

Participative decision-making. The rationale for DS presented by Edelfelt (1967) showed evidence of a "participative management" point of view. Evans (1970) cited two studies (Johansen, 1967; Boyan, 1956) which concluded that increased participation of teachers in decision-making effected greater effort and job satisfaction on their part.

The common assumption that professionalization of the teacher can be achieved through the implementation of staff differentiation characterized by shared decision-making indicates the influence of Maslow and Herzberg. Motivation by job-enrichment and participative process are clearly an integral part of the staff development aspect of DS.

Olson (1971) pointed out the potential conflict of administrative authority and professional authority and questioned whether this dichotomy could be reconciled within DS. The same conflict applies to the concept of accountability, which is becoming increasingly prominent in the literature dealing with DS. If the educator within the DS situation is

to be held accountable for his decisions, the question remains--accountable to whom. The literature dealing with DS does not speak to whether the legal power granting agency or the profession exist as the prime arbitor in the accountability issue.

The Current Status of Differentiated Staffing

Differentiated staffing was first implemented in 1966. It received support and endorsement under the Education Professions Development Act of 1967 and had by 1971 influenced education in Canada and the United States. There is abundant evidence that the DS concept has effected change across the continent. In the 1971-72 school year seventeen DS projects in thirteen states were funded by the U.S.O.E. Tillotson (1970) reported that over two hundred school districts had implemented some aspect of DS by the end of 1969. The degree of participation of individual districts varied from one school in the city of New York to all thirteen schools in Cherry Creek school system in Colorado. Frinks (1972) described how the State of Florida committed itself to a master plan for more effective staff utilization; in large measure influenced by DS projects in three Florida counties.

After almost six years of field operation, the development of the DS concept can be viewed with some clarity. Sharpes (1972) said, "The federal investment hauled staff differentiation, kicking and screaming, into the 1970's. It

is up to the profession to sustain it to full maturation [p. 63]." Acceptance of the DS concept by educators varies. Temple City has continued its operation of differentiated staffing since 1966 with considerable modification of the original model. English (1970) described the chief strength of the Temple City model as its ability to be malleable within the original guidelines of 1965. This flexibility was credited as the main reason for continued acceptance of DS in Temple City.

A number of recent studies of differentiated staffing have been undertaken in the form of doctoral dissertations. Two major areas of investigation are evident. One group of studies (Sadler, 1971; Sharpes, 1969; Pillot, 1970; Chamberlain, 1970; Butterfield, 1971) undertook the design of DS models. A second group (Evans, 1970; English, 1971; Rottier, 1971; McKay, 1971; Olson, 1971) gave considerable attention to researching the acceptance of the DS concept. The central concepts identified by those concentrating on analysis and the design of models are described later in this chapter. The findings of the latter group present a fairly clear picture of the attitudes of practising educators towards the DS concept.

Acceptance of the DS concept. Evans (1970) surveyed thirty-five high schools throughout the United States. He

administered a questionnaire soliciting reactions to thirty concepts central to DS to three groups: a "naive" subgroup who had no experience with DS; a group "of planning educators" who had at least one year in preparing for implementation of DS; and a group of "tried successful educators" who had established DS in their schools. Evans found that extreme differences in attitude were evident between those involved at different stages of staff differentiation. He found a marked decrease in negative attitudes as commitment to the concept increased from the naive to those at higher levels of involvement. Evans also reported some evidence that DS participants tended to be a somewhat younger group than the average staff.

English (1971) conducted a study of teacher attitudes towards staff differentiation using teachers involved in DS projects in five states. Rottier (1971) completed a somewhat similar study of teacher satisfaction with organizational expectations of DS, but he surveyed a random sample of DS participants and a control group of non-DS teachers. In spite of differences in the research design and data gathering instruments, both studies concluded that: males were generally more responsive to staff differentiation than females; secondary teachers were more positive toward DS than elementary teachers; and the extent of satisfaction with and acceptance of DS tended to decrease with the age, training and length of

experience of respondents. The congruent findings of these two studies clearly indicated that sex, age, training, experience and the level of teaching responsibilities were factors in the receptiveness of educators to various staff utilization practices.

DS and the administrator. McKay (1971) and Olson (1971) conducted research particularly pertinent to this study. Both studies surveyed principals' perceptions regarding administrative implications of DS. It is interesting to note that McKay and Olson both reported a need for professional teacher organizations to be involved in the planning of DS projects.

McKay surveyed a random sample of Indiana principals not involved in DS to determine their reactions to DS. He found that principals responded in a fairly consistent pattern strongly favoring the implementation of experimental models of DS in Indiana schools. Principals did not feel that teachers would be in favor of DS but they did expect that the concept would permit the principal to remain as the instructional leader in the school.

In contrast to McKay's study, Olson (1971) conducted his research in Utah schools utilizing DS. In his study of the team leader role, Olson surveyed 115 subjects including sixteen principals. He found that DS did effect changes in the principal's role; that team-leaders did perform a considerable number of instruction-centered administrative-

supervisory duties, and that there was a marked disparity in perception of the principal and team leader with regard to the role of the team leader.

An overview of the preceding four studies suggests that teachers and principals responded favorably to the DS concept. Educators lacked information and understanding about the DS but upon explanation of the concept they reacted positively. There was evidence to indicate that DS did affect the role of the principal.

DS and professional groups. The acceptance of the DS concept by organized groups of professional educators is a prime determinant in the success or failure of DS projects. In the absence of research data an overview of the literature revealed the existence of clearly stated positions. A change in attitude towards DS over the six year history of the projects was also discernible.

The National Education Association (NEA) was initially receptive to the DS concept. The National Commission on Teacher Education and Professional Standards of the NEA at first openly endorsed staff differentiation by sponsoring conferences on the subject and by publishing numerous position papers outlining the potential of DS. The Association of Classroom Teachers (ACT), the largest division of the NEA, responded more conservatively. In 1968 it passed ACT resolution 1968-25 dealing with differentiation of teaching

assignments, whereby it urged classroom teachers to study the differentiation of roles, to identify issues and problems relating to teachers, and to seek solutions that would continue to meet the needs of teachers and children. In 1969 ACT, although still cooperating with the development of staff differentiation, noted a number of unresolved issues and cautioned its members, "If teaching is the primary function of the teacher and some status is so closely related to remuneration in today's society, can any plan be successful if it is implemented on the basis of the hierarchy described in most differentiated staffing plans (ACT, 1969)."

By July, 1971, the enthusiasm of the NEA for DS had waned to the extent that it adopted a resolution saying that it:

. . . believes that although differentiated staffing programs may offer hope for positive and real innovation in the future, they are subject to potentially serious abuses and shortcomings that are not in the best interests of students, teachers, and the public (Richard, 1971, p. 72).

The American Federation of Teachers (AFT) position has consistently been in full opposition to the differentiated staffing concept. Robert Bhaerman (1970), AFT Director of Research, prepared a study guide on DS which clearly stated the AFT opposition to DS. Bhaerman's work reinforced the statement of David Seldon (1968) made a year earlier when Seldon spoke on behalf of the AFT saying that:

Improvements sought by organized teachers are possible within the present structure (emphasis mine) without major alteration of prevailing tables of organization except, perhaps, for a bit of team-teaching here, and restricted use of paraprofessionals there (Seldon, 1968, p. 13).

English (1972) in examining the reaction of professional association to DS, asserted that the central issue of conflict related to the concept of a teaching hierarchy. He stated that differentiation was a natural process of organization building. English drew upon Blau and Scott's (1962) typology of organization and concluded that teachers' associations met Blair and Scott's criteria for a natural benefit association. English concluded that vertical differentiation and the career ladder concept of DS countered the control mechanism of teacher associations and placed in jeopardy the group solidarity and informal cohesiveness of the group. This point of view was reinforced by Robert Bhaerman's (1969) statement made to the AFT regarding DS, that, ". . . teaching is not competitive. It is a cooperative and communal effort, and so it should remain. Nothing must be injected to create divisiveness [p. 9]."

A report of the federal role in promoting differentiated staffing by Donald Sharpes (1972) and statements regarding federal support made by English (1972) indicated that after three years of federal funding, the Office of Education altered its course of direct and aggressive

promotion of differentiated staffing. Current support is less concentrated and more indirect.

Olson (1971) stressed that there should be broad participation of all groups, particularly teacher associations, in the implementation of DS plans. The need for such cooperative action was generally recognized by the proponents of DS. The insistence for such cooperation was clearly underlined by a 1969 NEA resolution, cited by Edelfelt (1970), which stated:

The Association insists that any design for differentiating staff, to be successful, (a) must meaningfully involve classroom teachers and the local associations from the initial stages of development through implementation and evaluation. . . .

The Association urges local associations immediately to initiate in depth studies of the many ramifications of differentiated staffing, to be prepared to act in full partnership with the administration in the design of any plan and to reject any plan not developed cooperatively (Edelfelt, 1969, p. 79).

Emerging concepts. Preceding sections of this chapter have reviewed the background and emergence of DS, theoretical bases of the concept, the development of various DS models, and the response of professional associations to this approach. A definition of DS was presented in Chapter 1 and the concept was expanded in preceding sections. A concise overview of salient characteristics of current thinking about DS as indicated by the literature is presented here. The primary purpose of doing so is to surface those variables which the

literature presents as having major implications for the administrator.

The area most affected by the DS movement has been the role of the teacher. Olson (1971) identified three general categories within which change in teacher role has occurred: (1) increased power and prestige; (2) increased effectiveness in instruction; and (3) improved career opportunities.

Advocates of differentiated staffing (Allen, 1967; English, 1969; Caldwell, 1970; Cooper, 1972) viewed the admission of teachers to the decision-making process of the school as a means, within the DS concept, of providing the teacher with professional power and integrity. The continued existence and acceptance of the Academic Senate in Temple City is cited as visible evidence of increased participation of teachers in decision-making.

English (1970) described the "fluid hierarchy" operating in Mesa, Arizona, in which roles and vertical differentiation were contingent upon current needs and evaluation of teachers by their professional peers. Like Temple City's "Senate" the concept of "fluidity" developed in Mesa, Arizona, illustrated the increased involvement of teachers in administrative-instructional decision-making.

The issue of increased teacher effectiveness is central to the DS concept. Lieberman (1960) said that

differentiation would, "provide for a higher level of technical competence within the school [p. 96]." Ryan (1967) said that DS, "attempts to maximize the capacities and abilities of the staff while minimizing their areas of weakness [p. 4]." English (1969) viewed DS as a means of remediating the generalist teacher's unmanageable role by modernizing the teacher's role through dividing it into more specialized components and matching teacher skills to student needs. The predominant claim for DS was the assertion that teacher competence could be utilized to a much greater degree than under the traditional school organization.

A third major claim was that career opportunities were enhanced by DS. This enhancement was attributed to the professionalization of teacher role by employing paraprofessional staff to free the teacher of low level clerical and supervisory duties, and the increased opportunity for advancement presented by the "career ladder." The use of paraprofessionals was advocated by Lieberman (1960) and Trump (1961) and widely promoted by Edelfelt (1967), who developed the idea of "The Teacher and his Staff." The use of paraprofessional staff and the team concept are not unique to DS but they have been integral aspects of all DS models.

Several recent studies (English, 1971; Rottier, 1971; Plantz, 1971) presented evidence that role differentiation with accompanying salary variations contributed to teacher

retention, particularly among males who have traditionally left teaching earlier and in greater numbers than women. The increased career opportunities presented by DS were not attributed only to status or monetary considerations. Allen (1967) noted that promotions in education were generally away from children. The opportunity for greater job satisfaction presented by DS has been demonstrated, even though organizational problems remain a serious handicap. The combination of opportunity for advancement, the knowledge that promotion need not lead away from the chosen profession of teaching, and the increased professional responsibility and participation in decision-making contribute to job satisfaction. There is increased evidence in current literature that the motivational theories advanced by Herzberg and Maslow have influenced staff differentiation.

Writers dealing with DS generally agreed that personnel utilization and differentiation of roles demand consideration of the total educational system. Examination of DS project reports and proposals indicated an increasing awareness of general systems theory. Literature emanating from projects in Florida, Mesa, Arizona, and Beaverton, Oregon exhibited this trend toward systemic thinking by repeated mention of "needs assessment" as a basis for planning.

The systems view is not new to DS. Joyce (1967) presented the idea of "man-machine" systems in his 1967

publication, Man, Media, and Machines. Analysis of DS models revealed that staff utilization plans generally assumed a systemic interdependence of elements within the school as a system. This being the case the principal was in dynamic interaction with the staff; if not by design, then by consequence.

The Principal's Role in the Context of Differentiated Staffing

Historically the role of the principal has been one of inspection and supervision. Saxe (1968) traced the evolution of the principalship from the emergence of the head teacher in the nineteenth century, through the development of the "unified principalship" to 1900 when most large city principals were freed of teaching duties. Saxe related how the autocratic principal of the early twentieth century was influenced by the Progressive Movement to become an educational practitioner. Current administrative theory tends to emphasize communication and interaction. The influence of men such as Andrew Halpin (1966) and Jacob Getzels (1958) has effected recognition of the need for principals to work cooperatively with staff, students and community. Current trends support an evident shift towards participative styles of educational administration.

Gouldner (1954) characterized an organizational structure with competency as a basic criterion rather than reliance upon power inherent in a job title. Likert (1961) and Bennis

(1966) also advanced theories which emphasized situational variables and human interaction to promote the concept of shared decision-making within organizations. The literature clearly demonstrates the prominence of this school of thought. The educational situation is subject to the egalitarian implications of a common profession, where levels of professional training often contradict the superior-subordinate relationships of the formal structure of the organization.

The teacher-administrator relationship. Differentiated staffing, by seeking change both in the traditional hierarchy of the school and in the reward system, has visibly affected the role of the principal. English and Zaharis (1970) drew a number of conclusions regarding the DS principal. They stated:

(1) That the present role definition of the principalship is changing, both by a shifting base of teacher expertise and through militant teacher action by bypassing middle management levels in negotiating agreements with the Superintendent and the Board;

(2) That the present or traditional role of the principal is obsolete because it rests on the assumed validity of the teacher's role at the base of the pyramidal organizational structure; teacher need for self-governance challenges the authority base of a structure which was founded on an unprofessional view of the teacher (English and Zaharis, 1970, p. 11).

The view presented by English and Zaharis was typical of much of what the literature dealing with DS had to say about the changing role of the principal. Saxe (1968) said, "the day of the autocratic administrator is rapidly disappearing

in education, and his demise is being hastened by today's militant teachers [p. 96]." The literature suggested that it was not only the issue of shared decision-making which demanded consideration, but that the lack of congruence in teacher-administrator perceptions was also an important variable. If decisions were to result from a collegial situation, the inclinations and predispositions of the individual participants and the congruence of the perceptions at various levels of the existing hierarchy demanded consideration.

Shared decision making. The demand for participative decision-making is relatively new to education, but evidence of such demands is not. Sharma (1955) in studying the relationship of teacher job-satisfaction and their participation in decision-making found distinct divergences existing between teacher expectations and their actual participation in decision-making. Bridges (1964) examined the relationships between elementary school teachers and principals and found that principals who involved teachers in decision-making were preferred. The proceedings of the 1966 NEA convention demonstrated that teachers clearly desired full participation with administrators in determining school policy. The desire for participative decision-making and the need for such a process were evident long before the advent of the DS movement.

The congruency of teacher-administrator perceptions and the consequent implications for collegial decision-making

are significant. Lee Thayer (1968) pointed out that the congruence of perceptions of persons was the critical aspect in communication and that communication is basic to decision-making. A number of recent studies which examined the working relationships of teachers and administrators present conclusions pertinent to this study.

Otto and Veldman (1966) examined the relationships of 684 teachers and 38 principals and concluded that principals and teachers did not use a common frame of reference for their relationships to each other, and that they saw decision-making from dissimilar vantage points. Olson (1971) found "broad disparity in perception of the prime responsibilities of the role especially between principals and team leaders [p. 188]."

Glen Eye (1966) based a study on the thesis that the extent of congruence of perceptions among teachers and administrators was related in a positive manner to the incidence of planning for instructional change. Eye concluded that the relationship between the extent of congruence in staff perceptions of decision-point location was not significantly related to production or implementation of decisions.

Johansen (1967) investigated the relationships between teacher's perceptions of the sources and types of authoritative influence in decision-making and their subsequent implementation of the resultant decisions. He concluded that

teacher participation in decision-making irrespective of perceived influences increased the likelihood of implementation.

The apparent contradiction of the findings of Eye and Johansen needs to be examined in the context of organizational structure. An earlier study by Boyan (1956) examined teacher role in decision-making within the organization. Boyan presented two structures for the teacher's role in decision-making; one involved the participation of teachers as members of intra-school associations and a second structure encompassed the teachers as collegial equals in organizational decision-making. He concluded that the greater the degree of a teacher's role in decisions influencing the course of his own career development, the greater the amount of effort extended by that teacher. Boyan's conclusion, like that of Johansen, suggested that the participatory role itself was significant to teachers rather than the actual decision point or degree of administrative influence. Boyan's reference to the positive effects of participation of teachers in decisions affecting career development bears a marked resemblance to statements made by proponents of differentiated staffing.

The amount of research dealing with teacher-administrator relationships within DS settings is limited. Moore (1967) compared the role and function of teachers and principals in team-teaching situations with regard to decision-making. He

concluded that team-teaching has produced changes in role and function of principals and teachers. Moore suggested that teachers would assume responsibilities for decisions that were formerly the responsibility of the principal and concluded that principals would have to be prepared to delegate to teachers the authority to make these decisions, irrespective of their personal assessment of the teachers.

Sadler (1971) surveyed 416 teachers in schools with differentiated staffing. In response to a question concerning major decisions about curriculum, 71 percent of the teachers indicated that they were able to make these decisions, and 81 percent felt that the quality of the decisions was better under a differentiated staffing structure. Sadler also reported that teachers indicated that although they were more involved in decision-making, that DS would not lessen the need for the principal.

Principals' expectations of differentiated staffing.

The views and expectations of principals not involved in DS were surveyed by McKay (1971). In a study based upon 300 randomly selected Indiana principals McKay found that:

Three-fourths of the participants agreed that under the differentiated staffing concept, the role of the school principal would need to be redefined, and over one-half of the principals agreed that differentiated staffing would require the entire reorganization of the schools. Nearly seventy percent disagreed with the idea that differentiated staffing conflicts with present administrative theory which designates the

principal as instructional leader. Participants were equally split on their responses pertaining to the component of differentiated staffing that decentralizes decision-making (McKay, 1971, p. 63).

Eight out of ten principals reported a scarcity of published information about DS and expressed the need for measures to rectify this situation.

The literature and research findings clearly indicated that principals and teachers did not share a common perspective and that a DS pattern which introduced a process of participative decision-making would both surface these differences and effect changes in the principal's role.

The role advocated for the DS principal. Although there is little empirical data or research evidence available, the role of the principal in the context of DS is predicated by the literature. Observations made by practitioners involved in DS generally parallel theoretical articles descriptive of the role of the DS principal.

Arthur Eve and Roger Peck (1972) spoke of filling leadership positions within DS situations with educational statesmen who view themselves as amateur administrators and professional educators. The role advocated for the DS administrator by Eve and Peck is described as:

Viewing administration as a tangential and almost incidental supplement to the real task of leadership in restructuring public schools, and by forcing leaders (whether from the ranks of teaching, school administration or elsewhere) to refocus their attention and energies as they emerge into leadership positions, a new hierarchy

may emerge. Within this hierarchy the managerial perspective would exist primarily as a support mechanism for a variety of instructional tasks within the school system (Eve, 1972, p. 95).

Eve and Peck pointed out that in performing the administrative roles of evaluator, helper, integrator and designer, the administrator assumes himself to be the upper half of a subordinate-superordinate relationship. They contend, as do Edelfelt (1967) and English (1969), that such an assumption will inevitably come into conflict with the expanded role of the teacher in DS situations. The view that differentiated staffing patterns have already transformed existing administrative roles within the educational hierarchy is shared by numerous writers (Edelfelt, 1967; Hair, 1968; English, 1970; Caldwell, 1970; Olson, 1971).

Olson (1971) saw the new concept of the principal's role as:

. . . one in which authoritarian and paternalistic attitudes, said to have characterized bureaucratic administrators of the past, are to be replaced by deep convictions of the value of democratic processes and highly developed interpersonal skills. While the principal's legal accountability will probably remain unchanged, his authority will be diffused throughout the professional staff; and his primary resource will be, not unilateral decision-making ability, but high level competence as a social manager (Olson, 1971, p. 41).

Edelfelt (1967) presented the concomitant implications for teachers in saying that:

. . . many teachers in new organizations will have administrative and supervisory responsibilities which had formerly only been the jobs of principals and supervisors (Edelfelt, 1967, p. 11).

The literature presented abundant evidence that teachers and administrators found themselves in collaborative situations in DS situations, thereby placing greater demands upon the interpersonal skills of the administrator. English (1969) presents the theoretical basis for such an approach by referring to Likert's (1961) "interaction-influence-system" and by drawing upon Likert's concept of "linkage" where overlapping roles within a hierarchy provide a basis for more effective communication, increased morale, and greater cohesiveness.

The realization of such an integrated decision-making structure was achieved in the Temple City DS project. Reports by administrators and teachers indicated that the Academic Senate created in Temple City did promote participative decision-making and had a major effect upon the role of the principal. In an account written of the five years of differentiated staffing in Temple City, English (June, 1970) reported:

It was apparent that the concept (DS) would clash with the traditional notion of the authority of the principal. Therefore the project designers undertook an overhauling of the traditional concept of the school principal. It was decided to equate the Senior Teacher in authority and pay to that of the principalship, and to place them together at the school level in an equal and collegial relationship, giving each the same basis of formal authority in the concept of the Senate (English, 1970, p. 11).

The principal's functional role was clearly stated as administering and implementing the decisions of the Senate. The

Senate, which included the principal, was directly responsible to the Superintendent. The role of the principal became that of executor of the School Academic Senate, thereby transforming the administrative structure to include the teacher as a formal partner in the decision-making process.

The influence of the Temple City DS project upon other projects was evident. It was clearly structured as a career ladder to provide organizational incentives to teachers, as they advance professionally. Its structural implications effected a participatory process which had a major impact upon the entire organization. In a report entitled, Synthesized Description of Distinct Features, Temple City Differentiated Staffing Project (1971), the following statement was made in regard to redefinition of administrative roles:

As a direct result of diffusion of decision-making through the formation of Academic and District Senates, and concepts such as mutual involvement in evaluation of colleagues by teachers, the roles of administrative personnel have changed drastically. The creation of differentiated teaching staff requires that a principal, in order to be successful, becomes a successful instructional leader. Expertise in group dynamics is crucial to effective leadership in Senates and staff committees when autocratic leadership methods are not tolerated (Temple City, 1971, pp. 11-12).

Similar positions were presented in reports emanating from two other DS projects. Frinks (1969), in a report dealing with Florida projects, stated that "in order to become effective, a DS pattern must include significant administrative changes [p. 5]." In another section dealing with the

decision-making process he stated, "the merits of moving from a 'work for' situation to a 'work with' relationship between administrators and other school personnel [p. 5]." English (1970), after directing the Temple City project, and while project director at Mesa, Arizona, concluded that:

The authority base of the principalship (must) move from a legitimized line position, to one based upon competence and expertise in a more collegial setting where teachers are recognized as peers rather than subordinates (English, October, 1970, p. 12).

Project reports reported identifiable changes in the role of the principal. Such changes tended to be related to structural modification of the school's organization intended to involve teachers in instructional decision-making.

A recent comprehensive study by Olson (1971) focused upon the role of the team leader in DS situations. Olson found that team leaders had made a strong incursion into the realm of school administration. The area of the team leader's administrative-supervisory activity was almost exclusively limited to the instructional area.

The role reported by the DS principal. Principals of differentiated schools were interviewed by Olson and asked the question: What changes do you think have been brought about in your role as principal as a result of having team leaders on your staff? Olson (1971) reported six general observations pertaining to change in the role of the principal:

1. Most principals felt freed of numerous minor responsibilities and now were able to better attend to other more important areas.

2. Differentiated staffs were viewed as a sensitive structure requiring the principal to sharpen his managerial and personnel administration skills.

3. Differentiated staffing dispersed the decision-making function over a wider area and required principals to refine those skills needed to function under conditions of decentralized decision-making.

4. Principals reported the need to become a "systems builder" and to develop their abilities to implement designs through their staff.

5. Differentiated staffing required that the principal re-think his own role.

6. Role changes were attributed to broader influences such as teacher activism and increased professionalism which projected teachers more directly into the decision-making process of the school.

Although Olson's research did not focus directly upon the principal, it did contribute much needed data regarding the impact of staff differentiation upon administrative personnel.

Summary

This first phase of this study attempted to consolidate the literature pertinent to DS and to focus particularly upon implications for the DS principal.

The literature revealed that differentiation of the educator's role was first evident in the evolution of special administrative and supervisory personnel. Differentiation of the teacher's role was foreshadowed by the emergence of team-teaching and the increased use of supportive non-professional personnel. The increased emphasis upon individualization of instruction and continuous progress were also presented as contributors to the emergence of the DS concept.

The concept of DS and the models designed to achieve differentiated staffs illustrated that the basic characteristic was flexibility--of structure, utilization of resources, space and time; policy, and of the administrative process.

Differentiated staffing was purported to improve the quality of instruction through achieving more efficient utilization of teacher talent. The philosophical basis for the numerous projects was first presented by Lieberman, and developed by men such as Allen, Edelfelt, and English. A review of the literature demonstrated that there is no one definition or specific description of DS. It is a perspective; a broad systemic, performance-oriented approach to the utilization of educational manpower. Analysis of DS projects indicated that models were generally "site-specific" and that

the emphasis has increasingly become one of creating relationships between teacher and student, teacher and administrator and professional and paraprofessional which serve to promote the betterment of instruction and better career opportunities for the staff. Writers were consistent in stating that it was the process effected by DS rather than the structure created which mattered.

The issue of power and authority and the disparate perceptions of teachers and administrators were central to a great deal of debate in the literature regarding the hierarchical relationships of DS. Although shared decision-making was viewed by some writers as an issue not critical to staff differentiation the literature clearly indicated that any appreciable change in the school structure did bring the issue to the fore.

Chapter 3

Research Procedures

The nature of this study required that investigation of the role of the principal in a DS situation proceed in two phases. Because differentiated staffing was comparatively new and the concept not yet clearly defined, a summary review of the literature was undertaken as the initial phase of this study. The material gleaned from the literature was selected primarily in terms of the implications DS presented for the principal's role.

A survey of principals' perceived role within the context of DS constituted a second phase of the study. Execution of this second phase required the development of a research instrument which would generate data regarding the principals' role. The ultimate purpose was to determine the nature of the DS principal's (DSP) perceived role, and to compare it to the perceived role of the non-DS principal (NDSP). The found differences or similarities were examined and interpreted in the context of what the literature predicated as the role of the DS principal.

This chapter will outline the manner in which the review of the literature was conducted and will describe the development of the Administrative Task Inventory (ATI) which

served as the research instrument. The procedures of statistical research will be described by outlining the selection of research subjects, the collection of data and data processing. A general treatment of factor analysis, which constituted the statistical technique utilized in this study, will also be presented.

Research in the Literature

A comprehensive review of the literature was initiated in February of 1971 when this study was undertaken. Differentiated staffing served as the topic for research projects undertaken by the writer in two graduate courses during summer and fall of 1971. Initially, attention was focused upon the periodical indices, ERIC, Research in Education and other traditional sources for academic research. All available materials were collected on xeroxed copy, microfiche or microfilm to provide a complete collection of materials for the purpose of editing, identifying trends, and to detect recurrent thinking. As dissertations dealing with DS became available they were added to this collection. The National Cluster Coordinating Center at Mesa, Arizona provided a great deal of information including reports, papers and unpublished articles and position statements prepared by participants in DS projects.

The development of a comprehensive working bibliography, cross-referencing of existing bibliographies and the examination of sources footnoted or referenced in recent articles

and dissertations formed the basis for determining the ultimate scope of the review. The revision and republication of papers and articles by experts in the field such as English, Allen, Sharpes, Frinks and others indicated how component elements of DS were undergoing change and how the DS concept was maturing. Although there was a tendency to rely upon the reports and observations of the most active and articulate writers, a conscious attempt was made to also review and analyze the contributions and evaluations of less visible writers and critics.

The material emanating from the review of the literature was presented in Chapter 2. Major concepts will be presented again in Chapter 4 as they pertain to research findings.

Development of the Research Instrument

When this research was first undertaken, there was no appropriate instrumentation available for such a study of differentiated staffing. Since this study focused upon the role of the principal in DS, it was found that questionnaires used in general role studies of the principal were not suitable for this specific purpose. A search revealed that a number of people were investigating DS, but that their questionnaires treated the broad scope of the concept and focused upon the teacher rather than upon the administrator. Two such

instruments were a semantic differential technique for measuring acceptance of the DS concept developed by George Evans (1970) at the University of Tennessee, and a questionnaire to assess teacher attitudes towards DS, developed by Fenwick English (1971) at Arizona State University. Neither instrument was deemed appropriate for the purposes of this study.

Two questionnaires which contributed to the design of a research instrument were ultimately located. The first, an inventory of 282 educational tasks, developed by The Center for Vocational and Technical Education at Ohio State University provided a valuable source of validated sub-test items. The Ohio questionnaire, called the Educational Task Inventory (ETI) was reported by Pratzner (1971) as having been developed over a period of three years in conjunction with the Human Resources Laboratory at Lackland Air Force Base in San Antonio, Texas. Pratzner stated that, "workers who have completed the inventories on two occasions gave essentially the same information both times, and split-half correlations on the inventories of .95 to .99 have been obtained for Air Force personnel [p. 11]."

The ETI was developed for a study of staff differentiation in a vocational-technical setting. The 282 pedagogical task items of the inventory included a number of technical tasks not applicable to the public school. The ETI data was analysed by "automated job clustering" programs, which

generated clusters of tasks approximating job descriptions. This process was not adversely affected by repetition, duplication, or overlap of individual task descriptions in the instrument. The vocational-technical items and the repeated items were eliminated by editing the ETI. For purposes of this study the number of items was reduced to 73 as indicated in the following section. The format and the scaling used in the Ohio ETI are illustrated in Exhibit I. Format and scaling were modified to more adequately meet the requirements of this study.

A second questionnaire developed by Willard Olson (1971) at the University of Utah for use in a study of DS, was located after the Administrative Task Inventory (ATI) which was used in this study, had been developed. Olson developed a 72 item questionnaire to study the team leader role in DS. The rationale underlying the development of Olson's instrument, the School Task Analysis Schedule (STAS), was developed from the literature dealing with DS. Like the ETI developed in Ohio, Olson constructed a series of task descriptions, placed them in categories and surveyed the respondents reported performance of these tasks. A sample page from the STAS is presented in Exhibit II to illustrate the format and scaling used by Olson.

Exhibit I

Extracted from the Research Instrument Packet, April 1970
developed by the Center for Vocational and Technical
Education, Ohio State University, April, 1970

SCHOOL ID. _____

RESPONDENT ID. _____

EDUCATIONAL TASK INVENTORY		Page <u>2</u> of <u>15</u> Pages	
LISTED BELOW ARE A DUTY AND THE TASKS WHICH IT INCLUDES. CHECK ALL TASKS WHICH YOU PERFORM. ADD ANY TASKS YOU DO WHICH ARE NOT LISTED, THEN RATE THE TASKS YOU HAVE CHECKED.		CHECK	IMPORTANCE
		1. Very Much Below Average	1. Very Much Below Average
		2. Below Average	2. Below Average
		3. Slightly Below Average	3. Slightly Below Average
		4. About Average	4. About Average
		5. Slightly Above Average	5. Slightly Above Average
		6. Above Average	6. Above Average
		7. Very Much Above Average	7. Very Much Above Average
B. CLERICAL AND MAINTENANCE			
1. Analyze and Utilize Cooperative Training Statistics			
2. Arrange School and Work Schedules for Co-op Students, Faculty and Employers			
3. Compile, and Distribute Cooperative Training Statistics			
4. Compute Grades			
5. Correct Equipment Malfunction			
6. Diagnose Equipment Malfunction			
7. Inventory Course Supplies or Materials			
8. Maintain Academic and Accountability Records of Students			
9. Maintain Administrative Files such as Personnel Records			
10. Maintain Class Attendance Records			
11. Maintain Files of Instructional Materials			
12. Maintain Records of Costs per Student Hour of Instruction			
13. Maintain Student Placement Records			
14. Maintain Student Progress Reports			
15. Monitor Repair of Instructional Aids			
16. Obtain Laboratory Equipment for Students			
17. Perform Routine and Preventive Maintenance on Tools and Equipment			
18. Record Test Scores and Grades			
19. Reproduce Instructional Material through Photographic and Mechanical Processes			
20. Requisition Office Supplies or Equipment			
21. Review Application Forms for Accuracy and Completeness			
22. Review Test Results to Evaluate Test Items			

Exhibit II

SCHOOL TASK ANALYSIS SCHEDULE

This schedule is designed for use in examining the roles of professional education personnel working in elementary schools. It is intended to reveal likenesses and differences among the various assignments that school workers perform. The value of your responses is determined by the accuracy of your powers of estimation. To make estimating easier for you, three units of time are provided. You may choose whichever one of the three seems most appropriate for each individual item.

Instructions

Indicate how often you perform the tasks shown on the following pages or tasks very similar to those shown. For each item, select the unit of time---week, month, or year---which is most appropriate and indicate as accurately as you can how many times in that period you typically perform that task. Check the "Not At All" column if you never perform the task.

EXAMPLES

Task	Times per Week, Month, Year, Not at All		
1. Reproducing printed material.	<u>7</u> times per <u>week</u>	_____	_____
2. Designing or producing audio or visual media	<u>3</u> times per <u>month</u>	_____	_____
3. Preparing releases for community or professional news media	<u>1</u> time per <u>year</u>	_____	_____
4. Interviewing prospective employees	_____ times per _____	_____	<u>X</u>

Please note. You will find some items in which the task appears to be perpetual or on-going. In such cases, express your performance of the task in terms of work sessions or blocks of time devoted exclusively to the task in a given period of time.

TURN TO THE NEXT PAGE AND PROCEED

(Olson, 1971, p. 226)

Although the questionnaire developed by Olson was not available for reference during the construction of the instrument used in this study, it did serve to substantiate the selection of content for the ATI. The thirteen categories in Olson's instrument are clearly represented by items in the ATI. The two instruments had a similar number of items: the STAS had 72, the ATI had 73. Subjective comparison of the two questionnaires indicated that the content of all 72 STAS items was covered in the ATI; that 52 STAS items described tasks similar to individual ATI items and that the ATI contained six tasks not treated in Olson's questionnaire. The questionnaire developed by Olson provided an outside source of comparison to indicate that task items important to a survey of DS had not been omitted in the selection of sub-test items for the ATI.

The Administrative Task Inventory (ATI)

The research instrument developed for this study was constructed by combining sub-test task items selected from the Ohio, ETI with a limited number of items written especially for this questionnaire. Both the selection and construction of items was guided by consideration of the concept of differentiated staffing as expressed in the literature.

Selection of items. The selection of items from the Ohio inventory for use in the ATI was influenced by two

considerations: (1) the number of items in the inventory needed to be reduced substantially from the original 282, and (2) the items in the ATI needed to represent the broad spectrum of task performance of an administrator in a DS situation. The process of selecting items was one of: (1) deleting items peculiar to the vocational-technical institution; (2) editing or synthesizing items with obvious overlap or duplication, and (3) constructing items for areas pertinent to this study, but not represented in the ETI.

Computer printouts of the data generated by the ETI in the Ohio Diffstaff Survey were available. They provided the basis for deleting task items which had not elicited a sufficient response to indicate that they were performed by administrators. The ETI had been designed for use with the entire staff within a school so task items were written in terms appropriate to the various positions. Since the ATI was to be used only with principals, the duplication or multiple listing of items was eliminated.

A number of task descriptions were constructed to describe tasks pertinent to participative decision-making, an element basic to DS but not represented in the original ETI.

Scaling. The ATI, developed for this study was similar to the Ohio instrument in that it solicited responses pertaining to the time spent on tasks, and the importance attributed

to these tasks. The ETI used a seven-point Likert scale with a mid-point labeled "about average" and extremes labeled, "very much above average" and "very much below average" (see Exhibit I). Olson used the STAS questionnaire to determine how often during a given period of time a task was performed (see Exhibit II).

In developing the ATI, an attempt was made to generate data of a higher order than the ordinal data produced by the ETI. Guilford (1954) cautioned that cues must provide anchorages least susceptible to inconsistent interpretation. To this end, a single uninterrupted scale was used and the extreme points were labeled with the cues "NONE" and "ALL." Respondents were asked to indicate on one scale the amount of time they did spend on a task, and on another similar scale, the amount of time they felt they should spend on that task. The former was assumed to be an indication of perceived task performance, and the latter an indication of the perceived importance of the task. Respondents were instructed to consider each task independently and not to give any consideration to cumulative expenditure of a finite amount of time. The scaling was presented for each task as illustrated in Exhibit III.

Responses were converted to numerical data by measuring the point between NONE (0.00) and ALL (1.00) where a slash mark was placed by the respondent. It was assumed that values between 0.00 and 1.00, represented as two place decimal

Exhibit III

ADMINISTRATIVE TASK INVENTORY

Listed below are various tasks which might be performed by administrators. Rate each task by placing a slash mark (/) across the line at the point which best represents the proportion of time you wish to indicate. Consider each task independently. Cumulative totals are not tabulated. Add on the last page any tasks you do which are not listed.

TIME SPENT
Indicate how much of your time you
DO SPEND on each task.

IMPORTANCE
Indicate how much of your time you
think you SHOULD SPEND on each task.

None _____ All	1. Control Physical Environment (e.g.: Light, Ventilation, and Heat).	None _____ All
None _____ All	2. Develop Policies for Use of Facilities and Equipment by Non-School Personnel and Organizations.	None _____ All
None _____ All	3. Maintain Accounts and Records of Financial Transactions.	None _____ All
None _____ All	4. Prepare Work Requests (e.g.: Maintenance and Repair).	None _____ All
None _____ All	5. Write and Edit Correspondence, Records, and Reports.	None _____ All
None _____ All	6. Confer with Administrative Staff to Determine Personnel Requirements.	None _____ All
None _____ All	7. Prepare Budget.	None _____ All
None _____ All	8. Inventory and Maintain Records of Supplies or Materials.	None _____ All
None _____ All	9. Maintain Administrative Files.	None _____ All
None _____ All	10. Maintain Student Progress and Placement Records.	None _____ All
None _____ All	11. Arrange for Repair of Instructional Aids and Equipment.	None _____ All
None _____ All	12. Score or Record Test Scores and Grades.	None _____ All
None _____ All	13. Requisition Supplies or Equipment.	None _____ All

numbers, provided interval level data. Such an interpretation was supported by Guilford (1954) when he stated, "accepting the assumption that (a respondent) can keep his intervals psychologically equal, we accept the category values as interval-scale values and treat them statistically as such [p. 204]."

Directions and format. The introduction of a new method of scaling and the consequent development of a new set of directions made pilot testing of the ATI necessary. A number of questions required consideration: Were the directions clear? Would respondents treat items individually or would the cumulative effect of indicating that they spent time on items effect lower ratings on subsequent items? What format influenced respondents to give separate attention to ratings of actual time spent, and importance of an item?

A preliminary draft of the ATI was administered to sixteen graduate students to determine the clarity of the instructions and to detect any cumulative effect of the "none-to-all" scale. No instructions other than those provided in the questionnaire were given. No difficulty with the questionnaire was detected or expressed, other than comments suggesting that the items be less crowded, and that the specimen examples appear on a separate page. Revisions were made to this effect. No concern was expressed about the "none-to-all" cues and no cumulative effect was evident

in an analysis of the responses either in the pilot studies or in this study.

The revised draft of the ATI was prepared in two trial formats: one had each task item followed by the two scales, and the other had the two scales on opposite sides of the page separated by the task item. A trial draft including both formats was administered to a graduate class of fourteen doctoral students. No difficulty with directions was expressed. Observation of the group indicated that greater deliberation was required by the format where scales were on separate sides of the task items. Upon questioning, respondents indicated that they could better relate to the two scales if they were separated by the task items. The separated-scale format was incorporated into the final draft of the ATI.

Research packet. The research packet consisted of the 73 item ATI questionnaire, a cover letter from the researcher, a letter of endorsement for the study from the National Cluster Coordination Center for DS Projects, and a printed business reply envelope. The packet is included in appendices A, B, and C. The instrument was administered by mailing a personally addressed research packet to each research subject.

The Research Subjects

The research population for this study was drawn from school districts or systems cooperating with the School Personnel Utilization (SPU) projects of the USOE, Bureau of Educational Personnel Development. Criteria were developed for the selection of school districts and principals used in the study. The research population consisted of two groups of principals from within the selected school districts.

The school districts were selected for use only if they were participating in the USOE School Utilization Projects and had at least one school accepted and funded as a DS project under an EPDA grant. The listing of these school districts was procured from the National Cluster Coordinating Center for the seventeen SPU, DS projects. Lists of all principals in the participating school districts were requested from the directors of the individual SPU-DS projects. The school districts which submitted data for this study are listed in Appendix E.

The principals selected from the comprehensive lists of principals in the cooperating school districts were placed in two research groups:

1. The differentiated-staffing principal (DSP) group was comprised of all principals administering federally funded DS schools within the participating school districts.

2. The non-differentiated staffing principal (NDSP) group was selected by use of a table of random numbers (Dayton, 1970, pp. 379-383) from those principals remaining after the DS principals were extracted.

The NDSP group, which represented principals of schools not engaged in differentiated staffing, was taken from within the same school districts as the DSP group to ensure that job descriptions, policy and bylaws affecting job specifications would be constant for the two groups drawn from any district. Data from the respondents were pooled for each sub-test item and no attempt was made to identify or report data pertaining to individual schools or districts. The study encompassed seventeen projects where principals submitted data. Analysis and interpretation focused upon the DSP and NDSP groups as collective entities. The total SPU project was treated as a single research population.

Collection of Data

The research packets including the ATI were sent by first-class mail to the two research groups. A follow-up mailing consisting of a second copy of the ATI and an appropriate cover letter was sent to the DSP group two weeks after the first mailing. This was done to ensure as high a rate of return as possible from this group which constituted the major focus of the study.

The responses from the returned questionnaires were converted to numerical data. Each response to an individual task item, represented by a slash mark across the scale, was measured and a decimal value indicating its position between NONE (0.00) and ALL (1.00) was recorded. The converted data were punched on computer cards.

The general data pertaining to years of experience, size of school staff, student enrollment etc. were tabulated and are presented in Chapter 4.

Factor Analysis

This study was exploratory in that it sought the underlying characteristics of factors descriptive of the role of the differentiated staffing principal. The research instrument, the ATI, was comprised of seventy-three task items which served as subtests to measure the perceptions of the research population. Factor analysis was selected for the statistical treatment of the data because, according to Fruchter (1954), it is a technique for representing a large number of measurements, each made on many persons in terms of a smaller number of measures.

Thurstone (1947) in discussing the use of factor analytic techniques said:

Factor analysis is useful, especially in those domains where basic and fruitful concepts are essentially lacking and where crucial experiments have been difficult to conceive (Thurston, 1947, p. 56).

The overall approach in this study was to seek out and explore the relationship between certain variables and to describe characteristic patterns of behavior. In applying Harman's (1960) statement that, "a principal objective of factor analysis is to attain a persimonious description of observed data [p. 5]," it was assumed that factor analysis would serve to extract and identify a number of meaningful factors from a large set of measures of perceived role.

Factor analysis assumes that a variety of stated phenomena within a domain are related. Through the concept of correlation it attempts to "factor out" the underlying structure from the related variables.

The raw material for factor analysis consists of a table (matrix) of original measures. All possible intercorrelations of the variables are calculated and related to new composite dimensions or factors determined from the correlation coefficients. These factors are represented as clusters of variables with relationships expressed in the form of "factor loadings."

Halpin (1966) described the meaning of factor loadings and outlined the procedure used to identify factors:

The loadings (the numerical values, expressed as a correlation) which a given subtest receives on a particular factor shows to what extent that subtest measures the same type of behavior as is represented in a more general form by the factor itself. Whenever a subtest yields a high loading on a given factor, be it either positive or negative, that subtest can be viewed as a "good" measure of

the factor. Contrariwise, if a subtest secures only a zero loading on a factor, then that subtest obviously is not measuring the same thing as the factor presumably is measuring. In other words, the loadings tell us to what degree each subtest is saturated with each of the factors (Halpin, 1966, p. 156).

Researchers (Halpin, 1966; Fruchter, 1954; Williams, 1968) pointed out that in examining the content of the subtests which do load high on a given factor, the investigator must rely upon his understanding of the subtests to determine the fundamental way in which they are conceptually alike. It is by naming this similarity that the subjective interpretation of the researcher is applied to create the concept denoted by the factor.

Kerlinger (1964) commented on factor analysis as follows:

Factor analysis tells us in effect what tests or measurements can be added and studied together. . . . It thus limits the variables with which a scientist must cope. It also (hopefully) helps the scientist to locate and identify unities or fundamental properties underlying tests and measures (Kerlinger, 1964, p. 650).

The meeting of assumptions for any given statistical technique is always a critical aspect in research. Harmon (1960) stated with regard to factor analytic techniques that:

No assumptions are made about the statistical distribution of the variables. More precisely the correlations among the variables for a given sample are treated as if they were the true correlations in the population, ignoring statistical variation (Harmon, 1960, p. 16).

The Application of Factor Analysis to This Study

The factor analysis program applied in this study was from the System/360 Scientific Subroutine Package (360 A-CM-03X), Version 2 (1967). The data analysis and execution of the program were carried out on the UNIVAC 1108 digital computer of the University of Houston Computer Center.

The computer program which obtained the factors for both sets of data was a principal-factor solution using unities in the diagonals and constructed to yield a factor matrix consisting of factor-weight vectors associated with eigenvalues equal to or greater than 1.00. The criterion for determining the number of factors was developed by Kaiser (1963, p. 363).

The computer carried out a Varimax rotation of the principal factor matrices to minimize the number of variables on which any one factor loads. This process yielded the three rotated factor matrices presented in Chapter 4 as Forms A, B and C. Form A included the factors derived from sub-test data dealing with perceptions of actual time spent by the principals on the 73 administrative tasks. Form B included the factors derived from subtest data dealing with importance attributed to each of these 73 tasks. Form C consisted of a factor analysis of the 36 variables which had the highest correlation with the DS variable (V 73) on the correlation matrices of Form A and Form B. In all three forms discussion and analysis focused primarily upon the final rotated matrices (Form A, Form B, Form C).

The correlation matrices from which the factor matrices were derived are included in Appendix C. The resulting factors and the factor loadings of the variables determined by the Varimax rotation are presented in Chapter 4.

Guilford (1954) presents tables from which the significance of factor coefficients can be determined. Given 125 degrees of freedom and the correlation of any two variables, Guilford (1954, p. 564) indicates that a factor loading of .224 is significant at the .01 level. Harmon (1960) cautions that such tables represent gross approximations, hence these tables were used primarily to lend a degree of objectivity to an arbitrary choice of .300 as the minimum factor loading in the analysis of the rotated factors.

The completion of the second phase of this study required that the factor analysis of responses dealing with time spent on tasks (Form A) and the factor analysis of responses dealing with importance attributed to these tasks (Form B) be juxtaposed. This was achieved indirectly by the development of Form C from variables selected from the correlation matrices of Forms A and B. Thus, Form C served a double function; it brought together in one analytical process the "time" variables and the "importance" variables. It also presented a particular focus upon DS in that its 72 variables (36 pairs) correlated with DS in either Form A or Form B.

Form A and Form B both included the same seventy-three task items as variables. In both forms a seventy-fourth variable was added as the "DS variable" to indicate whether the respondent was a differentiated staffing principal (DSP) or non-differentiated principal (NDSP). The DSP respondents were assigned the highest possible rating of 1.00 on this subtest item or variable. The NDSP respondents were assigned a rating of 0.00. Form C consisted of 72 variables (36 pairs) and variable 73 was the DS variable. Consequently considerable emphasis in the analysis of Forms A, B, and C was devoted to the factor loadings of the DS variable when it was present in factors.

Summary

The two phases of this study consisted of a review of the literature dealing with the DS administrator and a survey by questionnaire and factor analysis of the role perceptions of principals in DS and non-DS situations. A research instrument, the Administrative Task Inventory, was developed and administered to all principals of federally funded DS schools and to a randomly selected control group of non-DS principals drawn from within the same seventeen school districts. The responses regarding time spent on, and importance attributed to 73 task items were converted to numerical data and subjected to factor analysis. The resulting factors were

interpreted and analyzed with regard to the implications of DS for the principal's role.

Chapter 4

Findings

This chapter consists of three parts. The first two sections entitled General Data and Factor Analysis present the findings of the survey undertaken as the second and primary phase of this study. A third section briefly summarizes the major concepts presented by the literature with regard to the DS principal's role. The review of the literature dealing with the implications of DS for administrators was presented in Chapter 2 and comprised the first phase of this study.

The first section of this chapter presents general data descriptive of the responding research subjects and their respective schools. A second section presents the factor analysis of the data collected by use of the ATI. Three sets of factors are reported. FORM A deals with factors derived from data representing time spent by the 126 responding principals on 73 administrative tasks. FORM B delineates the factors derived from data representing the importance attributed to these 73 tasks. FORM C presents factors derived from variables in FORMS A and B which correlated ($p=.25$) with the DS variable.

General Data

The ATI was administered by mail to individual members of the DSP and NDSP groups. All questionnaires returned within five weeks of the initial mailing date were processed. General information regarding the responding principals and their schools was extracted from the returned questionnaires. These data are presented in Tables 1, 2, 3, 4, 5, and 6. Percentages were included to provide a ready basis for comparison of the DSP and NDSP groups.

Questionnaires distributed and returned. The ATI, included in Appendix B, was administered to all 72 DS principals listed for the seventeen school districts and to 214 non-DS principals, selected by use of a table of random numbers, from the remaining principals in these same districts.

Table 1 illustrates the number of questionnaires distributed and returned. Approximately one-half of the 286 instruments were returned in time for processing. A higher proportion was returned by the DSP group (68%) than by the NDSP group (50%). Only one of the DSP instruments could not be used for factor analysis while fourteen incomplete or unusable questionnaires were received for the NDSP group. Fifteen questionnaires were received too late for processing.

Years of experience. The number of years experience as principal and years as a classroom teacher served by

TABLE 1
Number of Questionnaires
Distributed and Returned

Research Group	Number Distributed	Returned Questionnaires		*Incomplete or Late Questionnaires	
		Number	Percent	Number	Percent
DSP	72	49	68.0	6	8.3
NDSP	214	107	50.0	24	11.2
Total	286	156	54.5	30	10.4

*Note - Incomplete questionnaires were included in the presentation of General Data. Late questionnaires were not processed.

responding principals are presented in Table 2. The DSP group was characterized by less experience as principal. Twenty-one (47.7%) of the DS principals had five or less years of experience as a principal as compared to twenty-nine (29.8%) of the NDSP group. Only five (11.3%) of the DS principals had sixteen or more years of experience while nineteen (20.4%) of the NDSP group were in this category.

The DSP and NDSP groups were quite comparable in teaching experience. About three-fourths of each group reported less than ten years of experience as a classroom teacher.

School size. The number of students enrolled in DS and non-DS schools is presented in Table 3. Although the distribution of schools in the various categories was similar for both groups, the NDSP group included a higher proportion of schools with more than 1600 students. Calculation of the mean enrollments from the original data revealed that the average size of DS schools was 852 (N=44) as compared to an average of 967 (N=97) in the non-DS schools.

Table 4 presents the number of instructional staff (teachers) reported by the responding principals. The size and distribution in the various categories of teaching staff in the two groups was quite similar. Both DS and non-DS groups reported approximately one-half of their schools in the 10-29 staff member category and indicated that less than

TABLE 2
Number of Years Experience as Principal and as
a Teacher Served by Responding Principals

Years of Experience	Experience as Principal				Experience as Teacher			
	DSP N=44		NDSP N=97		DSP N=44		NDSP N=97	
	No.	%	No.	%	No.	%	No.	%
2 or less	7	15.9	8	8.2	0	.0	1	1.0
3-5	14	31.8	21	21.6	11	25.0	23	23.7
6-10	9	20.4	26	26.8	23	52.2	42	43.2
11-15	9	20.4	21	21.6	8	18.1	21	21.6
16-20	2	4.5	11	11.3	2	4.5	9	9.2
21-25	3	6.8	6	6.1	0	.0	0	.0
26 or more	0	.0	3	3.0	0	.0	0	.0
Mean	*8.29 -		*10.31 -		*8.09 -		*8.82 -	

*Mean years of experience were calculated from the exact figures reported on the ATI.

TABLE 3
 Number of Students Enrolled in DS and Non-DS
 Schools Administered by Responding Principals

Student Enrollment	Number of Schools			
	DS		NDS	
	Number	Percent	Number	Percent
Under 400	5	11.3	9	9.2
400-699	17	38.6	38	39.1
700-999	11	25.0	25	25.7
1000-1299	5	11.3	10	10.3
1300-1599	2	4.5	3	3.0
1600-1899	2	4.5	5	5.1
1900-2200	0	.0	3	3.0
Over 2200	2	4.5	4	4.1
Mean	*852.	-	*967.	-

*Mean student enrollment was calculated from the exact figures reported on the ATI.

TABLE 4

Number of Instructional Staff (Teachers) in DS and Non-DS
Schools Administered by Responding Principals

Number of Teachers	Number of Schools			
	DS		NDS	
	Number	Percent	Number	Percent
9 or less	1	2.2	2	2.0
10-19	10	22.7	14	14.4
20-29	12	27.2	35	36.0
30-39	10	22.7	16	16.4
40-49	3	6.8	8	8.2
50-75	4	9.0	9	9.2
76-99	2	4.5	7	7.2
100 or more	2	4.5	6	6.1
Mean	*36.45	-	*42.17	-

*Mean numbers of teachers on staff were calculated from the exact figures reported in the ATI.

2.2 percent of their schools had nine or less teachers. A higher percentage of the non-DS schools (22.7%) than DS schools (18.5%) reported staffs exceeding fifty teachers. The mean staff size, like that of student enrollment, was larger for the non-DS schools (42.1) than it was for DS schools (36.4).

Paraprofessional staff, interns and student teachers.

Table 5 presents the number of full-time units of paraprofessional staff, interns and student teachers reported by the responding principals. Almost one-half (44.3%) of the non-DS schools reported no paraprofessionals, interns or student-teachers. Only one-fifth (18.5%) of the DS schools were in this category. The preponderance of supportive staff in the DS schools was illustrated by reports that 34 percent of the DS schools had ten or more paraprofessionals as compared to 13 percent of the non-DS schools. A similar imbalance was evident in the reported use of interns and student teachers. The DSP group reported that 27 percent of its schools had ten or more of these personnel as compared to only nine percent of the NDSP group.

Grade levels. All principals were asked to report the grade levels included in their schools. Table 6 indicates that both groups reported slightly more than six percent of their schools in the "middle school" category. The DSP group included a higher proportion of secondary schools than

TABLE 5
 Number of Full-Time Units of Paraprofessional
 Staff, Interns and Student Teachers
 in DS and Non-DS Schools

Number of Full-time Units	Number of Schools with Paraprofessional Staff				Number of Schools with Interns and Student Teachers			
	DS		NDS		DS		NDS	
	No.	%	No.	%	No.	%	No.	%
None	2	4.5	18	18.5	10	22.7	43	44.3
1-3	14	31.8	41	42.2	15	34.5	26	26.8
4-6	8	18.1	17	17.5	6	13.6	16	16.4
7-9	5	11.3	7	7.2	1	2.2	3	3.0
10-12	6	13.6	4	4.1	6	13.6	3	3.0
13-15	0	.0	2	2.0	2	4.5	4	4.1
16-18	4	9.0	2	2.0	1	2.2	0	.0
19-20	2	4.5	2	2.0	1	2.2	0	.0
21 or more	3	6.8	2	2.0	2	4.5	2	2.0

Note: A full-time unit corresponds to one staff member devoting full time (Example: two half-time interns equal one full-time unit).

TABLE 6
Grade Levels Included in DS and Non-DS Schools
Administered by Responding Principals

Level of School	Number of Schools			
	DS		NDS	
	Number	Percent	Number	Percent
Elementary (K-6)	27	61.3	70	75.2
Middle (5-8)	3	6.8	6	6.4
Secondary (6-12)	15	34.0	17	18.2
Total	*45	-	**93	

Note: Schools were classified as Elementary, Middle, or Secondary if they had at least three of the grades indicated in parentheses. (Example: A school with grades 5, 6, and 7 was designated a middle school).

*One school with grades K-12 was included in both Elementary and Secondary categories.

**Four NDS schools did not report grade levels.

did the NDSP group. Only one school reported including all grade levels from kindergarten to twelfth grade.

Factor Analysis

The data collected by use of the ATI were analyzed by the derivation of a series of Varimax rotated factors. Factors were derived from three forms: FORM A was based upon data descriptive of "time spent" on each of the 73 ATI tasks; FORM B focused upon "importance" attributed to these tasks; and FORM C factor analyzed those variables with significant correlations ($p=.25$) with the DS variables (V74) on forms A and B.

Factors for all three forms are presented by stating the variable as it appeared in the ATI, its variable number, and the loading of each variable on that particular Varimax rotated factor. Factors were named on the basis of interpretation of the variables comprising that factor. A process of interpretation, such as that attempted in naming factors is limited in its precision, due to the subjective "filling-in" required. Factor analysis of FORM A and FORM B provided the basis for determining the variables to be included in FORM C.

Variables (task items) in FORM A and FORM B are identified in the discussion by the respective item numbers used in the ATI, preceded by the letter "V." Variables in FORM C will be preceded by the word "time" if they represent time

spent, or the letters "impo" if they deal with measures of importance. A complete list of variables and task descriptions is provided in Exhibit IV. Factors will be identified by numbers preceded by the letters A, B, or C to distinguish between the forms from which they are derived.

The correlation matrices for forms A, B, and C are included in Appendix D. The final Varimax rotated matrices are included as exhibits in this chapter. Several factors were reflected. In cases where the content of a factor was clearly indicated, and when factors included a large number of variables, not all variables with loadings equal to or greater than .30 were listed.

FORM A Analysis - time spent. Form A treated responses regarding the time spent on administrative tasks. Thirteen factors were extracted. Loadings are rounded to the nearest hundredth.

Factor A₁

- .81 V49 Develop and present plans for establishing a new educational program.
- .79 V47 Assist in innovative curriculum development based on current research.
- .69 V44 Review and evaluate course priorities and total school program effectiveness.
- .64 V41 Prepare materials and inform community of new developments and trends in education.
- .63 V62 Participate in or conduct research studies.
- .63 V36 Plan and participate in team-teaching.
- .60 V52 Formulate objectives and select instructional content.
- .60 V58 Write or develop instructional materials and aids.

Exhibit IV
Administrative Task Inventory Task
Descriptions and Variable Numbers

Variable Number	Task Description
V 1	Control physical environment (e.g.: light, ventilation, and heat).
V 2	Develop policies for use of facilities and equipment by non-school personnel and organizations.
V 3	Maintain accounts and records of financial transactions.
V 4	Prepare work requests (e.g.: maintenance and repair).
V 5	Write and edit correspondence, records, and reports.
V 6	Confer with administrative staff to determine personnel requirements.
V 7	Prepare budget.
V 8	Inventory and maintain records of supplies or materials.
V 9	Maintain administrative files.
V10	Maintain student progress and placement records.
V11	Arrange for repair of instructional aids and equipment.
V12	Score or record test scores and grades.
V13	Requisition supplies or equipment.
V14	Schedule appointments (e.g.: Counseling, visitors, and vendors).
V15	Advise instructors on teaching methods and lesson plans.
V16	Establish evaluative criteria and student performance standards (lesson, unit, or course).
V17	Evaluate adequacy of instructional materials.
V18	Evaluate classroom facilities and equipment.
V19	Evaluate effectiveness of ancillary services.
V20	Evaluate personnel for selection, promotion, or reassignment.
V21	Evaluate your own techniques and methods.
V22	Evaluate student progress through review of test results and ratings.
V23	Evaluate text and reference materials in terms of instructional goals.
V24	Evaluate with standardized tests.

Exhibit IV (continued)

Variable Number	Task Description
V25	Interpret evaluation data for teachers, students and for parents.
V26	Observe and evaluate student practice teaching.
V27	Review and evaluate qualifications of prospective staff.
V28	Supervise beginning teachers.
V29	Supervise experienced teachers.
V30	Supervise non-teaching assistants (e.g.: clerical, maintenance, audio-visual).
V31	Devise means of maintaining student discipline.
V32	Direct group discussion and conferences (e.g.: staff, committee, advisory group, etc.).
V33	Distribute and collect instructional materials.
V34	Conduct a lesson.
V35	Provide individual instructional assistance to students.
- V36	Plan and participate in team teaching.
V37	Confer with staff to plan instructional program.
V38	Interpret policies, directives, and regulations to staff and students.
+ V39	Maintain liaison with other schools, colleges, or universities.
- V40	Organize advisory committees (e.g.: staff, community).
V41	Prepare materials and inform community of new developments and trends in education.
V42	Evaluate lesson plans and units prepared by staff.
V43	Promote and interpret school program and policy in the community.
V44	Review and evaluate course priorities and total school program effectiveness.
V45	Confer with staff to determine policy and operational procedures.
V46	Advise staff in the use of instructional aids or materials.
V47	Assist in innovative curriculum development based on current research.
- V48	Participate in meetings initiated and chaired by staff.
+ V49	Develop and present plans for establishing a new educational program.

Exhibit IV (continued)

Variable Number	Task Description
~V50	Perform tasks in response to requests by staff.
+V51	Develop proposals for external financial aid.
V52	Formulate objectives and select instructional content.
V53	Identify and utilize community resource persons.
V54	Confer with students to determine needs and interests.
V55	Plan and organize the activities of paraprofessional staff.
V56	Plan and schedule duty assignments of instructional personnel.
V57	Visit other schools to obtain information for curriculum planning.
V58	Write or develop instructional materials and aids.
~V59	Confer with staff to determine personnel requirements.
V60	Participate as a member of professional organizations.
V61	Participate in in-service training programs.
+V62	Participate in or conduct research studies.
V63	Perform consultant services to schools and professional educational organizations.
V64	Pursue advanced degree program.
V65	Administer disciplinary action as appropriate.
V66	Assist students with academic problems.
V67	Assist student with non-academic, personal, and social problems.
V68	Confer with guidance counselors.
V69	Confer with parents concerning student progress and problems.
V70	Make recommendations to school officials regarding student disciplinary cases.
V71	Participate in non-instructional school duties (e.g.: ticket sales, chaperoning events).
V72	Participate in registration procedures or student orientation sessions.
V73	Promote or participate in clubs, and special interest groups (e.g.: athletics, school paper).
V74	Differentiated staffing.

Exhibit V

Form A Rotated Factor Matrix

Variable	Factor													Commu- nality
	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂	A ₁₃	
V ₁	13	19	-09	01	11	04	08	-63	02	-02	06	-03	-08	79
V ₂	20	42	-22	26	27	03	21	00	10	40	12	04	28	71
V ₃	29	50	-19	11	04	01	30	-31	20	27	-10	-00	13	70
V ₄	05	78	10	22	22	18	07	-12	-01	04	-03	03	-09	77
V ₅	27	69	-04	13	25	-16	15	01	01	04	18	11	-09	73
V ₆	21	28	-24	08	57	13	20	-12	13	37	06	02	29	82
V ₇	19	21	-56	16	40	-04	-30	-20	07	12	16	01	21	80
V ₈	10	79	-15	04	19	21	03	-14	13	-02	-17	19	02	85
V ₉	07	82	-03	08	20	-00	03	-05	18	03	18	-07	-15	81
V ₁₀	18	58	-02	-13	15	26	28	04	36	17	10	-07	-06	73
V ₁₁	-05	80	-07	-02	23	32	-08	00	09	05	08	-01	-00	83
V ₁₂	16	42	-01	14	01	11	-04	-00	65	08	04	13	02	69
V ₁₃	07	76	-31	09	18	11	-08	-08	-04	-07	05	05	23	81
V ₁₄	14	44	-55	15	15	10	13	12	11	11	08	-23	19	72
V ₁₅	34	34	-06	13	61	17	06	-01	02	26	22	-09	-14	80
V ₁₆	45	25	-06	19	45	13	02	11	32	28	06	-18	-01	76
V ₁₇	29	25	-20	06	57	24	03	04	21	40	12	04	-08	80
V ₁₈	24	30	-17	20	63	30	-06	01	04	17	06	06	-20	78
V ₁₉	23	29	-17	18	64	05	09	-04	20	14	09	32	-02	79
V ₂₀	28	18	-27	09	72	-02	03	-04	-13	-10	13	04	-06	76
V ₂₁	49	41	-10	11	54	07	-04	-05	13	-06	-00	-10	-02	76
V ₂₂	30	29	-11	13	64	12	13	-07	35	04	11	-07	-04	79
V ₂₃	44	42	04	-05	51	20	03	02	28	10	15	01	-06	80
V ₂₄	30	17	-18	15	37	17	-00	-08	64	-07	17	-05	-04	80
V ₂₅	42	29	-17	10	58	15	-02	-06	25	-01	15	-09	08	77

Exhibit V (continued)

Variable	Factor													Communi- nality
	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂	A ₁₃	
V ₂₆	27	21	-06	-09	63	27	07	-18	09	24	09	12	16	75
V ₂₇	30	11	-15	16	75	13	03	-01	-01	-06	-01	10	15	77
V ₂₈	18	21	05	12	69	28	20	-04	10	-04	12	06	03	72
V ₂₉	18	15	-03	12	72	24	00	00	-09	-03	10	-34	06	79
V ₃₀	06	42	-27	12	57	21	02	-20	26	-21	04	23	08	85
V ₃₁	12	46	-26	27	43	17	-04	-17	17	-31	16	-13	-05	78
V ₃₂	46	35	-21	15	55	05	17	-10	11	012	04	11	10	78
V ₃₃	20	55	-21	09	08	57	02	17	-12	10	04	-07	28	86
V ₃₄	33	29	06	08	39	64	12	-10	16	05	09	03	03	83
V ₃₅	37	21	01	-02	42	56	25	-10	24	-08	-06	12	01	82
V ₃₆	63	09	-20	-11	16	28	10	-12	22	03	-02	-09	17	67
V ₃₇	57	26	-15	21	47	23	08	07	10	-10	01	06	06	77
V ₃₈	27	32	-46	23	49	22	13	-15	11	-11	13	04	11	83
V ₃₉	30	07	-19	10	55	37	14	-05	19	02	28	02	31	81
V ₄₀	35	03	-44	29	46	15	02	-24	21	07	06	10	22	81
V ₄₁	64	01	-22	28	29	12	07	-12	20	12	00	-09	31	81
V ₄₂	29	28	-19	22	35	57	-01	02	07	13	04	-08	-17	75
V ₄₃	57	02	-52	18	36	18	00	-06	15	-04	02	08	08	83
V ₄₄	69	06	-08	20	44	26	15	02	-03	08	04	06	-05	82
V ₄₅	51	13	-35	21	50	29	17	-05	-18	03	06	05	07	85
V ₄₆	35	24	-12	01	30	61	09	13	01	16	09	11	-14	74
V ₄₇	79	02	-10	-00	22	05	12	03	18	02	26	08	-01	80
V ₄₈	59	19	-17	-09	38	21	34	-05	-09	-09	04	13	18	80
V ₄₉	82	14	-14	01	14	06	00	-09	05	05	01	02	-01	75
V ₅₀	51	16	-38	15	30	34	16	10	-07	-08	17	-04	16	77
V ₅₁	41	06	-08	15	47	04	-25	-35	05	22	14	09	27	76

Exhibit V (continued)

Variable	Factor													Communi- nality
	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂	A ₁₃	
V ₅₂	60	19	-09	19	28	27	-13	-14	-08	14	26	-11	-07	74
V ₅₃	51	05	-08	48	31	25	-01	-13	16	01	14	05	10	73
V ₅₄	52	-01	-01	50	25	43	-07	-07	21	-05	03	-13	-02	04
V ₅₅	26	28	-11	22	32	37	-08	15	11	03	16	49	11	77
V ₅₆	-12	33	-57	04	26	18	17	-13	04	08	19	28	-26	78
V ₅₇	44	09	-12	14	38	27	-09	-11	08	04	51	07	15	76
V ₅₈	60	16	09	03	29	32	08	18	08	08	23	25	04	75
V ₅₉	39	05	-39	19	45	22	11	-08	-18	11	08	17	28	76
V ₆₀	25	37	-23	28	40	30	07	-19	-03	-03	37	-01	04	77
V ₆₁	48	31	-13	20	39	28	-21	01	-00	-24	22	13	11	81
V ₆₂	63	18	13	13	17	16	-07	-20	16	05	11	-07	34	72
V ₆₃	57	-00	11	20	27	11	-06	-24	-09	27	23	17	33	80
V ₆₄	27	13	-15	12	20	04	10	-03	13	03	78	03	09	81
V ₆₅	18	52	-41	15	30	21	13	-12	07	-27	17	-17	-13	80
V ₆₆	35	11	-16	27	17	65	03	-24	20	-12	02	08	-06	80
V ₆₇	40	24	-21	42	13	52	13	-09	18	-12	15	03	-08	82
V ₆₈	29	25	-02	36	30	22	50	-07	-03	-00	18	06	25	78
V ₆₉	48	31	-16	33	21	34	11	-06	11	-17	26	-12	-18	79
V ₇₀	10	18	-16	31	39	24	58	-19	-00	14	10	-08	-12	79
V ₇₁	05	11	-03	85	05	-00	10	-00	11	02	06	11	-01	77
V ₇₂	09	32	-31	60	30	12	-04	09	05	04	-03	-04	03	69
V ₇₃	15	11	-16	58	30	41	13	-08	-14	07	25	-12	05	78
V ₇₄	16	-09	-08	-03	02	-10	00	07	-02	01	06	01	74	61

- .59 V48 Participate in meetings initiated and chaired by staff.
- .57 V63 Perform consultant services to schools and professional educational organizations.
- .57 V37 Confer with staff to plan instructional program.
- .57 V43 Promote and interpret school program and policy in the community.
- .52 V54 Confer with students to determine needs and interests.
- .51 V53 Identify and utilize community resource persons.
- .51 V50 Perform tasks in response to requests by staff.
- .51 V45 Confer with staff to determine policy and operational procedures.
- .48 V61 Participate in in-service training programs.
- .48 V69 Confer with parents concerning student progress and problems.
- .49 V21 Evaluate your own techniques and methods.
- .46 V32 Direct group discussion and Conferences (e.g.: Staff, Committee, Advisory Group, etc.).
- .45 V16 Establish evaluative criteria and student performance standards (lesson, unit, or course).
- .44 V23 Evaluate text and reference materials in terms of instructional goals.
- .42 V25 Interpret evaluation data for teachers, students and for parents.
- .44 V57 Visit other schools to obtain information for curriculum planning.
- .41 V51 Develop proposals for external financial aid.
- .40 V67 Assist student with non-academic, personal, and social problems.
- .39 V59 Confer with staff to determine personnel requirements.
- .37 V35 Provide individual instructional assistance to students.
- .34 V15 Advise instructors on teaching methods and lesson plans.
- .35 V66 Assist students with academic problems.
- .35 V46 Advise staff in the use of instructional aids or materials.
- .35 V40 Organize advisory committees (e.g.: staff, community).
- .33 V34 Conduct a lesson.
- .30 V24 Evaluate with standardized tests.

Factor A_1 included 34 variables encompassing a broad area of educational administration. Four of the variables [✓]₆₁ (V49, V47, V41, V62) with high loadings were innovative and

change-oriented tasks. A number of variables emphasized instruction (V36, V52, V58, V37, V35, V15, V66, V46, V34), or implied "openness" in terms of relating to various elements of the school community, (V43, V50, V57, V53, V69, V32, V41, V32, V67, V40). A number of variables dealt with evaluation (V49, V44, V21, V26, V17, V14, V12, V42, V21, V16, V23, V25, V24, V22) and the supervision of staff. This cluster had a strong innovative, "open" institutional element and displayed an absence of variables dealing with routine administrative tasks. The emphasis upon change, participative interaction (V36, V48, V37, V54), program and personnel development led to designating factor A₁ Educational Leadership.

Factor A₂

- .82 V9 Maintain administrative files.
- .80 V11 Arrange for repair of instructional aids and equipment.
- .79 V8 Inventory and maintain records of supplies or materials.
- .76 V13 Requisition supplies or equipment.
- .78 V4 Prepare work requests (e.g.: maintenance and repair).
- .69 V5 Write and edit correspondence, records, and reports.
- .58 V10 Maintain student progress and placement records.
- .55 V33 Distribute and collect instructional materials.
- .50 V3 Maintain accounts and records of financial transactions.
- .46 V31 Devise means of maintaining student discipline.
- .44 V14 Schedule appointments (e.g.: counseling, visitors, and vendors).
- .42 V12 Score or record test scores and grades.
- .42 V23 Evaluate text and reference materials in terms of instructional goals.
- .42 V30 Supervise non-teaching assistants (e.g.: clerical, maintenance, audio-visual).

- .41 V21 Evaluate your own techniques and methods.
- .37 V60 Participate as a member of professional organizations.
- .35 V32 Direct group discussion and conferences (e.g.: staff, committee, advisory group, etc.).
- .34 V15 Advise instructors on teaching methods and lesson plans.
- .33 V56 Plan and schedule duty assignments of instructional personnel.
- .32 V38 Interpret policies, directives, and regulations to staff and students.
- .32 V72 Participate in registration procedures or student orientation sessions.
- .31 V61 Participate in in-service training programs.
- .31 V69 Confer with parents concerning student progress and problems.

This cluster included a high proportion of routine tasks associated with operational administration. The heaviest loadings were on eleven administrative tasks (V3, V4, V5, V8, V9, V10, V11, V12, V13, V14, V31) not directly associated with instruction and not included in factor A_1 . Most of these variables, notably V31, could be described as "control" tasks in that they regulated the operation of the institution. This heavy emphasis upon housekeeping, control and the absence of tasks closely related to instruction led to the designation of Administrative Control for this factor.

Factor A_3 ✓

- .75 V27 Review and evaluate qualifications of prospective staff.
- .69 V28 Supervise beginning teachers.
- .64 V19 Evaluate effectiveness of ancillary services.
- .64 V22 Evaluate student progress through review of test results and ratings.
- .63 V26 Observe and evaluate student practice teaching.
- .63 V18 Evaluate classroom facilities and equipment.
- .61 V15 Advise instructors on teaching methods and lesson plans.

- .58 V25 Interpret evaluation data for teachers, students and for parents.
- .57 V17 Evaluate adequacy of instructional materials.
- .57 V6 Confer with administrative staff to determine personnel requirements.
- .57 V30 Supervise non-teaching assistants (e.g.: clerical, maintenance, audio-visual).
- .55 V32 Direct group discussion and conferences (e.g.: staff, committee, advisory group, etc.).
- .55 V39 Maintain liaison with other schools, colleges, or universities.
- .54 V21 Evaluate your own techniques and methods.
- .51 V23 Evaluate text and reference materials in terms of instructional goals.
- .50 V45 Confer with staff to determine policy and operational procedures.
- .49 V38 Interpret policies, directives, and regulations to staff and students.
- .47 V51 Develop proposals for external financial aid.
- .47 V37 Confer with staff to plan instructional program.
- .46 V40 Organize advisory committees (e.g.: staff, community).
- .45 V16 Establish evaluative criteria and student performance standards (lesson, unit, or course).
- .45 V59 Confer with staff to determine personnel requirements.
- .44 V44 Review and evaluate course priorities and total school program effectiveness.
- .42 V31 Devise means of maintaining student discipline.
- .42 V35 Provide individual instructional assistance to students.
- .40 V60 Participate as a member of professional organizations.
- .40 V7 Prepare budget.
- .39 V70 Make recommendations to school officials regarding student disciplinary cases.
- .39 V34 Conduct a lesson.
- .39 V61 Participate in in-service training programs.
- .38 V48 Participate in meetings initiated and chaired by staff.
- .38 V57 Visit other schools to obtain information for curriculum planning.
- .37 V24 Evaluate with standardized tests.
- .36 V43 Promote and interpret school program and policy in the community.
- .35 V42 Evaluate lesson plans and units prepared by staff.
- .32 V55 Plan and organize the activities of paraprofessional staff.

- .31 V53 Identify and utilize community resource persons.
- .30 V46 Advise staff in the use of instructional aids or materials.
- .30 V72 Participate in registration procedures or student orientation sessions.

The structure of factor A_3 was somewhat similar to factor A_1 in that the same 26 variables dealing with educational supervision were included in both factors. Nine of these variables (V15, V16, V17, V21, V22, V23, V24, V25, V27) dealt with some aspect of evaluation. Variables dealing with innovation and change (V49, V47, V62) did not load on factor A_3 . The highest loadings were on variables dealing with the participation of others in administration and had to do mainly with operations, policy and procedures. Examination of the loadings on the "confer with" variables indicated an emphasis upon relations with other administrative staff. There were higher loadings on conferring with staff about policy and operations (V45) than on planning instruction (V37) or determining personnel requirements (V59). The loading on V31, "Devise means of maintaining student discipline" was high and V54, "Confer with students. . .," was not represented in this factor. Because the highest loadings were on variables dealing with operations and because participatory behavior was not emphasized, factor A_3 was named Traditional Administration.

Factor A₄ ✓

- .85 V71 Participate in non-instructional school duties (e.g.: ticket sales, chaperoning events).
- .58 V73 Promote or participate in clubs, and special interest groups (e.g.: athletics, school paper).
- .50 V54 Confer with students to determine needs and interests.
- .48 V53 Identify and utilize community resource persons.
- .36 V68 Confer with guidance counselors.
- .33 V69 Confer with parents concerning student progress and problems.
- .31 V70 Make recommendations to school officials regarding student disciplinary cases.

All variables represented in factor A₄ involved interaction with constituents of the school community. The highest loadings were on three tasks (V71, V73, V54) which placed the principal in intimate contact with students. Factor A₄ was named Human Relations.

Factor A₅

- .74 V74 Differentiated staffing.
- .34 V62 Participate in or conduct research studies.
- .33 V63 Perform consultant services to schools and professional educational organizations.
- .31 V39 Maintain liaison with other schools, colleges, or universities.

This factor was the only cluster of variables which included a loading above .30 on the DS variable (V74). Three variables (V62, V63, V39), included in factor A₅ with the DS variable, emphasized an outward or open perspective regarding new ideas, and an emphasis upon research and the dissemination of new knowledge. All three variables implied

an administrative role encompassing more than the operational administration of a school building.

It should be noted at this point that V74 was calculated as a point biserial variable. A value of 1.00 was assigned to DS principals and a value of 0.00 was assigned to NDS principals. Thus V74 represents the correlation of the respondents of the DSP group with factor A_5 . This factor was named Differentiated Staffing.

Factor A_6 [✓]

- .64 V34 Conduct a lesson.
- .65 V66 Assist students with academic problems.
- .61 V46 Advise staff in the use of instructional aids or materials.
- .57 V42 Evaluate lesson plans and units prepared by staff.
- .56 V35 Provide individual instructional assistance to students.
- .43 V54 Confer with students to determine needs and interests.
- .40 V73 Promote or participate in clubs, and special interest groups (e.g.: athletics, school paper).
- .37 V55 Plan and organize the activities of paraprofessional staff.
- .37 V39 Maintain liaison with other schools, colleges, or universities.
- .34 V69 Confer with parents concerning student progress and problems.
- .34 V50 Perform tasks in response to requests by staff.
- .32 V58 Write or develop instructional materials and aids.
- .32 V11 Arrange for repair of instructional aids and equipment.

All the variables in factor A_6 involved direct relations with students, staff or community. Five variables (V34, V66, V46, V42, V35) implied intimate contact with the

instructional process. The emphasis upon instruction and the prominence of variables with words such as "assist," "advise," "confer," "promote," and "plan" led to the designation of Instructional Leadership for this factor.

Factor A₇

- .40 V6 Confer with administrative staff to determine personnel requirements.
- .40 V17 Evaluate adequacy of instructional materials.
- .37 V2 Develop policies for use of facilities and equipment by non-school personnel and organizations.
- .31 V31 Devise means of maintaining student discipline.

All four variables included in factor A₇ dealt with maintaining the operations of the institution. The similarity to the pattern of factor A₃ was obvious but this factor was less detailed. The four areas of use of facilities, staff, instructional materials and finance were all regulatory or "operations" tasks. Factor A₇ was labelled Operational Control.

Factor A₈

- .35 V51 Develop proposals for external financial aid.
- .31 V3 Maintain accounts and records of financial transactions.

This factor dealing with the procurement and accounting of financial resources was labeled Finance.

Factor A₉

- .64 V24 Evaluate with standardized tests.
- .36 V10 Maintain student progress and placement records.
- .35 V22 Evaluate student progress through review of test results and ratings.
- .32 V16 Establish evaluative criteria and student performance standards (lesson, unit, or course).

All the variables in factor A₉ pertained to the assessment and monitoring of student progress. It was interesting to note that the highest loading was on standardized testing while the lowest loading (represented here) was on the establishing of standards and performance criteria. Factor A₉ was named Auditing Student Progress.

Factor A₁₀ ✓

- .57 V56 Plan and schedule duty assignments of instructional personnel.
- .55 V14 Schedule appointments (e.g.: counseling visitors, and vendors).
- .52 V43 Promote and interpret school program and policy in the community.
- .46 V38 Interpret policies, directives, and regulations to staff and students.
- .44 V40 Organize advisory committees (e.g.: staff, community).
- .38 V50 Perform tasks in response to requests by staff.
- .39 V59 Confer with staff to determine personnel requirements.
- .35 V45 Confer with staff to determine policy and operational procedures.
- .31 V13 Requisition supplies or equipment.

Six of the variables in factor A₁₀ dealt with staff. Two others (V14, V43) involved liaison with other constituents of the school community. One might speculate that a principal's appointments (V14), his relations with the community (V43),

and even the ordering of supplies (V13) generally originate in the actions of personnel. The descriptor "personnel" was interpreted in its broadest sense in naming this factor, Personnel Management.

Factor A₁₁

- .78 V64 Pursue advanced degree program.
- .51 V57 Visit other schools to obtain information for curriculum planning.
- .37 V60 Participate as a member of professional organizations.

Because the highest loadings in this factor were on study and since all variables implied voluntary acts related to professional action, factor A₁₁ was named Professional Growth.

Factor A₁₂ ✓

- .49 V55 Plan and organize the activities of para-professional staff.
- .32 V19 Evaluate effectiveness of ancillary services.

This factor was named Supportive Services.

Factor A₁₃

- .58 V70 Make recommendations to school officials.
- .50 V68 Regarding student disciplinary cases, confer with guidance counselors.
- .34 V48 Participate in meetings initiated and chaired by staff.
- .30 V7 Prepare budget.

Factor A₁₃ was the only bipolar factor in Form A. The heterogeneity of the variables in this factor presented

little basis for interpretation. One might speculate that a high loading on disciplinary action (V70) and budgeting (V7) and a resistance to participative action with staff (V48) contribute to administrative behavior labeled Unilateral Action.

Summary. The presentation of FORM A included all variables with factor loadings equal to or greater than .30. Thirteen factors were interpreted. Three factors: A_1 (Educational Leadership), A_2 (Administrative Control), and A_3 (Traditional Administration) were large clusters of variables and tended to be general. Factor A_4 (Human Relations) and Factor A_{10} (Personnel Management) had a strong "participative" element in that relationships with various groups were emphasized. Factors A_6 (Instructional Leadership), A_9 (Auditing Student Progress) and A_{11} (Professional Growth) and A_1 (Educational Leadership) tended to focus upon instruction. Factors A_7 (Operational Control), A_8 (Finance), and A_{12} (Supportive Services) tended to emphasize the operations of the educational institution. Factor A_{13} (Unilateral Action) presented little basis for interpretation.

Factor A_5 was the only cluster of variables in FORM A which included the DS variable (V74). It was named "Differentiated Staffing," because its variables were characterized by "openness," emphasis upon new ideas, research, and the dissemination of knowledge.

FORM B Analysis - importance. The factors in FORM B were derived from responses to 73 ATI task descriptions indicating the importance attributed to these administrative tasks. Thirteen factors were derived.

Factor B₁ ✓

- .76 V47 Assist in innovative curriculum development based on current research.
- .76 V49 Develop and present plans for establishing a new educational program.
- .73 V44 Review and evaluate course priorities and total school program effectiveness.
- .65 V41 Prepare materials and inform community of new developments and trends in education.
- .64 V48 Participate in meetings initiated and chaired by staff.
- .61 V36 Plan and participate in team teaching.
- .60 V37 Confer with staff to plan instructional program.
- .57 V53 Identify and utilize community resource persons.
- .56 V43 Promote and interpret school program and policy in the community.
- .56 V40 Organize advisory committees (e.g.: staff, community).
- .56 V50 Perform tasks in response to requests by staff.
- .56 V45 Confer with staff to determine policy and operational procedures.
- .51 V61 Participate in in-service training programs.
- .49 V54 Confer with students to determine needs and interests.
- .50 V32 Direct group discussion and conferences (e.g.: staff, committee, advisory group, etc.).
- .47 V64 Pursue advanced degree program.
- .47 V34 Conduct a lesson.
- .46 V21 Evaluate your own techniques and methods.
- .46 V62 Participate in or conduct research studies.
- .45 V52 Formulate objectives and select instructional content.
- .45 V59 Confer with staff to determine personnel requirements.
- .42 V51 Develop proposals for external financial aid.
- .41 V20 Evaluate personnel for selection, promotion, or reassignment.

Exhibit VI

Form B Rotated Factor Matrix

Variable	Factor													Communi- nality
	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	B ₇	B ₈	B ₉	B ₁₀	B ₁₁	B ₁₂	B ₁₃	
V ₁	-07	-61	-10	15	07	06	11	-30	01	-01	-02	-12	-10	54
V ₂	11	-53	-23	21	01	07	25	-27	06	-28	-29	05	-04	70
V ₃	33	-50	-04	11	-05	-01	03	-18	04	09	-02	55	04	72
V ₄	10	-84	-19	-06	-13	15	06	-21	04	-10	05	-02	-11	86
V ₅	34	-53	-25	-08	02	-15	03	01	-25	-30	-32	25	-05	80
V ₆	14	-31	-43	36	11	18	32	-10	07	-14	-30	22	-10	76
V ₇	26	-24	-54	28	32	06	19	04	10	-28	-19	09	-07	78
V ₈	05	-84	-17	00	00	21	13	-03	06	-00	-05	08	-09	81
V ₉	12	-80	-11	-18	07	04	06	03	09	-10	-10	14	-10	76
V ₁₀	21	-74	-09	-09	-02	07	-04	-04	23	09	-15	15	-20	77
V ₁₁	10	-85	-11	-05	07	16	15	-19	10	-02	-03	00	04	83
V ₁₂	13	-57	-03	04	24	17	08	10	11	41	-15	15	-17	70
V ₁₃	25	-64	-12	10	21	-01	14	-03	07	-14	-15	07	-29	70
V ₁₄	10	-38	-11	17	20	04	28	-14	11	-06	-19	49	-12	61
V ₁₅	37	-20	-30	-12	-07	04	61	05	-04	-18	-16	08	-13	74
V ₁₆	39	-11	-14	-09	09	06	65	-17	09	24	-07	08	-18	77
V ₁₇	21	-21	-32	-06	04	32	72	-13	11	01	-10	02	-04	86
V ₁₈	22	-18	-45	00	08	23	56	-01	02	-21	-10	13	-28	81
V ₁₉	30	-30	-31	25	01	13	56	00	25	-20	-13	01	-03	79
V ₂₀	41	-07	-70	01	05	02	20	-03	08	-19	-08	03	-03	77
V ₂₁	46	-09	-37	14	10	05	24	10	26	-05	-25	28	-26	74
V ₂₂	32	-23	-46	-08	01	12	12	-06	51	01	-21	20	-17	79
V ₂₃	32	-24	-30	-12	01	38	29	-09	30	-00	-30	30	-07	78
V ₂₄	22	-29	-23	06	03	18	29	-16	53	-03	-11	32	-30	81
V ₂₅	39	-23	-33	07	09	10	12	-12	49	-01	-27	02	-32	77

Exhibit VI (continued)

Variable	Factor													Communality
	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	B ₇	B ₈	B ₉	B ₁₀	B ₁₁	B ₁₂	B ₁₃	
V ₂₆	26	-21	-51	06	-06	26	29	-18	20	-08	-00	12	-20	66
V ₂₇	34	-15	-73	13	06	22	08	-03	05	00	-11	17	-10	81
V ₂₈	20	-24	-66	-09	-10	14	28	-13	11	10	-20	-15	-06	76
V ₂₉	29	-13	-67	-14	00	01	23	-09	14	02	-17	-07	-11	70
V ₃₀	14	-40	-47	01	09	07	05	-10	57	-05	-04	-12	-20	81
V ₃₁	08	-35	-50	-15	28	15	18	-17	25	05	-19	07	-32	76
V ₃₂	50	-25	-48	11	22	05	16	-14	24	-08	-17	15	-14	78
V ₃₃	17	-51	-50	08	17	51	13	-04	-03	09	-15	-03	-34	75
V ₃₄	47	-36	-32	-07	-20	36	10	-04	11	-07	-15	09	-22	73
V ₃₅	35	-31	-39	03	-24	19	15	01	06	06	-05	08	-55	81
V ₃₆	61	-21	-37	11	-15	15	19	-17	-11	06	-06	-09	-10	71
V ₃₇	60	-17	-44	-01	12	06	20	04	02	05	-18	15	-18	73
V ₃₈	38	-20	-50	07	37	16	15	-22	14	-10	-22	14	-26	83
V ₃₉	27	-19	-39	43	15	07	06	-19	26	-10	-39	-02	-28	83
V ₄₀	56	-11	-23	15	08	10	06	-31	41	-27	-13	01	-17	80
V ₄₁	65	-12	-27	11	06	-07	23	-25	19	-06	-15	-11	-29	80
V ₄₂	27	-25	-32	-20	-01	61	15	-11	05	-04	-04	06	-17	72
V ₄₃	56	-16	-41	14	31	16	14	-17	21	-07	-14	02	-24	82
V ₄₄	73	-11	-24	00	06	24	24	-11	18	09	-14	08	-11	81
V ₄₅	56	-01	-41	11	21	35	20	-20	11	-07	-14	14	-18	82
V ₄₆	36	-31	-09	-06	19	64	14	-06	21	-10	-08	-09	-12	79
V ₄₇	76	-11	-14	07	09	16	18	-06	03	-05	-27	02	-18	80
V ₄₈	64	-12	-26	13	-02	30	05	-04	11	-12	-17	20	-15	73
V ₄₉	76	-15	-21	03	04	11	21	-09	02	01	-05	12	-20	77
V ₅₀	56	-18	-10	11	02	31	23	-22	20	-12	-29	07	-19	75

Exhibit VI (continued)

Variable	Factor													Communi- nality
	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	B ₇	B ₈	B ₉	B ₁₀	B ₁₁	B ₁₂	B ₁₃	
V ₅₁	42	-06	-19	35	-09	10	19	-29	32	-31	-30	12	-12	79
V ₅₂	46	-17	-18	-23	10	43	17	-09	07	-16	-24	19	-30	76
V ₅₃	57	-15	-16	05	-01	20	-02	-09	15	-36	-36	07	-28	79
V ₅₄	49	-06	-25	08	03	04	04	-16	-02	-23	-11	16	-58	77
V ₅₅	34	-27	-14	-01	12	37	14	-13	18	-53	-19	-06	-14	77
V ₅₆	31	-28	-31	-29	21	29	18	-24	-05	-28	-02	19	-13	71
V ₅₇	38	-01	-37	00	04	25	09	-14	02	-24	-47	18	-29	78
V ₅₈	24	-19	-24	11	-04	58	19	-11	00	-01	-32	03	-27	73
V ₅₉	45	-01	-47	31	18	22	03	-35	07	-19	-13	11	-14	80
V ₆₀	33	-18	-43	12	17	11	02	-10	11	-20	-48	18	-34	82
V ₆₁	51	-12	-49	12	18	21	-08	-07	09	-05	-34	-07	-28	82
V ₆₂	46	-17	-18	05	02	01	18	-15	30	02	-60	03	-21	83
V ₆₃	30	-10	-21	25	03	22	12	-05	02	01	-71	05	-14	80
V ₆₄	47	-23	-19	-11	15	11	15	-12	10	-08	-59	-06	-05	76
V ₆₅	07	-35	-48	-15	30	13	18	-16	17	-11	-08	02	-42	77
V ₆₆	30	-27	-11	08	09	21	15	-07	17	00	-07	-01	-75	86
V ₆₇	33	-16	-12	-08	17	17	14	-17	15	-06	-24	01	-70	84
V ₆₈	15	-16	-43	15	-08	13	25	-41	08	06	-43	09	-32	81
V ₆₉	35	-26	-21	-16	04	19	05	-23	22	04	-23	02	-58	80
V ₇₀	14	-24	-39	-02	-05	21	08	-58	05	03	-23	23	-11	74
V ₇₁	29	-25	-02	-06	14	00	02	-72	12	-12	-03	08	-12	74
V ₇₂	20	-28	-28	01	59	16	-00	-36	04	03	-09	07	-22	77
V ₇₃	23	-14	-08	20	19	18	16	-48	06	01	-21	-09	-36	63
V ₇₄	15	12	03	78	-00	-10	-07	-01	-01	02	-08	07	03	67

- .39 V16 Establish evaluative criteria and student performance standards (lesson, unit, or course).
- .39 V25 Interpret evaluation data for teachers, students and for parents.
- .38 V57 Visit other schools to obtain information for curriculum planning.
- .38 V38 Interpret policies, directives, and regulations to staff and students.
- .37 V15 Advise instructors on teaching methods and lesson plans.
- .36 V46 Advise staff in the use of instructional aids or materials.
- .35 V35 Provide individual instructional assistance to students.
- .34 V27 Review and evaluate qualifications of prospective staff.
- .34 V5 Write and edit correspondence, records, and reports.
- .35 V69 Confer with parents concerning student progress and problems.
- .33 V67 Assist student with non-academic, personal, and social problems.
- .34 V55 Plan and organize the activities of paraprofessional staff.
- .33 V60 Participate as a member of professional organizations.
- .33 V3 Maintain accounts and records of financial transactions.
- .32 V23 Evaluate text and reference materials in terms of instructional goals.
- .32 V22 Evaluate student progress through review of test results and ratings.
- .31 V56 Plan and schedule duty assignments of instructional personnel.
- .30 V19 Evaluate effectiveness of ancillary services.

This factor was comprised of 41 variables. The 15²⁰ variables with the highest loadings were characterized by an emphasis upon educational innovation (V47, V49, V41), interaction with staff and community (V48, V41, V53, V37, V43, V45, ~~V40~~^{V41, V42}) and participative planning. There was an obvious instructional emphasis and loadings on variables dealing with evaluation and staff development. The emphasis upon interaction in the supervision of staff and the absence of routine

administrative tasks led to the designation of Participative Supervision for this factor.

Factor B₂ ✓

- .85 V11 Arrange for repair of instructional aids and equipment.
- .84 V4 Prepare work requests (e.g.: maintenance and repair).
- .84 V8 Inventory and maintain records of supplies or materials.
- .80 V9 Maintain administrative files.
- .74 V10 Maintain student progress and placement records.
- .64 V13 Requisition supplies or equipment.
- .61 V1 Control physical environment (e.g.: light, ventilation, and heat).
- .57 V12 Score or record test scores and grades.
- .53 V2 Develop policies for use of facilities and equipment by non-school personnel and organizations.
- .53 V5 Write and edit correspondence, records, and reports.
- .49 V3 Maintain accounts and records of financial transactions.
- .40 V30 Supervise non-teaching assistants (e.g.: clerical, maintenance, audio-visual).
- .38 V14 Schedule appointments (e.g.: counseling, visitors, and vendors).
- .36 V65 Administer disciplinary action as appropriate.
- .35 V31 Devise means of maintaining student discipline.
- .31 V6 Confer with administrative staff to determine personnel requirements.
- .31 V35 Provide individual instructional assistance to students.
- .31 V46 Advise staff in the use of instructional aids or materials.

The thirteen variables with the highest loadings on this factor had to do with general administration and business affairs. Only one variable (V34) dealt directly with instruction and two variables (V65, V31) with comparable loadings emphasized disciplinary action. This factor had a structural

pattern quite similar to factor A_2 (Administrative Control). Factor B_2 was named Administrative Affairs to denote its emphasis upon non-instructional functions.

Factor B_3 ✓

- .73 V27 Review and evaluate qualifications of prospective staff.
- .70 V20 Evaluate personnel for selection, promotion, or reassignment.
- .67 V29 Supervise experienced teachers.
- .66 V28 Supervise beginning teachers.
- .54 V7 Prepare budget.
- .51 V26 Observe and evaluate student practice teaching.
- .50 V31 Devise means of maintaining student discipline.
- .50 V33 Distribute and collect instructional materials.
- .50 V38 Interpret policies, directives, and regulations to staff and students.
- .49 V61 Participate in in-service training programs.
- .48 V65 Administer disciplinary action as appropriate.
- .48 V32 Direct group discussion and conferences (e.g.: staff, committee, advisory group, etc.).
- .47 V59 Confer with staff to determine personnel requirements.
- .47 V30 Supervise non-teaching assistants (e.g.: clerical, maintenance, audio-visual).
- .46 V22 Evaluate student progress through review of test results and ratings.
- .45 V18 Evaluate classroom facilities and equipment.
- .44 V37 Confer with staff to plan instructional program.
- .43 V60 Participate as a member of professional organizations.
- .43 V68 Confer with guidance counselors.
- .43 V6 Confer with administrative staff to determine personnel requirements.
- .41 V45 Confer with staff to determine policy and operational procedures.
- .40 V43 Promote and interpret school program and policy in the community.
- .39 V70 Make recommendations to school officials regarding student disciplinary cases.
- .39 V35 Provide individual instructional assistance to students.
- .39 V39 Maintain liaison with other schools, colleges.
- .37 V57 Visit other schools to obtain information for curriculum planning.

- .37 V36 Plan and participate in team teaching.
- .37 V21 Evaluate your own techniques and methods.
- .33 V25 Interpret evaluation data for teachers, students and for parents.
- .32 V34 Conduct a lesson.
- .32 V17 Evaluate adequacy of instructional materials.
- .32 V42 Evaluate lesson plans and units prepared by staff.
- .30 V23 Evaluate text and reference materials in terms of instructional goals.
- .31 V19 Evaluate effectiveness of ancillary services.
- .31 V56 Plan and schedule duty assignments of instructional personnel.

This factor was broad in scope. The four variables with the highest loadings emphasized the selection and supervision of personnel. The instructional element was strong throughout the cluster. Six of the lowest loadings were on variables dealing with evaluation (V21, V25, V17, V42, V23, V19). Loadings on variables 59, 37, 68, and 45 indicated the recognized importance of conferring with staff in educational decision-making. This factor was labeled Instructional Supervision.

Factor B₄ ✓

- .78 V74 Differentiated staffing.
- .43 V39 Maintain liaison with other schools, colleges, or universities.
- .36 V6 Confer with administrative staff to determine personnel requirements.
- .35 V51 Develop proposals for external financial aid.
- .31 V59 Confer with staff to determine personnel requirements.

This factor was the only cluster in FORM B which included a loading on the DS variable. The loadings indicated an emphasis upon personnel planning (V6, V59), liaison with

other educational institutions and the aggressive procurement of funding. Factor B_4 was named Differentiated Staffing.

Factor B_5

- .59 V72 Participate in registration procedures or student orientation sessions.
- .32 V7 Prepare budget.
- .30 V65 Administer disciplinary action as appropriate.

This small cluster did not present a clear basis for interpretation. The emphasis upon regulation, discipline and monetary planning led to a designation of Control for this factor.

Factor B_6

- .64 V46 Advise staff in the use of instructional aids or materials.
- .61 V42 Evaluate lesson plans and units prepared by staff.
- .58 V58 Write or develop instructional materials and aids.
- .43 V52 Formulate objectives and select instructional content.
- .38 V23 Evaluate text and reference materials in terms of instructional goals.
- .37 V55 Plan and organize the activities of paraprofessional staff.
- .36 V34 Conduct a lesson.
- .31 V50 Perform tasks in response to requests by staff.
- .31 V43 Promote and interpret school program and policy in the community.
- .30 V48 Participate in meetings initiated and chaired by staff.
- .56 V18 Evaluate classroom facilities and equipment.
- .32 V6 Confer with administrative staff to determine personnel requirements.
- .29 V23 Evaluate text and reference materials in terms of instructional goals.
- .29 V26 Observe and evaluate student practice teaching.

Factor B_6 included seven variables dealing with program planning, two that emphasized program evaluation and two that implied collegial action. The highest loadings were on developmental activities. This factor was labeled Program-
ming.

Factor B_7 ✓

- .72 V17 Evaluate adequacy of instructional materials.
- .65 V16 Establish evaluative criteria and student performance standards (lesson, unit, or course).
- .61 V15 Advise instructors on teaching methods and lesson plans.
- .56 V18 Evaluate classroom facilities and equipment.
- .32 V6 Confer with administrative staff to determine personnel requirements.
- .29 V23 Evaluate text and reference materials in terms of instructional goals.
- .29 V26 Observe and evaluate student practice teaching.

Factor B_7 was named Program Evaluation. Variables 23 and 26 were included because of their consistency with the emphasis of this factor.

Factor B_8 ✓

- .72 V71 Participate in non-instructional school duties (e.g.: ticket sales, chaperoning events).
- .58 V70 Make recommendations to school officials regarding student disciplinary cases.
- .48 V73 Promote or participate in clubs, and special interest groups (e.g.: athletics, school paper).
- .41 V68 Confer with guidance counselors.
- .36 V72 Participate in registration procedures or student orientation sessions.
- .34 V59 Confer with staff to determine personnel requirements.
- .31 V40 Organize advisory committees (e.g.: staff, community).

The five variables loading most heavily on factor B_8 had to do with students. All components of this cluster were essentially non-instructional and related to interaction with constituents of the school. Factor B_8 was named Human Relations.

Factor B_9

- .57 V30 Supervise non-teaching assistants (e.g.: clerical, maintenance, audio-visual).
- .53 V24 Evaluate with standardized tests.
- .51 V22 Evaluate student progress through review of test results and ratings.
- .49 V25 Interpret evaluation data for teachers, students and for parents.
- .41 V40 Organize advisory committees (e.g.: staff, community).
- .32 V51 Develop proposals for external financial aid.

The variables which loaded of this factor suggested a "remote" form of supervision not intimately related to supervision of staff. The emphasis upon supervision of non-teaching staff and standardized evaluation suggested an inspectorial form of supervision. This factor was labeled Supervision by Evaluation.

Factor B_{10}

- .53 V55 Plan and organize the activities of paraprofessional staff.
- .36 V53 Identify and utilize community resource persons.
- .31 V51 Develop proposals for external financial aid.

Factor B_{10} was named Resource Development and Allocation.

Factor B₁₁ ✓

- .71 V63 Perform consultant services to schools and professional educational organizations.
- .60 V62 Participate in or conduct research studies.
- .59 V64 Pursue advanced degree program.
- .48 V60 Participate as a member of professional organizations.
- .47 V57 Visit other schools to obtain information for curriculum planning.
- .43 V68 Confer with guidance counselors.
- .39 V39 Maintain liaison with other schools, colleges, or universities.
- .36 V53 Identify and utilize community resource persons.
- .34 V61 Participate in in-service training programs.
- .32 V58 Write or develop instructional materials and aids.
- .32 V5 Write and edit correspondence, records, and reports.
- .30 V23 Evaluate text and reference materials in terms of instructional goals.
- .30 V6 Confer with administrative staff to determine personnel requirements.

The five variables with the highest loadings on this factor had a strong developmental and innovative orientation. Only two variables (V68, V5) did not contribute to the general emphasis upon change and growth, although counseling and writing reports could be viewed as a logical consequence of change. Factor B₁₁ was named Educational Development.

Factor B₁₂

- .54 V3 Maintain accounts and records of financial transactions.
- .31 V24 Evaluate with standardized tests.
- .29 V23 Evaluate text and reference materials in terms of instructional goals.
- .28 V21 Evaluate your own techniques and methods.

Interpretation of this cluster was aided by including the two variables with loadings just below the arbitrary cutoff of .30. The emphasis upon auditing was clear, however variables 33 and 21 contributed to the educational nature of such a process. Factor B_{12} was named Evaluation and Records.

Factor B_{13}

- .75 V66 Assist students with academic problems.
- .58 V69 Confer with parents concerning student progress and problems.
- .58 V54 Confer with students to determine needs and interests.
- .42 V65 Administer disciplinary action as appropriate.
- .36 V73 Promote or participate in clubs, and special interest groups (e.g.: athletics, school paper).
- .34 V60 Participate as a member of professional organizations.
- .34 V33 Distribute and collect instructional materials.
- .30 V24 Evaluate with standardized tests.

The highest loadings in this factor were on variables dealing with student problems and needs, or the means towards recognition of these areas. The presence of variable 60 in this cluster was not readily explicable. This cluster was named Facilitating Student Progress.

Summary. FORM B included thirteen factors derived from responses regarding the importance attributed to tasks cited in the ATI. Although there were marked similarities in the structural patterns of factors in FORM A and FORM B, factors were not compared. In certain instances comparison of reported time spent and importance attributed to tasks

cited in the ATI. Although there were marked similarities in the structural patterns of factors in FORM A and FORM B, factors were not compared. In certain instances comparison of reported time spent and importance attributed to tasks would be of interest, however such a comparison was not intended in this study. FORM C juxtaposes the elements of time spent and importance for a number of variables pertinent to DS. In effect, FORM C constituted a synthesis of the first two forms as they pertained to DS.

Form B included seven factors dealing with instruction. Four factors were more of an administrative nature. Only one factor had a loading on the DS variable. Factor B₄ had a high loading (.77) on DS and emphasized personnel planning, liaison with other institutions and the procurement of additional revenue from external sources. Like factor A₅, the DS factor in FORM B was small and included no routine or operational administrative tasks.

FORM C Analysis - variables correlating with DS.

The correlation matrices for FORM A and FORM B were analyzed to extract the 36 variables with the highest correlations ($p=.25$) with the DS variable (V74). Appendix F presents the 36 task descriptions selected, their correlations with V74 and the new variable numbers utilized in FORM C.

Each task description appeared twice in FORM C: as a variable indicating the time spent on that task, and

Exhibit VII
Form C Rotated Factor Matrix

Variable	Factor													Communi- nality
	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈	C ₉	C ₁₀	C ₁₁	C ₁₂	C ₁₃	
T ₁	08	39	-30	01	-17	15	01	-28	-06	-16	61	-06	07	79
T ₂	17	73	05	12	-06	-00	01	-13	07	-05	18	-08	42	82
T ₃	17	33	-44	20	-21	06	03	-20	-12	-18	53	-17	-13	83
T ₄	14	13	-74	33	-11	11	01	-25	-13	-12	03	-15	07	84
T ₅	08	76	-08	26	-18	-07	04	-21	-03	03	09	-12	20	80
T ₆	21	75	-11	25	01	15	-15	-07	10	-04	06	03	23	79
T ₇	09	84	-07	20	-01	11	11	-14	-12	00	-02	-12	18	86
T ₈	47	37	-30	35	-33	03	-02	03	-03	-06	10	-16	13	74
T ₉	31	10	-28	30	-22	04	13	-03	-06	-19	22	-58	07	78
T ₁₀	20	32	-16	75	-08	13	03	-02	07	-07	11	-12	20	83
T ₁₁	43	28	-19	40	-38	10	-01	-11	-08	-15	18	-29	01	78
T ₁₂	23	49	-06	16	-16	05	56	-12	-23	03	21	03	14	80
T ₁₃	13	12	-07	16	-78	13	10	-10	-04	04	09	-23	-07	78
T ₁₄	31	23	-21	64	-22	16	14	-23	-08	-20	23	-14	-01	87
T ₁₅	29	16	-22	30	-28	31	29	01	-25	-33	29	-13	-11	79
T ₁₆	26	03	-43	36	-29	08	08	-19	-02	-53	25	-06	-04	87
T ₁₇	23	-04	-21	24	-64	08	10	-01	-07	-38	28	-09	11	83
T ₁₈	16	35	-12	28	-26	03	53	-12	34	-24	14	-16	13	84
T ₁₉	27	-01	-24	38	-52	09	20	-27	-02	-39	02	-19	01	85
T ₂₀	51	06	-29	27	-35	04	33	-29	-01	-10	27	-14	04	85
T ₂₁	48	04	-10	02	-62	34	01	-00	03	-21	07	-01	-06	79
T ₂₂	49	13	-08	17	-51	07	18	-21	-15	07	26	-14	-05	75
T ₂₃	47	12	-17	07	-71	05	03	-01	02	-09	-02	07	02	79
T ₂₄	48	08	-13	26	-38	14	32	-26	-15	-16	21	-00	09	76
T ₂₅	29	07	-67	12	-29	18	01	13	-06	-23	18	-02	03	78

Exhibit VII (continued)

Variable	Factor													Communality
	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈	C ₉	C ₁₀	C ₁₁	C ₁₂	C ₁₃	
T ₂₆	36	12	-39	24	-45	23	30	08	31	05	13	04	11	83
T ₂₇	29	05	-27	14	-34	15	20	00	08	-38	32	-14	35	75
T ₂₈	29	28	-09	33	-04	22	04	-67	11	-10	07	-03	03	81
T ₂₉	16	11	-28	12	-38	55	21	-09	-01	-29	09	-27	21	83
T ₃₀	33	02	-40	15	-30	02	27	-40	-15	-17	28	-27	00	82
T ₃₁	30	22	-23	34	-34	26	26	-00	-10	-16	-02	-28	39	83
T ₃₂	32	11	-19	12	-55	15	05	24	-06	-14	29	08	19	69
T ₃₃	14	-06	-49	-04	-51	25	18	10	-01	-05	32	-12	12	77
T ₃₄	15	09	-11	15	-25	78	03	-17	-02	-07	14	-05	02	80
T ₃₅	17	34	-06	72	-16	10	06	-27	13	02	16	-02	20	85
T ₃₆	23	14	04	31	-23	17	20	-02	-03	-08	71	-05	15	82
I ₃₇	18	51	-24	07	-11	13	-04	-13	04	-12	58	-12	-07	77
I ₃₈	07	84	07	08	-04	04	14	-04	09	-14	16	-11	-04	82
I ₃₉	33	33	-29	21	-06	08	07	04	-04	-11	49	-35	-18	77
I ₄₀	32	26	-51	30	-11	15	-04	-10	-06	-07	10	-46	-12	80
I ₄₁	11	84	-05	12	-10	00	23	08	07	02	14	-07	-13	84
I ₄₂	11	79	-15	14	-07	09	-00	07	21	-06	05	04	-15	77
I ₄₃	12	86	-02	09	-01	11	14	-01	01	-04	05	-04	-26	86
I ₄₄	68	18	-22	30	-12	03	-02	14	-08	-04	13	-22	04	75
I ₄₅	40	19	-11	28	-12	09	05	-08	05	-07	17	-69	06	84
I ₄₆	21	33	-16	65	-09	10	11	09	27	-15	17	-20	-19	84
I ₄₇	55	27	-18	43	-22	12	-03	-13	-07	-15	14	-27	-09	80
I ₄₈	23	51	02	10	-11	18	67	02	05	-03	06	-08	-08	83
I ₄₉	40	29	12	02	-52	21	-03	-13	04	-02	12	-43	11	80
I ₅₀	45	22	-18	56	-12	21	14	-16	00	-18	16	-28	-04	85

Exhibit VII (continued)

Variable	Factor													Communi- nality
	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈	C ₉	C ₁₀	C ₁₁	C ₁₂	C ₁₃	
I ₅₁	36	15	-23	31	-14	28	24	07	-27	-36	32	-27	-09	85
I ₅₂	50	14	-26	16	-15	15	-00	-12	02	-62	15	-13	03	85
I ₅₃	49	14	-03	29	-43	19	-06	-09	-02	-43	17	-12	-01	80
I ₅₄	29	30	04	23	-10	11	37	-13	51	-15	11	-23	07	76
I ₅₅	52	20	-20	40	-25	12	16	-18	-02	-35	09	-25	03	83
I ₅₆	72	07	-14	29	-17	01	26	-19	07	-10	21	-23	-02	86
I ₅₇	77	13	-02	06	-29	26	06	-09	03	-15	07	-11	-03	82
I ₅₈	79	16	-09	06	-19	09	13	-14	-02	-00	13	-17	07	80
I ₅₉	71	18	-07	13	-38	10	04	-15	08	-08	-03	-09	00	76
I ₆₀	64	19	-13	17	-20	19	23	-10	09	-25	26	05	-02	78
I ₆₁	52	12	-31	15	-11	23	-01	-08	-19	-32	34	-04	13	74
I ₆₂	55	25	-16	23	-24	14	25	-06	41	-03	07	-04	17	80
I ₆₃	58	22	-17	03	-09	30	12	-00	10	-42	17	-16	28	85
I ₆₄	37	36	-01	29	-01	14	04	-52	28	-10	10	-11	02	76
I ₆₅	52	06	-24	25	-04	43	18	-05	13	-04	23	-25	23	81
I ₆₆	48	04	-30	20	-23	12	17	-34	-11	-14	28	-35	01	80
I ₆₇	50	15	-15	35	-24	32	18	-00	-08	-15	02	-38	22	83
I ₆₈	56	15	-08	29	-28	46	-03	19	-05	-13	27	03	-02	85
I ₆₉	35	04	-36	06	-28	48	22	19	04	-02	36	-18	-03	81
I ₇₀	45	24	-08	17	-10	70	05	-14	06	-08	14	-02	-05	85
I ₇₁	17	36	-12	72	-14	08	18	-16	19	-10	11	-10	-10	24
I ₇₂	37	15	03	40	-12	21	14	09	-02	-04	58	-21	08	80
I ₇₃	09	-16	-18	-11	-14	04	08	05	-68	-07	14	-09	04	61

as a variable indicating the importance attributed to the task. Consequently factors presented in FORM C consist of a task description, a factor loading for a "time" variable for time spent and a factor loading for an "impo" variable indicating importance. The original variable numbers used in FORM A and FORM B will be omitted. They are included in Appendix F for purposes of reference.

Appendix F includes the variables with the highest correlations with the DS variable. Variables with correlations equal to or greater than .10 ($p=.25$) were included. Examination of the 36 selected variables indicated a preponderance of tasks associated with shared decision-making (V59, V50, V40, V48, V36) research and innovation (V51⁺, V62, V49, V57), and aggressive educational planning (V39, V51⁺, V49, V57). Those variables with low or negative correlations dealt with routine administration tasks (V38, V4, V8) or disciplinary action (V31). FORM C, then, served an integrative function in placing together and factor analyzing selected variables from forms A and B.

Factor C₁

- .79 Impo; Participate in meetings initiated and chaired by staff.
- .77 Impo; Assist in innovative curriculum development based on current research.
- .72 Impo; Confer with staff to determine policy and operational procedures.
- .71 Impo; Develop and present plans for establishing new educational program.

- .68 Impo; Evaluate your own techniques and methods.
- .64 Impo; Perform tasks in response to requests by staff.
- .58 Impo; Identify and utilize community resource persons.
- .56 Impo; Participate in or conduct research studies.
- .55 Impo; Direct group discussion and conferences.
- .55 Impo; Plan and schedule duty assignments of instructional personnel.
- .52 Impo; Formulate objectives and select instructional content.
- .52 Impo; Develop proposals for external financial aid.
- .52 Impo; Promote and interpret school program and policy in the community.
- .52 Time; Visit other schools to obtain information for curriculum planning.
- .51 Time; Confer with staff to determine policy and operational procedures.
- .50 Impo; Participate in in-service training programs.
- .50 Impo; Organize advisory committees.
- .49 Impo; Prepare materials and inform community of new developments and trends in education.
- .49 Time; Participate in meetings initiated and chaired by staff.
- .48 Time; Assist in innovative curriculum development based on current research.
- .48 Impo; Confer with staff to determine personnel requirements.
- .48 Time; Perform tasks in response to requests by staff.
- .47 Time; Evaluate your own techniques and methods.

Factor C_1 was characterized by high loadings on variables dealing with innovation and participative interaction. The instructional element was clearly represented and routine administrative tasks were conspicuously absent in this factor. The loadings on the importance variables were consistently higher than the loadings on time spent for the same task description. This factor was named Instructional Leadership.[✓]

Factor C_2

- .86 Impo; Arrange for repair of instructional aids and equipment.

- .84 Time; Arrange for repair of instructional aids and equipment.
- .84 Impo; Inventory and maintain records of supplies or materials.
- .84 Impo; Prepare work requests (e.g.: maintenance and repair).
- .79 Impo; Maintain administrative files.
- .76 Time; Inventory and maintain records of supplies or materials.
- .75 Time; Maintain administrative files.
- .73 Time; Prepare work requests (e.g.: maintenance and repair).
- .51 Impo; Distribute and collect instructional materials.
- .51 Impo; Develop policies for use of facilities and equipment by non-school personnel and organizations.
- .37 Time; Evaluate your own techniques and methods.
- .36 Impo; Plan and schedule duty assignments of instructional personnel.
- .36 Impo; Administer disciplinary action as appropriate.
- .35 Time; Evaluate lesson plans and units prepared by staff.
- .34 Time; Administer disciplinary action as appropriate.
- .33 Time; Confer with administrative staff to determine personnel requirements.
- .33 Impo; Confer with administrative staff to determine personnel requirements.
- .33 Impo; Devise means of maintaining student discipline.
- .32 Time; Devise means of maintaining student discipline.

Factor C_2 consisted of maintenance tasks supportive of but not directly involved in instruction. The loadings on "time" and "impo" variables were quite similar. Only one variable was not represented in both dimensions. This would suggest that factor C_2 represented administrative tasks that are generally accepted as important and executed accordingly. This cluster was named Operational Management.

Factor C_3

- .74 Time; Prepare budget.
- .67 Time; Develop proposals for external financial aid.
- .51 Impo; Prepare budget.

- .49 Time; Perform consultant services to schools and professional educational organizations.
- .44 Time; Confer with administrative staff to determine personnel requirements.
- .43 Time; Organize advisory committees.
- .40 Time; Confer with staff to determine personnel requirements.
- .39 Time; Formulate objectives and select instructional content.
- .36 Impo; Perform consultant services to schools and professional educational organizations.
- .31 Impo; Develop proposals for external financial aid.
- .30 Impo; Confer with staff to determine personnel requirements.
- .30 Time; Develop policies for use of facilities and equipment by non-school personnel and organizations.
- .30 Impo; Evaluate your own techniques and methods.

This cluster loaded most heavily on variables dealing with financial and human resources. The variables with lower loadings were related to the application and allocation of these resources. Factor C_3 was named Educational Planning because most of the variables related to preparations for future activity.

Factor C_4

- .75 Time; Devise means of maintaining student discipline.
- .72 Time; Administer disciplinary action as appropriate.
- .72 Impo; Administer disciplinary action as appropriate.
- .65 Impo; Devise means of maintaining student discipline.
- .64 Time; Interpret policies, directives, and regulations to staff and students.
- .56 Impo; Interpret policies, directives, and regulations to staff and students.
- .56 Impo; Maintain liaison with other schools, colleges, and universities.
- .43 Impo; Direct group discussion and conferences.
- .40 Time; Direct group discussion and conferences.
- .40 Impo; Confer with guidance counselors.

- .40 Impo; Promote and interpret school program and policy in the community.
- .38 Time; Promote and interpret school program and policy in the community.
- .36 Time; Organize advisory committees.
- .35 Impo; Participate in in-service training programs.
- .35 Time; Evaluate your own techniques and methods.
- .34 Time; Participate in in-service training programs.
- .33 Time; Prepare budget.
- .33 Time; Plan and schedule duty assignments of instructional personnel.
- .31 Time; Confer with guidance counselors.
- .30 Impo; Prepare budget.
- .30 Time; Review and evaluate qualifications of prospective staff.

The variables represented in this cluster pertained to interaction and group behavior. A number of variables emphasized communication. The loadings of the "time" and "impo" variables were quite similar. The task "Prepare budget" existed as somewhat of an anomaly. This factor was labeled Behavioral Management because of the numerous variables which indicated activities designed to modify behavior.

Factor C₅

- .78 Time; Plan and participate in team-teaching.
- .71 Time; Develop and present plans for establishing a new educational program.
- .64 Time; Prepare materials and inform community of new developments and trends.
- .62 Time; Assist in innovative curriculum development based on current research.
- .52 Impo; Plan and participate in team-teaching.
- .52 Time; Promote and interpret school program and policy in the community.
- .51 Time; Perform consultant services to schools and professional educational organizations.
- .51 Time; Participate in meetings initiated and chaired by staff.

- .45 Time; Formulate objectives and select instructional content.
- .43 Impo; Prepare materials and inform community of new developments and trends in education.
- .38 Impo; Develop and present plans for establishing a new educational program.
- .38 Time; Visit other schools to obtain information for curriculum planning.
- .38 Time; Perform tasks in response to requests by staff.
- .38 Time; Direct group discussion and conferences.
- .35 Time; Participate in or conduct research studies.
- .35 Time; Confer with staff to determine policy and operational procedures.
- .35 Time; Participate in in-service training programs.
- .34 Time; Identify and utilize community resource persons.
- .33 Time; Evaluate your own techniques and methods.
- .30 Time; Confer with staff to determine personnel requirements.

The highest loadings in factor C_5 were on planning, developing and implementing innovative educational programs. This cluster was characterized by an emphasis upon administrative interaction with staff, an impetus for change and open interaction with other schools and the community. Factor C_5 was designated Change Agent.

Factor C_6

- .78 Time; Pursue advanced degree program.
- .70 Impo; Pursue advanced degree program.
- .48 Impo; Perform consultant services to schools and professional educational organizations.
- .46 Impo; Participate in or conduct research studies.
- .43 Impo; Visit other schools to obtain information for curriculum planning.
- .34 Time; Assist in innovative curriculum development based on current research.
- .32 Impo; Participate in in-service training programs.
- .31 Time; Maintain liaison with other schools, colleges or universities.

Factor C_6 represented a measure of what was deemed important. Only the variable "Pursue advanced degree program"

had a high loading on "time." All seven variables implied development of the individual or the profession and the pursuit of new knowledge. This cluster was named Desired Professional Development. It should be noted that four variables carried loadings indicating that respondents felt the task was important, but there was no evidence to indicate that time was being spent on that activity.

Factor C₇

- .67 Impo; Distribute and collect instructional materials.
- .56 Time; Distribute and collect instructional materials.
- .55 Time; Visit other schools to obtain information for curriculum planning.
- .53 Time; Evaluate lesson plans and units prepared by staff.
- .37 Impo; Evaluate lesson plans and units prepared by staff.
- .33 Time; Confer with staff to determine policy and operational procedures.
- .32 Time; Perform tasks in response to requests by staff.
- .30 Time; Formulate objectives and select instructional content.

Factor C₇ was designated Instructional Support because of the facilitative impact of the cited tasks upon instruction.

Factor C₈

- .67 Time; Plan and schedule duty assignments of instructional personnel.
- .52 Impo; Plan and schedule duty assignments of instructional personnel.
- .40 Time; Confer with staff to determine personnel requirements.
- .34 Impo; Confer with staff to determine personnel requirements.

This cluster was small but the content was clear and consistent. Factor C₈ was named Personnel Management.

Factor C₉

- .68 * ; Differentiated staffing.
- .51 Impo; Evaluate lesson plans and units prepared by staff.
- .34 Time; Evaluate lesson plans and units prepared by staff.
- .31 Time; Formulate objectives and select instructional content.

*Note: The variable, differentiated staffing, was calculated as a point-biserial variable.

Factor C₉ was the only cluster in FORM C which included a loading on the DS variable in excess of .30. Although factor C₉ included only four variables, the emphasis upon performance criteria and evaluation of instruction was clearly demonstrated. This cluster was named Differentiated Staffing.

Factor C₁₀

- .62 Impo; Organize advisory committees.
- .53 Time; Organize advisory committees.
- .43 Impo; Prepare materials and inform community of new developments and trends in education.
- .42 Impo; Identify and utilize community resource persons.
- .39 Time; Promote and interpret school program and policy in the community.
- .38 Time; Prepare materials and inform community of new developments and trends in education.
- .38 Time; Identify and utilize community resource persons.
- .36 Impo; Maintain liaison with other schools, colleges, and universities.
- .35 Impo; Promote and interpret school program and policy in the community.

- .33 Time; Maintain liaison with other schools, colleges, and universities.
- .32 Impo; Develop proposals for external financial aid.

This factor was comprised of variables characterized by an open communicative perspective. The interactive attributes of factor C_{10} effected selection of the label, Community Relations for this cluster.

Factor C_{11}

- .61 Time; Develop policies for use of facilities and equipment by non-school personnel and organizations.
- .58 Impo; Develop policies for use of facilities and equipment by non-school personnel and organizations.
- .58 Impo; Confer with guidance counselors.
- .53 Time; Confer with administrative staff to determine personnel requirements.
- .49 Impo; Confer with administrative staff to determine personnel requirements.
- .36 Impo; Perform consultant services to schools and professional educational organizations.
- .34 Impo; Develop proposals for external financial aid.
- .32 Time; Perform consultant services to schools and professional educational organizations.
- .32 Time; Identify and utilize community resource persons.
- .32 Impo; Maintain liaison with other schools, colleges or universities.

Factor C_{11} did not present a cluster of clearly related variables. Neither the instructional nor the routine administrative elements were present. Variables included in factor C_{11} were general and somewhat secondary to primary administrative functions. It was largely on the basis of its general nature that this factor was named Ancillary Administrative Tasks.

Factor C₁₂

- .69 Impo; Review and evaluate qualifications of prospective staff.
- .58 Time; Review and evaluate qualifications of prospective staff.
- .46 Impo; Prepare budget.
- .43 Impo; Plan and participate in team-teaching.
- .38 Impo; Participate in in-service training programs.
- .35 Impo; Confer with administrative staff to determine personnel requirements.
- .35 Time; Confer with staff to determine personnel requirements.

This factor was largely a representation of what was deemed important. The emphasis upon staff selection, evaluation and development led to the designation of Personnel Utilization for this factor.

Factor C₁₃

- .42 Time; Prepare work requests.
- .39 Time; Participate in in-service training programs.
- .35 Time; Identify and utilize community resource persons.

Factor C₁₃ did not present sufficient data to provide a reliable basis for interpretation. The heterogeneity of the variables discouraged any attempt at speculation as to inferred relationships.

Summary. FORM C was comprised of variables which correlated ($p=.25$) with the DS variable (V74) in forms A and B. As such, the factors were descriptive of the DS concept. It should be noted, however, that this did not indicate that the DSP group was different from the NDSP group.

Form C presented a potential opportunity for the derivation of factors which might discriminate between the DSP and NDSP groups. Only one factor (C_9) emphasizing instructional planning loaded on DS.

The selected variables correlating with DS, included in Appendix F, exhibit an emphasis upon participative decision-making, research and innovation and activity to effect change and progress. The lowest correlations with DS were on routine administrative tasks.

FORM C presented 13 factors. Four factors, C_1 (Instructional Leadership), C_3 (Educational Planning), C_7 (Instructional Support), and C_9 (Differentiated Staffing) dealt with instruction. The emphasis upon change and innovation was suggested by factors C_4 (Behavioral Management), C_5 (Change Agent), and C_6 (Desired Professional Development). Non-instructional administrative tasks and business affairs were not heavily represented in any of the factors in FORM C. Factor C_2 (Operational Management) and factor C_{11} (Ancillary Administrative Tasks) included many of the ongoing "house-keeping" duties of educational administration.

The emphasis throughout the FORM C factors was upon instruction, interaction of personnel and change. The general impression given by the twelve factors which were interpreted and named was one of "openness" and receptiveness to change and the aggressive pursuit of new ideas.

Findings in the Literature

The first phase of this study took the form of research in the literature. A number of implications for the role of the principal in a DS situation were clearly and consistently presented by the literature. The general view was that changes in the traditional staff hierarchy and reorganization of the institutional structure of the school effected a number of identifiable changes. The literature generally stated that under DS:

1. There was a major shift towards greater participation of teachers in the areas of decision-making and instructional planning (Moore, 1967; Allen, 1967; English, 1969; Caldwell, 1970; Cooper, 1972).

2. The principal was viewed more as the educational systems builder and his functional role was presented as that of a social engineer (Olson, 1971).

3. Professional talent was used more effectively as roles were derived from matching competencies to job requirements (Lieberman, 1960; Allen, 1967; Trump, 1961).

4. A professional setting created by collegial decision-making resulted in status being based upon performance contributing to the realization of stated goals (Mann, 1971).

5. Paraprofessional staff freed professional staff, including the principal, of non-professional tasks (Edelfelt, 1967).

~~8.~~ Peer evaluation and interdependence of the staff tended to improve standards (Sadler, 1971; Temple City, 1971).

✓7. Administrative process and instructional planning were based more on needs determined by greater communication between all constituent elements of the school system (Mann, 1971; English, 1969).

~~8.~~ Career opportunities and job-satisfaction were enhanced by creating opportunities for advancement for teachers without them having to leave their role as a classroom teacher (Rottier, 1971; Plantz, 1971; Temple City, 1971).

✓9. The teacher-administrator relationship became more of a professional partnership than a superior-subordinate situation (Bridges, 1964; English and Zaharis, 1970; Saxe, 1968).

These findings derived from a comprehensive review of the literature speak to the role advocated for the DS principal. Examination of current writings on the subject of DS revealed that the literature was still very much a composite of projections based upon theory and views based upon practice and limited empirical data. Often the distinction between what was being theorized and what was in practice was not clearly made by writers.

The findings summarized in this section and the general treatment of DS in Chapter 2 were intended to form the basis for interpreting the findings of the ATI survey.

Discussion of the Findings

The preceding section presented the role predicated for the DS principal by the literature. Factor analysis of ATI data from DSP and NDSP respondents resulted in the derivation of thirteen factors in each of the three forms. The research design was exploratory and direct comparison of the factors derived in FORM A, FORM B, and FORM C was not intended.

The factors of FORMS A and B exhibited stability in a comparison of a preliminary analysis with 97 subjects and the final analysis with 126 subjects. Although FORM A was derived from data dealing with the time spent on tasks and FORM B dealt with ratings of importance, the structural patterns of factors in the two forms were quite similar.

The identification and labeling of factors is a highly arbitrary process based upon subjective interpretation. Factors from FORM A and FORM B were interpreted and named. FORM C served as a synthesis in that it factor analyzed selected variables from FORMS A and B as the primary attempt at discriminating between the two research groups. The structural pattern of factors in FORM C was quite similar to that of factors in FORMS A and B. In each of the three forms only one factor (A_5 , B_4 , C_9) included a high loading on the DS variable. Since DS or non-DS did not load on any of the other twelve factors in FORMS A, B, or C one might conclude that

there was little or no difference in perceived administrative role as reported by the two groups.

Analysis of the item content of the factors demonstrated that the emphasis in time spent and in importance attributed to tasks was consistent with the general concepts of the DS movement. Three general factors in each of the three forms dealt with broad administrative functions. Each form presented one factor with high loadings on variables suggestive of innovation and change. Factors dealing with general operational administration and supervision of instruction were present in each form. Factor analytic techniques did serve well in defining the role of the responding principals. There was, however, no clear evidence that this role was peculiar to either research group or to the DSP group in particular.

A number of factors such as A_1 (Educational Leadership), A_4 (Human Relations), C_{10} (Community Relations), A_9 (Auditing Student Programs), and C_5 (Change Agent) were consistent with basic concepts associated with DS. Since these factors were descriptive of administrative role, and because they coincided with DS theory, one might conclude that the entire research group was influenced by the DS school of thought or by a concurrent philosophy. The factors derived from forms A, B and C provided ample evidence that there was an emphasis upon participative decision making and an acceptance of the need for change.

The factors derived from FORM C were characterized by greater emphasis upon instruction and a more "open" perspective than factors in forms A or B. Factor C_5 (Change Agent) and C_9 (Differentiated Staffing) coincided with the participative and "needs assessment" emphasis of the DS literature. Since all variables in FORM C had correlations equal to or greater than .10 ($p=.25$) with DS, any differentiation between the DSP and NDSP groups should have been evident in this third factor analysis.

The three factors that did have loadings on DS, and hence suggested some basis for discrimination between the two groups, were A_5 , B_4 , and C_9 . The salient attributes of these factors were an emphasis upon research, liaison and consulting with other educational institutions, determining personnel requirements and planning for instruction. These particular role attributes of the DS principal were consistent with the general emphasis suggested by FORM C. This would suggest that refinement of these elements might provide a profitable avenue for further study.

Chapter 5

Summary, Conclusions, Implications and Recommendations

The literature and the nature of factors derived in the study raised a number of provocative issues and questions. Detailed pursuit of these singular elements would have been interesting. It was deemed desirable, however, to confine the exploratory nature of this study to the parameters established for the problem cited in Chapter 3.

Summary

This study was undertaken on the assumption that basic elements inherent in the DS concept would manifest themselves as administrative role behaviors. Further it was assumed that factor analytic techniques could serve to identify structural patterns in factors which might provide a basis for differentiating between the role of DS principals and non-DS principals. A research instrument, the ATI, was developed to survey the role perceptions of all DS principals and a control group of randomly selected non-DS principals in school districts cooperating with the U.S.O.E., School Personnel Utilization, DS projects.

The study was made in two phases. In the first phase a comprehensive review of the literature concerning DS and

the DS administrator was conducted to determine the role advocated for the DS principal. The second phase consisted of three factor analyses to derive factors from test variables of the ATI dealing with time spent on and importance attributed to 73 administrative tasks.

Phase I was executed over a period of one year by collecting, editing and reviewing the literature dealing with DS. Emphasis was placed upon isolating the major concepts dealing with the role of the DS principal. The literature indicated that under DS there was a shift towards greater participation of staff in decision making, instructional planning and in staff evaluation. The principal was viewed as a social engineer within a collegial setting characterized by participative supervision and open communication. Professional talent was utilized more effectively through role differentiation, assignment on the basis of competency and the use of paraprofessional staff for non-professional duties. DS was portrayed as contributing to career opportunity and job satisfaction by providing for advancement within the teaching profession.

The basic elements articulated by the DS literature were incorporated into the 73 task descriptions of the ATI. The collection of data and analysis of ATI responses constituted Phase II of the study. The research instrument was administered in 17 school districts cooperating with the USOE, School Personnel Utilization - DS projects. All DS principals

and a randomly selected control group of non-DS principals were surveyed. Responses were received from 49 (68%) of the DSP group and from 107 (50%) of the NDSP group. One-hundred and twenty-six "complete" questionnaires were processed.

Data from the ATI were factor analyzed. FORM A treated responses dealing with time spent on tasks, FORM B dealt with importance attributed to these tasks, and FORM C factor analyzed responses to the 36 variables correlating most highly with DS in forms A and B. Only one factor in each of the three forms contained the DS variable. The remaining factors presented no evidence which would serve to discriminate between the administrative role of the DSP or the NDSP group as indicated by responses to the ATI.

Conclusions

The role of the DS principal was described by Eve and Peck (1972) as "existing primarily as a support mechanism for a variety of instructional tasks within the school system [p. 95]." Olson (1971) viewed the DS principal's role as that of the social manager governed by deep convictions in the value of democratic processes and exercising highly developed interpersonal skills. The central theme of the DS concept as it related to the principal's role was one of participative collegial action where the principal interacted with his staff team to apply differentiated role assignments toward achieving better instruction for the students.

This section will deal with conclusions viewed in this context, but based on the overall outcomes of the study.

1. On the basis of item content, twelve of the thirteen factors in each of the three ATI forms showed no evidence to indicate that the role of the DS principal was perceived or reported as significantly different ($p=.01$) from the role of the non-DS principal.

All three factor analysis forms derived general factors such as A_1 (Educational Leadership), B_2 (Administrative Affairs), C_1 (Instructional Leadership) which suggested a broad scope of administrative behavior. The DS variable did not load on any of these factors, so one might infer that they were applicable to the entire research population including both the DSP and NDSP groups. Of a total of thirty-nine factors, thirty-six exhibited no significant loadings on the DS variable ($p=.01$).

2. The item content of one factor in each of the three forms suggested that the DS principal was characterized by an open perspective regarding research, consulting and liaison with other institutions, and that he emphasized the formulation of objectives, the selection of instructional content and the evaluation of instructional planning.

This conclusion was supported by the derivation of three factors. Factor A_5 indicated that the DS principal spent time participating in research, performing consultant services to schools, and maintaining relations with other schools or colleges. Factor B_4 indicated that DS principals attributed importance to liaison with other schools, but this factor also emphasized determining personnel requirements and developing proposals for external financial aid. The emphasis upon instructional process was demonstrated by factor C_9 , derived from variables correlating with DS. Factor C_9 had loadings only on the DS variable and on three items dealing with instruction. Scrutiny of the 36 variables correlating most highly with DS (Appendix F) and examination of factors A_5 , B_4 , and C_9 suggest that the DS principal perceived his role in a broad sense, and that he was less confined to the bounds of a traditional role as building administrator.

3. The prominence in all three forms, of role behaviors associated with instruction, human relations, and conferring with staff regarding personnel requirements and instructional planning suggested that promotion of the DS concept and dissemination of its salient attributes had influenced the administrative behavior of both DS and non-DS principals.

The general factors A_1 , B_1 and C_1 exhibited item content consistent with attributes of DS. A number of more precise

factors, A_6 (Instructional Leadership), C_5 (Change Agent), B_6 (Programming) and B_{11} (Educational Development) could, in terms of their content, have been labeled as DS factors. None of these factors, however, included loadings on DS. This would support the conclusion that the DS concept had influenced all principals and that these role behaviors were not at all peculiar to DS situations. It should be noted that this study did not explore structural, hierarchical or organizational differences between the schools of two groups. The fact that none of the "arbitrary or unilateral" task items clustered in factors with loadings on DS or non-DS merits consideration. None of the variables which might have been antithetical to the DS concept clustered, nor did factors such as A_2 (Administrative Control), A_3 (Traditional Administration), or A_7 (Operational Control) have loadings on non-DS.

4. Professional growth and development for principals was viewed as important by the entire research population, yet there was evidence of a lack of effective provision for or engagement in such endeavors.

All three forms included clearly defined factors (A_{11} , B_{11} , C_6) dealing with the professional development. The loadings on variables dealing with advanced formal study, participation in research and professional organizations, visiting other schools, maintaining liaison with educational

institutions, and consulting work were heavy in all three factors. Analysis of factor C_6 , which juxtaposed the loadings on the "time spent" and "importance" variables for each selected item, presented particular evidence in support of the preceding conclusion.

The loadings on "Pursue advanced degree program" were high for both "time spent" and "importance." The variables: "Participate in or conduct research studies," "Perform consultant services. . .," "Visit other schools. . ." and "Participate in in-service training programs" had high loadings for "importance" but did not load at all as a "time spent" variable. This would indicate a recognition of the importance of professional development but limited opportunity or means for achieving such growth in the field. The salience of time spent on formal study and the disparity between time devoted to other developmental activities deemed important suggested a need for greater emphasis upon field training of principals.

5. DS schools tended to be somewhat smaller, were administered by principals with less principal's experience, and had a much higher proportion of supportive staff than non-DS schools.

The general data collected with the ATI indicated that the mean enrollment of DS schools was 852 as compared to 967 in non-DS schools. Principals in the DSP group reported an average of 8.3 years as a principal, while NDS principals had

10.3 years of experience. The preponderance of paraprofessional staff, interns and student teachers in DS schools was consistent with basic tenets of DS. More supportive staff were present in DS schools even though these schools tended to be somewhat smaller.

6. The overall approach used in this study appeared to have promise as a model for producing more definitive descriptions of administrative role in settings where divergence from traditional patterns of behavior is purported.

The exploratory capabilities of factor analytic techniques provided potential neutrality in determining whether certain administrative behaviors were unique to one group or common to both.

In deriving the preceding conclusions it was recognized that selecting the DSP and NDSP research groups from within the same school districts might minimize the identification of differences. Assuming that there might be differences, it was felt that the existence of common conditions of employment would preclude attributing any found differences to variations such as policy or job requirements.

Implications

This study seemed to demonstrate that many of the basic elements of DS were recognized by the entire research population, but not to the extent advocated by the literature.

This observation presented two implications: (1) The pervasive nature of the DS concept and the major effort at dissemination of the basic principals had impacted upon all schools within the cooperating districts thereby minimizing differences, or (2) The role behavior of DS principals and the non-DS principals may have been governed by norms within the total administrative group so that changes in role were gradual and general. These implications were in part substantiated by the loadings of variables on factor C₁ (Instructional Leadership). In all twenty-seven variables, but particularly in those dealing with innovation, the loadings on "importance" were much higher than the loadings on "time spent." This would indicate that principals reported a lag in their acting upon tasks to which they already attributed importance. This finding was quite consistent with research evidence regarding innovation and resistance to change. The marked discrepancy between time spent and importance attributed to tasks suggests the need for study of this dichotomy.

The DS literature placed great emphasis upon participative management, collegial action and shared decision-making. A number of factors, but none of the three with loadings on DS, included high loadings on variables such as "Confer with staff. . .," "Plan and participate in. . .," "Organize advisory committees," and "Participate in meetings initiated and chaired by staff." On the basis of item content, the

"Human Relations" factor, which was clearly defined in all three forms, indicated a recognition among principals of the need for participative action. The research evidence that there is major divergence between the perceptions of teachers and administrators in educational matters would indicate that more than structural role differentiation is required to effect collegial interaction.

Statements in the DS literature referred to the principal as a social manager and cited trends in DS projects to de-emphasize structure and to take organizational cues from instructional needs thereby implying a shift in the DS movement. This study did not detect the presence of arbitrary or dictatorial tendencies in the role behavior of either group of research subjects. One large factor in each of the three analyses focused upon operational management or non-instructional administrative affairs. This would imply that the operational management of the school was emphasized by all principals. The prominence of human relations and personnel relations in all three forms attested to the impact of behavioral theory upon educational administrators in general. It would appear that the influence of administrative theorists such as Likert and Bennis was reaching principals by other means as well as by the DS movement. One might infer from this and from the conclusion regarding a need for additional means of achieving professional growth that greater attention is required for

in-service training and development of principals. Viewed in the context of the militant stance taken in the literature regarding shared decision-making one could conclude that such training should emphasize the process of communication as it related to collective action.

The DSP group surveyed in this study administered schools which were selected on the basis of criteria derived from Dwight Allen's model. These criteria emphasized structural differentiation although the consequences of such differentiation had to do with instruction. This study accepted the designation of the DSP and NDSP groups by the original criteria which determined funding of the DS schools. Assuming that these criteria imply differences in the organizational structure of DS and non-DS schools, and since little or no difference was found in the role of the two groups raises a provocative issue. The issue is whether staff differentiation and the concomitant organizational changes do effect changes in the role behavior of staff members when the formal role prescription is changed. Treatment of this question was beyond the scope of this study.

Recommendations

The primary recommendation is that this study be replicated with a control group of non-DS principals selected from school districts other than those including DS projects. Soliciting the perceptions of teachers regarding the time spent by the principal on administrative tasks would provide

an additional dimension not present in this study. It is suggested that:

1. Further study of the administrator's role and the organizational climate within DS situations is required.
2. A study of the decision-making process within DS is needed. Such an investigation should include all constituents within the DS situation.
3. Study is needed to investigate the extent of role differentiation and the scope of staff members' duties in DS situations as compared to non-DS situations.
4. Further study is required in the area of para-professional staff to determine their role within a differentiated staff as compared to their role in a traditional setting.
5. The opportunity for meaningful professional growth and development of practicing school principals warrants specific attention in a study.

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APPENDIX A
Cover Letters Sent to
Research Subjects

UNIVERSITY OF HOUSTON
COLLEGE OF EDUCATION
CULLEN BOULEVARD
HOUSTON, TEXAS 77004

166

ADMINISTRATION AND SUPERVISION

The purpose of this letter is to request your participation and assistance in the study of the principal's role in school personnel utilization.

As a public school principal you are aware of the numerous innovative concepts affecting education today. Team teaching, flexible scheduling, differentiated staffing etc. exemplify concepts currently influencing school administration.

This research, conducted in conjunction with projects of the USOE Bureau of Educational Personnel Development, focuses upon a principal's perceived role as it pertains to basic administrative tasks. Your perception of your role, as indicated by completion of the enclosed instrument, will contribute valuable data to an extensive survey of selected principals.

The information you provide will be treated in confidence. Identification is required and maintained only for the collection of data. Individual principals or schools will not be identified in the study.

Would you please assist us by completing the questionnaire and returning it, within one week, in the enclosed business reply envelope? I do hope you find the few minutes required to complete the instrument interesting.

Having sat at the overburdened principal's desk, I appreciate your taking time for this study. Thank you. It is my hope that this research will provide valuable information to the benefit of education.

Appreciatively,

Elmer E. Froese

Enclosure

UNIVERSITY OF HOUSTON
COLLEGE OF EDUCATION
CULLEN BOULEVARD
HOUSTON, TEXAS 77004

167

ADMINISTRATION AND SUPERVISION

As principal of a school with differentiated staffing, you are aware of educators' current interest in innovative concepts. You are probably also aware of how little attention has been given to direct study of the implications of DS for the principal.

The purpose of this letter is to request your participation and assistance in the study of the principal's role in school personnel utilization.

This research, conducted in conjunction with projects of the USOE Bureau of Educational Personnel Development, focuses upon a principal's perceived role as it pertains to basic administrative tasks. Your perception of your role, as indicated by completion of the enclosed instrument, will contribute valuable data to an extensive survey of selected principals.

The information you provide will be treated in confidence. Identification is required and maintained only for the collection of data. Individual principals or schools will not be identified in the study.

Would you please assist us by completing the questionnaire and returning it, within one week, in the enclosed business reply envelope? I do hope you find the few minutes required to complete the instrument interesting.

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Appreciatively,

Elmer E. Froese

Enclosure

UNIVERSITY OF HOUSTON

COLLEGE OF EDUCATION

CULLEN BOULEVARD

HOUSTON, TEXAS 77004

168

ADMINISTRATION AND SUPERVISION

Please excuse my imposing upon your busy schedule again. Some two weeks ago a research instrument, with a letter of endorsement for the study from Jerry Melton, coordinator of the National Cluster Coordination Centre, of the SPU, differentiated staffing projects was mailed to you. We are very interested in receiving data in the form of returned questionnaires from all principals of DS schools in the SPU projects.

If you have already completed the questionnaire, you may be interested in having this extra copy for your files. In the event that our mailing did not reach you or if the blue questionnaire is not readily at hand, we would appreciate your taking time to complete this copy. Please return the completed questionnaire in the enclosed business reply envelope at your earliest convenience.

As a principal of one of the few DS schools in the United States your responses will contribute valuable data to this first study focusing directly upon the implications of differentiated staffing for the administrator. All responses will be treated in confidence, findings will be reported in general terms, and individual persons or schools will not be identified.

The U.S. Office of Education, Dr. Marshall Frinks of the Bureau of Educational Personnel Development and your project director are acquainted with this study. The findings will be available to you upon completion of the research project.

Your assistance and participation in this study are most sincerely appreciated. I would be pleased to receive your comments or to respond to any questions.

Thank you.

Sincerely,

Elmer E. Froese

Enclosure

B-5-7

APPENDIX B

Administrative Task Inventory

ADMINISTRATIVE TASK INVENTORY

DIRECTIONS

This instrument consists of 73 general tasks which administrators may perform as part of their duties and responsibilities. It requires approximately fifteen minutes for completion.

In completing the questionnaire, please follow these directions.

1. Carefully read each task.
2. Rate each task for TIME SPENT.
3. Rate each task for IMPORTANCE.
4. Make ratings by placing a slash mark across the continuum at the appropriate place between None (of your time) and All (of your time). Note the example on the following page.
5. Consider each item independently. Move steadily from item to item. (Items are considered and tabulated individually.)
6. On the last page, add and rate (as you did for the listed tasks) any tasks you do which were not listed.
7. Refold the questionnaire insert in the addressed envelope, and return it by mail at your earliest convenience. Return postage is guaranteed.

THANK YOU.

GENERAL DATA

Responses will be treated in fullest confidence. No identifying reference regarding individual persons or schools will be made in the study. The following information will assist in the interpretation of the data.

Please state:

1. Years of administrative experience as a principal _____
2. Years of experience as a classroom teacher _____
3. Years of experience in Education (all) _____
4. Number of instructional staff (teachers) in your school _____
5. Number of full-time units* of paraprofessional staff _____
6. Number of full-time units* of interns and student teachers _____
7. Approximate student enrollment _____
8. The grade levels included in your school
(Circle) 1 2 3 4 5 6
7 8 9 10 11 12
9. If your school is presently participating in a
Differentiated Staffing Project (Circle) Yes No
10. If so, how many years has the school participated? _____

*A full time unit corresponds to one staff member devoting full time. (Example: Two half-time teachers equal one full time unit)

EXAMPLE

ADMINISTRATIVE TASK INVENTORY

Listed below are various tasks which might be performed by administrators. Rate each task by placing a slash mark (—/—) across the line at the point which best represents the proportion of time you wish to indicate. Consider each task independently. Cumulative totals are not tabulated. Add on the last page any tasks you do which are not listed.

TIME SPENT
Indicate how much of your time you
DO SPEND on each task.

IMPORTANCE
Indicate how much of your time you
think you SHOULD SPEND on each task.

None —/— All

4. Maintain class attendance records.

None —/— All

The respondent to this sample item spends a considerable proportion of his time on this task, but considers it of little importance.

/— None — All

7. Interview applicants for staff prior to hiring.

None /— All

The respondent to this sample item spends none of his time on this task, but considers it of importance.

Please proceed with completion of the inventory,
when you have completed the data sheet on the
right side of the front page.

ADMINISTRATIVE TASK INVENTORY

Listed below are various tasks which might be performed by administrators. Rate each task by placing a slash mark (—/—) across the line at the point which best represents the proportion of time you wish to indicate. Consider each task independently. Cumulative totals are not tabulated. Add on the last page any tasks you do which are not listed.

TIME SPENT
Indicate how much of your time you
DO SPEND on each task.

IMPORTANCE
Indicate how much of your time you
think you SHOULD SPEND on each task.

None _____ All	1. Control Physical Environment (e.g.: Light, Ventilation, and Heat).	None _____ All
None _____ All	2. Develop Policies for Use of Facilities and Equipment by Non-School Personnel and Organizations.	None _____ All
None _____ All	3. Maintain Accounts and Records of Financial Transactions.	None _____ All
None _____ All	4. Prepare Work Requests (e.g.: Maintenance and Repair).	None _____ All
None _____ All	5. Write and Edit Correspondence, Records, and Reports.	None _____ All
None _____ All	6. Confer with Administrative Staff to Determine Personnel Requirements.	None _____ All
None _____ All	7. Prepare Budget.	None _____ All
None _____ All	8. Inventory and Maintain Records of Supplies or Materials.	None _____ All
None _____ All	9. Maintain Administrative Files.	None _____ All
None _____ All	10. Maintain Student Progress and Placement Records.	None _____ All
None _____ All	11. Arrange for Repair of Instructional Aids and Equipment.	None _____ All
None _____ All	12. Score or Record Test Scores and Grades.	None _____ All
None _____ All	13. Requisition Supplies or Equipment.	None _____ All

ADMINISTRATIVE TASK INVENTORY

Listed below are various tasks which might be performed by administrators. Rate each task by placing a slash mark (—/—) across the line at the point which best represents the proportion of time you wish to indicate. Consider each task independently. Cumulative totals are not tabulated. Add on the last page any tasks you do which are not listed.

TIME SPENT
Indicate how much of your time you
DO SPEND on each task.

IMPORTANCE
Indicate how much of your time you
think you SHOULD SPEND on each task.

None _____ All	14. Schedule Appointments (e.g.: Counseling, Visitors, and Vendors).	None _____ All
None _____ All	15. Advise Instructors on Teaching Methods and Lesson Plans.	None _____ All
None _____ All	16. Establish Evaluative Criteria and Student Performance Standards (Lesson, Unit, or Course).	None _____ All
None _____ All	17. Evaluate Adequacy of Instructional Materials.	None _____ All
None _____ All	18. Evaluate Classroom Facilities and Equipment.	None _____ All
None _____ All	19. Evaluate Effectiveness of Ancillary Services.	None _____ All
None _____ All	20. Evaluate Personnel for Selection, Promotion, or Reassignment.	None _____ All
None _____ All	21. Evaluate your Own Techniques and Methods.	None _____ All
None _____ All	22. Evaluate Student Progress through Review of Test Results and Ratings.	None _____ All
None _____ All	23. Evaluate Text and Reference Materials in terms of Instructional Goals.	None _____ All
None _____ All	24. Evaluate with Standardized Tests.	None _____ All
None _____ All	25. Interpret Evaluation Data for Teachers, Students and for Parents.	None _____ All
None _____ All	26. Observe and Evaluate Student Practice Teaching.	None _____ All

ADMINISTRATIVE TASK INVENTORY

Listed below are various tasks which might be performed by administrators. Rate each task by placing a slash mark (—/—) across the line at the point which best represents the proportion of time you wish to indicate. Consider each task independently. Cumulative totals are not tabulated. Add on the last page any tasks you do which are not listed.

TIME SPENT
Indicate how much of your time you
DO SPEND on each task.

IMPORTANCE
Indicate how much of your time you
think you SHOULD SPEND on each task.

None _____ All	27. Review and Evaluate Qualifications of Prospective Staff.	None _____ All
None _____ All	28. Supervise Beginning Teachers.	None _____ All
None _____ All	29. Supervise Experienced Teachers.	None _____ All
None _____ All	30. Supervise Non-Teaching Assistants (e.g.: Clerical, Maintenance, Audio-Visual).	None _____ All
None _____ All	31. Devise Means of Maintaining Student Discipline.	None _____ All
None _____ All	32. Direct Group Discussion and Conferences (e.g.: Staff, Committee, Advisory Group, etc.).	None _____ All
None _____ All	33. Distribute and Collect Instructional Materials.	None _____ All
None _____ All	34. Conduct a Lesson.	None _____ All
None _____ All	35. Provide Individual Instructional Assistance to Students.	None _____ All
None _____ All	36. Plan and Participate in Team Teaching.	None _____ All
None _____ All	37. Confer with Staff to Plan Instructional Program.	None _____ All
None _____ All	38. Interpret Policies, Directives, and Regulations to Staff and Students.	None _____ All
None _____ All	39. Maintain Liaison with Other Schools, Colleges, or Universities.	None _____ All

ADMINISTRATIVE TASK INVENTORY

Listed below are various tasks which might be performed by administrators. Rate each task by placing a slash mark (—/—) across the line at the point which best represents the proportion of time you wish to indicate. Consider each task independently. Cumulative totals are not tabulated. Add on the last page any tasks you do which are not listed.

TIME SPENT
Indicate how much of your time you
DO SPEND on each task.

IMPORTANCE
Indicate how much of your time you
think you SHOULD SPEND on each task.

None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All

40. Organize Advisory Committees (e.g.: Staff, Community).
41. Prepare Materials and Inform Community of New Developments and Trends in Education.
42. Evaluate Lesson Plans and Units Prepared by Staff.
43. Promote and Interpret School Program and Policy in the Community.
44. Review and Evaluate Course Priorities and Total School Program Effectiveness.
45. Confer with Staff to Determine Policy and Operational Procedures.
46. Advise Staff in the Use of Instructional Aids or Materials.
47. Assist in Innovative Curriculum Development Based on Current Research.
48. Participate in Meetings Initiated and Chaired by Staff.
49. Develop and Present Plans for Establishing a New Educational Program.
50. Perform Tasks in Response to Requests by Staff.
51. Develop Proposals for External Financial Aid.
52. Formulate Objectives and Select Instructional Content.

None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All

ADMINISTRATIVE TASK INVENTORY

Listed below are various tasks which might be performed by administrators. Rate each task by placing a slash mark (—/—) across the line at the point which best represents the proportion of time you wish to indicate. Consider each task independently. Cumulative totals are not tabulated. Add on the last page any tasks you do which are not listed.

TIME SPENT
Indicate how much of your time you
DO SPEND on each task.

IMPORTANCE
Indicate how much of your time you
think you SHOULD SPEND on each task.

None _____ All	53. Identify and Utilize Community Resource Persons.	None _____ All
None _____ All	54. Confer with Students to Determine Needs and Interests.	None _____ All
None _____ All	55. Plan and Organize the Activities of Para-professional Staff.	None _____ All
None _____ All	56. Plan and Schedule Duty Assignments of Instructional Personnel.	None _____ All
None _____ All	57. Visit Other Schools to Obtain Information for Curriculum Planning.	None _____ All
None _____ All	58. Write or Develop Instructional Materials and Aids.	None _____ All
None _____ All	59. Confer with Staff to Determine Personnel Requirements.	None _____ All
None _____ All	60. Participate as a Member of Professional Organizations.	None _____ All
None _____ All	61. Participate in In-Service Training Programs.	None _____ All
None _____ All	62. Participate in or Conduct Research Studies.	None _____ All
None _____ All	63. Perform Consultant Services to Schools and Professional Educational Organizations.	None _____ All
None _____ All	64. Pursue Advanced Degree Program.	None _____ All
None _____ All	65. Administer Disciplinary Action as Appropriate.	None _____ All

ADMINISTRATIVE TASK INVENTORY

Listed below are various tasks which might be performed by administrators. Rate each task by placing a slash mark (—/—) across the line at the point which best represents the proportion of time you wish to indicate. Consider each task independently. Cumulative totals are not tabulated. Add on the last page any tasks you do which are not listed.

TIME SPENT
Indicate how much of your time you
DO SPEND on each task.

IMPORTANCE
Indicate how much of your time you
think you SHOULD SPEND on each task.

None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All

66. Assist Students with Academic Problems.
67. Assist Student with Non-Academic, Personal, and Social Problems.
68. Confer with Guidance Counselors.
69. Confer with Parents Concerning Student Progress and Problems.
70. Make Recommendations to School Officials Regarding Student Disciplinary Cases.
71. Participate in Non-Instructional School Duties (e.g.: Ticket Sales, Chaperoning Events).
72. Participate in Registration Procedures or Student Orientation Sessions.
73. Promote or Participate In Clubs, and Special Interest Groups (e.g.: Athletics, School Paper)
- 74.
- 75.
- 76.
- 77.
- 78.

None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All
None	All

APPENDIX C

Letter of Endorsement for Study from
National Cluster Coordinating Center



NATIONAL CLUSTER COORDINATION CENTER

UNITED STATES OFFICE OF EDUCATION • BUREAU OF EDUCATIONAL PERSONNEL DEVELOPMENT

RAYMOND G. MELTON, DIRECTOR

MESA, ARIZONA 85202
(602) 962-7659

Dear Differentiated Staffing Project Participant:

The National Cluster Coordination Center in conjunction with the United States Office of Education has cooperated with and assisted numerous projects in recent years. The major objective of such ventures is the development of new knowledge and greater insight contributing toward the improvement of educational practice. A number of recent projects have emphasized personnel development and staff utilization.

Elmer Froese, who is presently at the University of Houston, is conducting a study dealing with administrative role and principals' role perception in schools with various staffing practices. It is anticipated that the findings of this study will contribute to greater understanding of the relationship between administrative role and staff differentiation. Data is being gathered in seventeen locations where USOE projects are or have been located. The research deals with general concepts and will maintain the anonymity of individual participants.

The National Cluster Coordination is pleased to endorse this study. We would encourage you to participate by completing the questionnaire and providing Mr. Froese with the requested data. Your anticipated cooperation is most sincerely appreciated.

Sincerely,

Raymond G. (Jerry) Melton
Director, National Cluster
Coordination Center

APPENDIX D

Correlation Matrices

Form A - Time Spent

Form B - Importance

Form C - DS Variables

Form A - Time Spent

FACTOR ANALYSIS.....TIME,2

NO. OF CASES 124
NO. OF VARIABLES 74

MEANS

.07	.11	.16	.11	.26	.24	.25	.13	.16	.12
.09	.05	.17	.17	.31	.27	.23	.23	.22	.40
.27	.22	.21	.16	.24	.16	.28	.30	.30	.19
.31	.35	.11	.16	.14	.15	.38	.35	.23	.23
.22	.21	.31	.32	.37	.20	.31	.26	.31	.35
.16	.24	.21	.24	.16	.25	.19	.15	.28	.28
.30	.16	.15	.16	.30	.21	.27	.22	.31	.17
.12	.19	.17	.34						

STANDARD DEVIATIONS

.09	.16	.16	.15	.21	.23	.23	.17	.20	.18
.15	.11	.14	.17	.22	.18	.20	.20	.21	.26
.23	.21	.20	.18	.23	.19	.26	.24	.24	.21
.25	.25	.18	.20	.18	.20	.25	.26	.23	.24
.22	.22	.26	.23	.26	.20	.26	.24	.26	.25
.22	.23	.21	.22	.18	.26	.20	.18	.25	.27
.25	.18	.20	.23	.27	.22	.23	.22	.24	.21
.17	.21	.19	.48						

CORRELATION COEFFICIENTS

ROW 1

1.00	.17	.32	.28	.16	.25	.28	.33	.24	.15
.22	.13	.21	.10	.22	.17	.24	.22	.24	.19
.26	.27	.22	.16	.31	.23	.19	.22	.15	.34
.34	.29	.04	.26	.23	.28	.15	.34	.19	.30
.25	.17	.25	.16	.23	.04	.18	.23	.24	.10
.30	.24	.26	.15	.01	.27	.22	.08	.21	.29
.19	.27	.24	.22	.33	.32	.21	.26	.28	.30
.05	.17	.20	-.06						

ROW 2

.17	1.00	.54	.41	.46	.71	.48	.52	.42	.38
.47	.30	.47	.51	.54	.55	.54	.41	.56	.39
.44	.50	.50	.34	.48	.42	.40	.43	.38	.42
.31	.40	.50	.39	.32	.34	.48	.49	.44	.52
.47	.39	.39	.38	.49	.31	.29	.40	.27	.45
.39	.34	.52	.32	.40	.40	.44	.41	.51	.50
.37	.41	.37	.41	.40	.31	.45	.57	.42	.40
.27	.43	.34	.14						

ROW 3

.32	.54	1.00	.44	.51	.50	.29	.56	.47	.47
.37	.38	.45	.41	.39	.42	.33	.34	.36	.26
.40	.44	.38	.38	.36	.38	.26	.28	.17	.40
.32	.48	.39	.38	.36	.39	.38	.46	.33	.41
.40	.33	.37	.31	.38	.29	.29	.38	.34	.31
.31	.32	.34	.27	.23	.41	.27	.18	.29	.46
.25	.39	.29	.22	.35	.30	.39	.37	.34	.39
.19	.27	.28	.08						

ROW 4

.28	.41	.44	1.00	.59	.39	.19	.71	.71	.50
.22	.31	.60	.38	.47	.33	.41	.49	.42	.32
.48	.45	.48	.33	.41	.37	.28	.39	.31	.50

	.52	.43	.49	.52	.41	.15	.33	.39	.25	.20
	.21	.48	.16	.28	.31	.35	.11	.28	.22	.29
	.18	.28	.10	.28	.37	.39	.28	.28	.23	.43
	.19	.21	.15	.17	.50	.31	.36	.37	.46	.39
	.14	.38	.32	-.10						
ROW 5										
	.14	.46	.51	.59	1.00	.45	.38	.52	.63	.52
	.50	.34	.52	.43	.51	.33	.39	.50	.51	.42
	.52	.50	.53	.36	.44	.35	.36	.30	.29	.40
	.47	.52	.36	.35	.34	.12	.44	.46	.33	.27
	.22	.33	.24	.31	.17	.12	.30	.37	.37	.33
	.24	.37	.34	.18	.38	.40	.29	.36	.28	.51
	.11	.24	.28	.32	.52	.22	.37	.42	.45	.33
	.18	.33	.25	-.03						
ROW 6										
	.25	.71	.50	.39	.45	1.00	.60	.43	.37	.45
	.42	.29	.41	.50	.64	.57	.67	.57	.63	.51
	.50	.63	.55	.47	.62	.68	.60	.57	.52	.56
	.45	.62	.44	.53	.51	.41	.56	.65	.64	.64
	.59	.48	.51	.52	.61	.42	.40	.54	.33	.51
	.57	.42	.49	.37	.42	.46	.46	.51	.63	.47
	.41	.44	.49	.36	.46	.37	.39	.53	.37	.52
	.14	.37	.42	.21						
ROW 7										
	.28	.48	.29	.19	.38	.60	1.00	.34	.32	.18
	.31	.27	.48	.50	.42	.40	.46	.44	.48	.55
	.54	.47	.35	.44	.52	.44	.51	.37	.40	.50
	.51	.44	.32	.25	.23	.32	.45	.57	.46	.62
	.44	.36	.57	.33	.53	.26	.28	.30	.33	.46
	.59	.43	.45	.33	.34	.44	.49	.23	.60	.52
	.51	.25	.40	.35	.46	.34	.35	.26	.37	.25
	.22	.39	.32	.24						
ROW 8										
	.33	.52	.56	.71	.52	.43	.34	1.00	.67	.54
	.76	.48	.70	.44	.43	.37	.43	.45	.48	.35
	.49	.45	.54	.34	.45	.41	.34	.43	.30	.65
	.49	.50	.56	.46	.46	.34	.49	.51	.28	.32
	.24	.47	.36	.26	.34	.38	.15	.41	.26	.33
	.27	.25	.28	.21	.47	.48	.26	.30	.28	.47
	.47	.27	.15	.16	.56	.39	.43	.34	.40	.30
	.17	.41	.24	-.11						
ROW 9										
	.24	.42	.47	.71	.63	.37	.32	.67	1.00	.64
	.22	.49	.65	.41	.48	.43	.41	.43	.42	.34
	.51	.49	.56	.42	.46	.31	.25	.34	.31	.50
	.54	.44	.41	.39	.34	.15	.37	.41	.27	.25
	.12	.39	.20	.26	.27	.31	.21	.23	.20	.26
	.21	.34	.23	.19	.34	.42	.28	.25	.17	.51
	.35	.21	.09	.28	.57	.21	.35	.30	.48	.37
	.21	.34	.23	-.13						
ROW 10										
	.15	.38	.47	.50	.52	.45	.18	.54	.44	1.00
	.65	.55	.42	.38	.47	.47	.49	.37	.38	.24
	.45	.51	.55	.44	.52	.41	.26	.38	.27	.39
	.36	.43	.44	.54	.49	.31	.38	.42	.41	.23
	.27	.43	.23	.36	.26	.49	.34	.31	.35	.36

	.17 .33 .06	.28 .27 .23	.20 .18 .27	.22 .19 -.05	.35 .45	.39 .36	.32 .40	.34 .36	.25 .47	.44 .46
ROF 11	.27 1.00 .50 .49 .11 .17 .45 .16	.40 .44 .41 .41 .45 .23 .23 .43	.38 .65 .53 .61 .21 .22 .07 .10	.72 .42 .32 .52 .27 .18 .27 -.08	.50 .46 .48 .40 .28 .39 .53	.47 .34 .38 .23 .48 .43 .31	.31 .47 .29 .37 .11 .30 .35	.76 .49 .36 .46 .26 .28 .25	.72 .36 .38 .31 .16 .23 .37	.65 .31 .59 .21 .31 .49 .33
ROF 12	.13 .44 .35 .35 .24 .27 .27 .20	.30 1.00 .37 .30 .31 .27 .30 .32	.18 .35 .42 .24 .29 .27 .20 .13	.31 .29 .53 .35 .22 .33 .25 -.05	.36 .29 .33 .31 .16 .39 .28	.29 .40 .23 .27 .29 .20 .34	.27 .33 .18 .32 .29 .20 .36	.48 .22 .28 .34 .18 .30 .23	.49 .33 .12 .28 .25 .12 .30	.55 .12 .39 .27 .15 .27 .21
ROF 13	.21 .65 .46 .40 .25 .38 .45 .16	.47 .35 .36 .51 .34 .36 .29 .49	.45 1.00 .44 .63 .10 .21 .17 .32	.60 .57 .30 .33 .27 .17 .26 .08	.52 .43 .47 .31 .41 .46 .59	.41 .34 .39 .25 .32 .47 .32	.48 .34 .32 .42 .18 .28 .38	.70 .38 .36 .58 .37 .21 .40	.65 .46 .33 .37 .25 .34 .39	.42 .34 .60 .41 .40 .54 .26
ROF 14	.10 .47 .41 .51 .48 .23 .35 .27	.51 .29 .44 .41 .47 .38 .23 .45	.41 .57 .36 .54 .49 .33 .17 .38	.38 1.00 .34 .33 .29 .26 .31 .07	.43 .38 .48 .30 .45 .35 .57	.50 .40 .35 .38 .32 .41 .24	.50 .44 .33 .39 .26 .30 .38	.44 .38 .28 .59 .35 .25 .42	.41 .39 .31 .46 .27 .35 .40	.38 .34 .44 .43 .48 .45 .37
ROF 15	.27 .46 .65 .54 .48 .47 .54 .18	.54 .28 .64 .63 .62 .59 .43 .42	.39 .43 .66 .47 .48 .50 .47 .51	.47 .38 .50 .55 .64 .49 .47 -.05	.51 1.00 .63 .52 .66 .48 .53	.64 .72 .61 .41 .55 .45 .44	.42 .73 .54 .63 .48 .53 .52	.43 .75 .63 .61 .52 .53 .49	.48 .68 .67 .60 .45 .49 .52	.47 .65 .54 .51 .49 .67 .49
ROF 16	.17 .34 .58 .49 .67 .45 .50	.55 .40 .64 .59 .55 .58 .49	.42 .34 .44 .37 .52 .50 .41	.33 .40 .54 .53 .58 .55 .40	.33 .77 .61 .51 .51 .44 .39	.57 1.00 .52 .56 .46 .31 .45	.40 .69 .50 .62 .52 .48 .49	.37 .59 .54 .50 .45 .54 .43	.43 .61 .54 .52 .50 .40 .53	.47 .46 .46 .49 .51 .52 .41

	.27	.45	.37	.06					
RO# 17									
	.24	.54	.33	.41	.39	.67	.46	.43	.49
	.47	.33	.34	.44	.73	.69	1.00	.78	.52
	.61	.65	.70	.53	.66	.63	.57	.60	.57
	.45	.61	.45	.61	.56	.45	.58	.61	.56
	.50	.57	.55	.57	.56	.56	.47	.46	.53
	.49	.52	.46	.41	.48	.51	.49	.58	.49
	.44	.35	.42	.42	.44	.43	.44	.42	.48
	.27	.45	.45	.04					.45
RO# 18									
	.22	.41	.34	.49	.50	.57	.44	.45	.37
	.49	.22	.38	.38	.75	.59	.78	1.00	.63
	.66	.67	.66	.53	.60	.59	.64	.60	.61
	.55	.61	.47	.65	.58	.35	.60	.65	.53
	.43	.62	.51	.56	.63	.58	.39	.43	.57
	.43	.57	.53	.50	.52	.56	.48	.50	.61
	.54	.32	.38	.33	.52	.49	.55	.39	.56
	.24	.51	.54	-.02					
RO# 19									
	.24	.56	.36	.42	.51	.63	.48	.48	.36
	.36	.33	.46	.39	.60	.61	.69	.66	.59
	.59	.66	.60	.51	.64	.62	.64	.64	.68
	.51	.70	.32	.51	.55	.32	.62	.61	.64
	.46	.51	.53	.54	.54	.46	.47	.51	.44
	.55	.47	.47	.34	.59	.49	.50	.46	.57
	.54	.31	.36	.38	.42	.45	.45	.54	.44
	.27	.46	.39	.03					
RO# 20									
	.19	.39	.26	.32	.42	.51	.55	.35	.24
	.31	.17	.34	.34	.65	.46	.52	.63	1.00
	.59	.61	.49	.36	.62	.54	.74	.55	.67
	.50	.61	.24	.41	.42	.37	.58	.63	.53
	.41	.42	.57	.54	.65	.38	.36	.52	.54
	.43	.44	.48	.39	.41	.47	.55	.37	.59
	.56	.29	.34	.36	.49	.30	.36	.40	.44
	.17	.34	.40	.04					
RO# 21									
	.24	.44	.40	.48	.57	.58	.54	.49	.45
	.50	.35	.46	.41	.65	.58	.61	.66	.59
	1.00	.73	.68	.58	.68	.55	.58	.52	.60
	.58	.69	.42	.56	.55	.45	.63	.64	.51
	.57	.50	.56	.63	.66	.48	.57	.59	.51
	.57	.53	.57	.58	.41	.38	.47	.52	.58
	.63	.50	.39	.33	.58	.45	.52	.44	.38
	.17	.44	.42	.06					
RO# 22									
	.27	.50	.44	.45	.50	.63	.47	.45	.51
	.41	.37	.36	.44	.64	.64	.65	.67	.61
	.73	1.00	.74	.71	.76	.65	.63	.60	.63
	.58	.66	.35	.60	.60	.43	.62	.66	.57
	.51	.54	.55	.57	.61	.47	.46	.48	.51
	.47	.49	.60	.53	.51	.49	.55	.45	.59
	.56	.49	.34	.39	.54	.42	.51	.49	.53
	.23	.40	.41	.00					

ROF 23	.77	.50	.38	.48	.53	.55	.35	.54	.56	.55
	.53	.47	.44	.36	.66	.64	.70	.66	.60	.49
	.60	.74	1.00	.64	.72	.65	.58	.61	.50	.55
	.57	.66	.45	.65	.62	.50	.67	.55	.55	.50
	.48	.58	.60	.61	.53	.57	.53	.56	.45	.47
	.45	.55	.42	.46	.45	.42	.56	.65	.42	.52
	.57	.52	.43	.44	.50	.44	.52	.44	.58	.41
	.09	.38	.29	-.02						
ROF 24	.16	.34	.38	.33	.36	.47	.44	.34	.42	.44
	.37	.53	.20	.34	.50	.54	.53	.53	.51	.38
	.58	.71	.64	1.00	.65	.45	.43	.46	.38	.59
	.55	.54	.25	.53	.53	.41	.53	.58	.58	.61
	.50	.49	.42	.46	.44	.40	.47	.39	.43	.46
	.44	.43	.66	.55	.40	.42	.48	.38	.34	.49
	.45	.45	.28	.42	.49	.50	.57	.33	.56	.35
	.24	.34	.33	.03						
ROF 25	.31	.48	.38	.41	.44	.62	.52	.45	.46	.52
	.48	.33	.47	.48	.63	.61	.66	.60	.64	.62
	.68	.76	.72	.65	1.00	.65	.67	.57	.61	.66
	.57	.49	.41	.60	.57	.54	.68	.67	.69	.64
	.63	.53	.65	.67	.64	.50	.58	.53	.50	.58
	.57	.58	.60	.53	.51	.44	.67	.52	.54	.60
	.66	.55	.44	.42	.55	.46	.48	.50	.62	.44
	.73	.48	.45	.05						
ROF 26	.23	.42	.38	.37	.35	.68	.44	.41	.31	.41
	.38	.23	.39	.35	.61	.52	.63	.59	.62	.54
	.55	.65	.65	.45	.65	1.00	.63	.60	.50	.55
	.44	.58	.40	.62	.64	.47	.53	.58	.62	.55
	.54	.51	.50	.56	.58	.49	.42	.55	.41	.41
	.55	.48	.43	.38	.50	.45	.59	.49	.54	.52
	.50	.50	.63	.34	.39	.37	.26	.49	.34	.43
	.06	.28	.39	.06						
POF 27	.19	.40	.26	.28	.36	.60	.51	.34	.25	.26
	.29	.18	.32	.33	.54	.50	.57	.64	.64	.74
	.58	.63	.58	.43	.67	.63	1.00	.69	.59	.56
	.52	.66	.35	.52	.53	.39	.64	.65	.61	.58
	.54	.50	.59	.56	.63	.47	.44	.55	.42	.52
	.54	.45	.58	.44	.46	.37	.54	.47	.64	.54
	.61	.36	.45	.30	.42	.41	.37	.48	.48	.44
	.20	.48	.46	.19						
ROF 28	.27	.43	.28	.39	.38	.57	.32	.43	.34	.38
	.38	.28	.36	.28	.63	.54	.60	.60	.64	.55
	.52	.60	.61	.46	.57	.60	.69	1.00	.67	.62
	.54	.66	.35	.61	.59	.37	.60	.60	.57	.49
	.45	.57	.43	.51	.60	.52	.43	.52	.31	.50
	.46	.45	.43	.42	.50	.35	.48	.50	.44	.55
	.49	.36	.35	.41	.46	.47	.49	.54	.49	.52
	.18	.41	.44	-.01						
ROF 29	.15	.38	.17	.31	.29	.52	.40	.30	.31	.27

	.30	.12	.33	.31	.67	.54	.49	.54	.46	.61
	.54	.59	.50	.38	.61	.50	.59	.67	1.00	.50
	.49	.52	.36	.53	.40	.32	.57	.53	.59	.47
	.42	.51	.46	.54	.61	.44	.33	.47	.28	.49
	.45	.45	.43	.46	.32	.25	.49	.33	.49	.55
	.40	.35	.34	.32	.44	.38	.39	.42	.44	.45
	.11	.40	.48	-.01						
ROI 30										
	.34	.42	.40	.50	.40	.56	.50	.65	.50	.39
	.59	.39	.40	.44	.54	.46	.52	.61	.68	.60
	.10	.63	.55	.54	.66	.55	.56	.62	.50	1.00
	.45	.69	.39	.58	.58	.55	.55	.70	.61	.62
	.37	.44	.54	.41	.56	.42	.30	.50	.26	.50
	.44	.35	.43	.36	.57	.54	.44	.35	.45	.63
	.59	.35	.25	.36	.59	.45	.51	.42	.45	.41
	.20	.46	.34	-.04						
ROI 31										
	.34	.31	.32	.52	.47	.45	.51	.49	.56	.36
	.40	.35	.40	.51	.54	.49	.45	.55	.51	.50
	.50	.58	.53	.55	.57	.44	.52	.54	.49	.65
	1.00	.61	.41	.48	.49	.25	.55	.71	.46	.49
	.42	.53	.46	.37	.49	.35	.28	.36	.28	.46
	.30	.47	.43	.45	.45	.47	.41	.34	.39	.63
	.56	.31	.23	.37	.80	.45	.57	.46	.61	.44
	.30	.54	.44	-.04						
ROI 32										
	.20	.40	.40	.43	.52	.62	.49	.50	.44	.43
	.41	.30	.51	.41	.63	.59	.61	.61	.70	.61
	.49	.66	.66	.54	.69	.58	.66	.66	.52	.69
	.61	1.00	.45	.55	.60	.54	.73	.73	.55	.70
	.58	.51	.63	.65	.68	.47	.58	.66	.54	.59
	.54	.53	.50	.47	.47	.44	.53	.51	.60	.64
	.70	.45	.43	.46	.57	.40	.58	.52	.55	.51
	.30	.46	.44	.15						
ROI 33										
	.04	.50	.39	.49	.36	.44	.32	.56	.41	.44
	.61	.24	.63	.54	.42	.37	.45	.47	.32	.24
	.42	.35	.45	.25	.41	.40	.35	.35	.36	.39
	.41	.45	1.00	.57	.48	.35	.47	.49	.45	.35
	.34	.54	.36	.36	.50	.58	.26	.44	.28	.56
	.24	.43	.35	.33	.48	.32	.35	.41	.42	.51
	.52	.35	.25	.27	.46	.48	.55	.48	.47	.30
	.15	.40	.49	.12						
ROI 34										
	.26	.39	.38	.52	.35	.53	.25	.46	.39	.54
	.52	.35	.33	.33	.55	.53	.61	.65	.51	.41
	.54	.60	.65	.53	.00	.62	.52	.61	.53	.58
	.48	.55	.57	1.00	.81	.50	.58	.53	.64	.50
	.47	.68	.48	.62	.57	.66	.43	.56	.44	.59
	.40	.56	.56	.59	.54	.40	.58	.61	.49	.56
	.58	.48	.45	.35	.46	.66	.62	.52	.64	.47
	.19	.36	.52	.02						
ROI 35										
	.23	.32	.36	.41	.34	.51	.23	.46	.34	.49
	.40	.31	.30	.30	.52	.51	.56	.58	.55	.42
	.55	.60	.62	.53	.57	.64	.53	.59	.40	.58

	.49	.67	.48	.81	1.00	.58	.61	.53	.65	.48
	.48	.55	.50	.60	.56	.62	.46	.58	.47	.54
	.76	.48	.51	.54	.51	.38	.45	.62	.43	.55
	.51	.39	.38	.24	.48	.67	.60	.50	.56	.49
	.14	.76	.41	.07						
ROW 36										
	.20	.34	.39	.15	.12	.41	.32	.34	.15	.31
	.21	.27	.25	.38	.41	.56	.45	.35	.32	.37
	.45	.43	.50	.41	.54	.47	.39	.37	.32	.36
	.26	.54	.39	.50	.56	1.00	.59	.46	.46	.45
	.12	.37	.58	.52	.49	.44	.56	.58	.56	.57
	.77	.51	.42	.49	.33	.27	.51	.52	.44	.35
	.44	.52	.45	.37	.35	.44	.45	.35	.43	.29
	.10	.27	.23	.16						
ROW 37										
	.15	.48	.38	.33	.44	.56	.45	.49	.37	.38
	.17	.32	.42	.39	.63	.62	.58	.60	.62	.58
	.63	.62	.17	.53	.68	.53	.64	.60	.57	.55
	.55	.71	.47	.58	.61	.59	1.00	.71	.62	.63
	.58	.61	.65	.73	.69	.56	.59	.63	.58	.68
	.50	.62	.59	.62	.56	.40	.55	.62	.58	.61
	.70	.54	.49	.38	.53	.58	.64	.57	.65	.45
	.29	.44	.44	.08						
ROW 38										
	.74	.49	.46	.39	.46	.65	.57	.51	.41	.42
	.14	.34	.58	.59	.61	.50	.61	.65	.61	.63
	.10	.14	.55	.58	.67	.58	.65	.60	.53	.70
	.71	.71	.49	.53	.53	.46	.71	1.00	.71	.70
	.57	.55	.69	.57	.73	.48	.43	.56	.43	.64
	.50	.55	.56	.52	.57	.64	.54	.44	.62	.73
	.64	.46	.38	.44	.71	.54	.62	.50	.57	.57
	.29	.57	.58	.10						
ROW 39										
	.19	.44	.33	.25	.33	.64	.46	.28	.27	.41
	.31	.28	.37	.46	.60	.52	.61	.56	.62	.56
	.59	.68	.55	.58	.69	.62	.61	.57	.59	.61
	.46	.58	.45	.64	.65	.46	.62	.71	1.00	.65
	.62	.50	.42	.64	.67	.54	.52	.59	.44	.66
	.57	.50	.60	.56	.57	.38	.66	.51	.62	.67
	.57	.47	.55	.49	.41	.56	.52	.59	.51	.47
	.17	.34	.58	.26						
ROW 40										
	.70	.52	.41	.20	.27	.64	.62	.32	.25	.23
	.21	.27	.41	.43	.51	.49	.56	.53	.64	.53
	.51	.57	.50	.61	.64	.55	.58	.49	.47	.62
	.49	.70	.35	.50	.48	.45	.63	.70	.65	1.00
	.68	.50	.76	.59	.66	.39	.51	.51	.45	.61
	.68	.53	.61	.52	.48	.42	.55	.38	.68	.57
	.52	.46	.51	.42	.48	.52	.58	.49	.50	.46
	.31	.49	.50	.18						
ROW 41										
	.25	.47	.40	.21	.29	.58	.46	.24	.12	.27
	.11	.24	.25	.46	.48	.60	.50	.43	.46	.41
	.52	.51	.48	.50	.63	.54	.54	.45	.42	.37
	.42	.58	.34	.47	.48	.62	.58	.57	.62	.68
	1.00	.49	.75	.64	.62	.36	.64	.55	.65	.59

	.55 .53 .37	.51 .64 .47	.49 .63 .44	.64 .37 .30	.41 .36	.28 .48	.60 .53	.49 .52	.57 .50	.45 .35
RO/ 42	.17 .45 .57 .57 .49 .71 .68 .20	.39 .33 .54 .51 1.00 .57 .34 .45	.33 .34 .58 .56 .54 .52 .72 .54	.48 .42 .49 .68 .56 .58 .31 =.09	.33 .62 .53 .55 .61 .51 .58	.48 .55 .51 .37 .67 .44 .65	.36 .57 .50 .61 .36 .52 .66	.47 .67 .57 .55 .41 .48 .45	.39 .51 .51 .50 .42 .45 .62	.43 .42 .44 .50 .52 .56 .51
RO/ 43	.25 .21 .54 .44 .75 .44 .15 .27	.39 .27 .55 .63 .54 .50 .44 .49	.37 .20 .50 .36 1.00 .64 .50 .47	.16 .49 .52 .48 .69 .56 .40 .12	.24 .48 .65 .48 .71 .48 .50	.51 .52 .50 .58 .44 .49 .51	.57 .55 .59 .65 .63 .62 .54	.36 .51 .43 .69 .61 .51 .43	.20 .53 .46 .62 .59 .66 .55	.23 .57 .54 .76 .68 .52 .36
RO/ 44	.14 .22 .63 .37 .64 .52 .42 .24	.38 .22 .57 .65 .54 .63 .63 .40	.31 .27 .61 .76 .69 .63 .60 .54	.28 .29 .46 .62 1.00 .67 .34 .04	.31 .64 .67 .60 .79 .59 .36	.52 .57 .56 .52 .54 .39 .51	.33 .57 .56 .73 .71 .59 .55	.26 .56 .51 .57 .67 .66 .55	.26 .54 .54 .64 .63 .65 .61	.36 .54 .41 .59 .63 .52 .50
RO/ 45	.27 .28 .64 .49 .42 .54 .59 .27	.49 .14 .61 .88 .61 .63 .49 .49	.38 .41 .53 .50 .71 .44 .54 .58	.31 .45 .44 .57 .79 .59 .39 .13	.37 .66 .64 .56 1.00 .56 .52	.61 .51 .58 .49 .62 .53 .53	.53 .56 .63 .69 .59 .57 .61	.34 .63 .60 .73 .73 .55 .58	.27 .54 .61 .67 .53 .78 .57	.26 .65 .56 .66 .75 .65 .58
RO/ 46	.08 .40 .48 .75 .76 .37 .50 .12	.31 .29 .47 .47 .67 .50 .35 .34	.29 .32 .57 .58 .44 .44 .29 .44	.35 .32 .40 .66 .59 .48 .31 =.04	.32 .55 .50 .62 .62 .56 .37	.42 .46 .49 .44 1.00 .44 .57	.26 .56 .47 .56 .47 .47 .58	.38 .58 .52 .48 .50 .55 .40	.31 .46 .44 .54 .46 .45 .55	.49 .38 .42 .39 .55 .51 .50
RO/ 47	.18 .11 .57 .28 .64 .50 .52	.29 .29 .46 .58 .36 .53 .53	.29 .18 .53 .26 .63 .54 .52	.11 .26 .47 .43 .71 .48 .53	.30 .48 .53 .46 .59 .38 .28	.40 .52 .42 .56 .47 .29 .43	.28 .47 .44 .59 1.00 .57 .47	.15 .39 .43 .43 .61 .63 .39	.21 .47 .33 .52 .71 .43 .54	.34 .36 .30 .51 .57 .39 .28

	.17	.21	.32	.14						
ROA 4A										
	.73	.40	.38	.28	.37	.54	.30	.41	.23	.31
	.74	.18	.77	.35	.52	.45	.46	.43	.51	.52
	.69	.48	.64	.39	.53	.55	.55	.52	.47	.50
	.74	.46	.44	.56	.54	.58	.63	.56	.59	.51
	.65	.41	.61	.67	.73	.50	.61	1.00	.56	.65
	.41	.51	.46	.43	.43	.39	.50	.58	.64	.51
	.51	.49	.50	.41	.42	.45	.51	.55	.46	.44
	.03	.26	.16	.18						
ROA 49										
	.74	.77	.34	.22	.37	.33	.33	.26	.20	.35
	.14	.25	.25	.27	.45	.50	.44	.37	.41	.40
	.55	.42	.45	.43	.50	.41	.42	.31	.22	.26
	.28	.54	.28	.44	.47	.56	.58	.43	.44	.45
	.65	.42	.59	.63	.53	.47	.71	.56	1.00	.57
	.52	.58	.49	.46	.35	.31	.47	.46	.44	.41
	.51	.57	.50	.31	.31	.44	.43	.34	.51	.26
	.11	.24	.28	.20						
ROA 50										
	.10	.45	.31	.29	.33	.51	.46	.33	.26	.36
	.31	.15	.40	.48	.49	.51	.53	.52	.44	.54
	.51	.51	.47	.46	.58	.41	.52	.50	.49	.50
	.48	.59	.56	.59	.54	.50	.68	.64	.66	.61
	.59	.52	.68	.63	.75	.55	.57	.65	.57	1.00
	.44	.59	.55	.49	.47	.45	.57	.50	.67	.61
	.60	.48	.46	.43	.51	.55	.60	.55	.68	.44
	.20	.42	.51	.20						
ROA 51										
	.30	.39	.31	.18	.26	.57	.59	.20	.21	.17
	.17	.22	.28	.23	.47	.45	.49	.43	.55	.43
	.52	.47	.45	.44	.57	.55	.54	.46	.45	.44
	.39	.54	.24	.40	.35	.37	.50	.50	.57	.68
	.55	.31	.46	.52	.54	.37	.50	.41	.52	.44
	1.00	.62	.49	.40	.43	.23	.55	.35	.52	.48
	.47	.55	.66	.33	.22	.40	.34	.34	.37	.31
	.10	.20	.35	.24						
ROA 52										
	.24	.34	.32	.28	.37	.42	.43	.25	.34	.28
	.23	.22	.36	.38	.59	.58	.52	.52	.47	.44
	.53	.49	.55	.43	.58	.48	.45	.45	.45	.35
	.47	.53	.43	.56	.48	.53	.62	.55	.50	.53
	.51	.57	.50	.63	.63	.50	.53	.51	.58	.59
	.62	1.00	.54	.58	.49	.31	.58	.57	.48	.61
	.57	.56	.58	.43	.46	.49	.56	.44	.63	.41
	.22	.35	.48	.02						
ROA 53										
	.26	.52	.34	.30	.34	.49	.45	.28	.23	.20
	.22	.27	.21	.33	.50	.50	.46	.53	.47	.48
	.57	.60	.52	.56	.60	.43	.58	.43	.43	.43
	.43	.50	.35	.56	.51	.42	.59	.56	.60	.61
	.69	.52	.64	.63	.64	.44	.54	.46	.49	.55
	.49	.54	1.00	.74	.50	.34	.62	.57	.56	.54
	.62	.58	.54	.41	.39	.64	.62	.57	.65	.37
	.40	.44	.58	.11						

ROW 54	.15	.37	.27	.28	.18	.37	.33	.21	.19	.22
	.18	.33	.17	.26	.49	.55	.41	.50	.34	.39
	.58	.53	.46	.55	.53	.38	.44	.42	.48	.36
	.45	.47	.33	.59	.54	.49	.62	.52	.56	.52
	.44	.58	.56	.67	.59	.48	.48	.43	.46	.49
	.40	.58	.74	1.00	.46	.25	.57	.53	.48	.55
	.57	.55	.47	.30	.39	.68	.75	.41	.63	.38
	.45	.43	.60	.01						
ROW 55	.01	.40	.23	.37	.38	.47	.34	.47	.34	.35
	.39	.38	.46	.35	.48	.44	.48	.52	.59	.41
	.41	.51	.45	.40	.51	.50	.46	.50	.32	.57
	.45	.47	.48	.54	.51	.33	.56	.57	.57	.48
	.41	.51	.48	.50	.56	.56	.38	.43	.35	.47
	.43	.49	.50	.46	1.00	.43	.53	.59	.52	.51
	.58	.41	.43	.34	.39	.46	.55	.47	.40	.32
	.27	.41	.38	.03						
ROW 56	.27	.40	.41	.39	.40	.46	.44	.48	.42	.39
	.43	.20	.47	.41	.45	.31	.51	.56	.49	.47
	.38	.49	.42	.42	.44	.45	.37	.35	.25	.54
	.47	.44	.32	.40	.38	.27	.40	.64	.38	.42
	.28	.44	.49	.39	.53	.44	.29	.39	.31	.45
	.23	.31	.34	.25	.43	1.00	.42	.34	.47	.53
	.40	.16	.12	.34	.58	.39	.45	.35	.46	.43
	.19	.39	.37	.09						
ROW 57	.22	.44	.27	.28	.29	.46	.49	.26	.28	.32
	.30	.20	.28	.30	.53	.48	.49	.48	.50	.55
	.47	.55	.56	.48	.67	.59	.54	.48	.49	.44
	.41	.53	.35	.58	.45	.51	.55	.54	.66	.55
	.60	.52	.62	.59	.57	.47	.57	.50	.47	.57
	.55	.58	.62	.57	.53	.42	1.00	.53	.55	.63
	.69	.51	.57	.62	.37	.46	.53	.45	.59	.34
	.24	.33	.48	.18						
ROW 58	.00	.41	.18	.28	.36	.51	.23	.30	.25	.34
	.28	.30	.21	.25	.53	.54	.58	.50	.46	.37
	.52	.45	.65	.38	.52	.49	.47	.50	.33	.35
	.34	.51	.41	.61	.62	.52	.62	.44	.51	.38
	.49	.48	.51	.66	.55	.55	.63	.58	.46	.50
	.35	.57	.57	.53	.59	.34	.53	1.00	.49	.42
	.59	.53	.57	.44	.39	.46	.49	.50	.52	.27
	.12	.25	.33	.10						
ROW 59	.21	.51	.29	.23	.28	.63	.60	.28	.17	.25
	.23	.12	.34	.35	.49	.40	.49	.48	.48	.60
	.51	.49	.42	.34	.54	.54	.64	.44	.49	.45
	.39	.60	.42	.49	.43	.44	.58	.62	.62	.68
	.57	.45	.66	.65	.78	.45	.43	.64	.44	.67
	.52	.48	.56	.48	.52	.47	.55	.49	1.00	.57
	.53	.40	.60	.37	.40	.45	.48	.50	.43	.48
	.22	.44	.48	.30						
ROW 60	.29	.50	.46	.43	.51	.57	.52	.47	.51	.44

	.49	.27	.54	.45	.67	.52	.49	.61	.57	.59
	.58	.59	.52	.49	.60	.52	.54	.55	.55	.63
	.63	.64	.51	.56	.55	.35	.61	.73	.67	.57
	.45	.54	.52	.57	.65	.51	.39	.51	.41	.61
	.48	.61	.54	.55	.51	.53	.63	.42	.57	1.00
	.65	.42	.46	.53	.61	.58	.69	.51	.64	.55
	.33	.47	.64	.04						
ROW 61										
	.19	.37	.25	.39	.41	.44	.51	.47	.35	.33
	.45	.27	.45	.35	.54	.50	.46	.56	.54	.56
	.63	.54	.54	.45	.66	.50	.61	.49	.48	.59
	.54	.70	.52	.58	.51	.46	.70	.64	.57	.52
	.53	.58	.65	.62	.59	.50	.52	.51	.51	.60
	.47	.57	.62	.57	.58	.40	.69	.59	.53	.65
	1.00	.52	.49	.46	.54	.55	.60	.47	.63	.25
	.26	.42	.50	.13						
ROW 62										
	.27	.41	.39	.20	.24	.44	.25	.27	.21	.27
	.23	.30	.29	.23	.43	.49	.35	.32	.31	.29
	.50	.49	.52	.45	.55	.50	.36	.36	.35	.35
	.31	.45	.35	.48	.39	.52	.54	.46	.47	.46
	.64	.34	.44	.53	.49	.35	.53	.49	.57	.48
	.55	.56	.58	.55	.41	.16	.51	.53	.40	.42
	.52	1.00	.59	.34	.28	.38	.47	.48	.41	.17
	.13	.28	.33	.23						
ROW 63										
	.24	.37	.29	.15	.28	.49	.40	.15	.09	.16
	.07	.20	.17	.17	.47	.41	.42	.38	.36	.34
	.19	.34	.43	.28	.44	.53	.45	.38	.34	.25
	.21	.43	.25	.45	.38	.45	.49	.38	.55	.51
	.63	.32	.50	.60	.54	.29	.52	.50	.50	.46
	.64	.58	.54	.47	.43	.12	.57	.57	.60	.46
	.49	.59	1.00	.40	.15	.34	.35	.46	.33	.28
	.24	.20	.40	.28						
ROW 64										
	.22	.41	.22	.17	.32	.36	.35	.16	.28	.19
	.27	.25	.26	.31	.47	.40	.42	.33	.38	.36
	.31	.39	.44	.42	.42	.34	.30	.41	.32	.36
	.37	.46	.27	.35	.24	.37	.38	.44	.49	.42
	.37	.31	.40	.34	.39	.31	.53	.41	.31	.43
	.13	.43	.41	.30	.34	.34	.62	.44	.37	.53
	.46	.36	.40	1.00	.37	.26	.41	.39	.43	.30
	.23	.31	.44	.13						
ROW 65										
	.33	.40	.35	.50	.52	.46	.46	.56	.57	.45
	.53	.28	.59	.57	.53	.39	.44	.52	.42	.49
	.58	.54	.50	.49	.55	.39	.42	.46	.44	.59
	.80	.57	.46	.48	.48	.35	.53	.71	.41	.48
	.14	.58	.50	.36	.52	.37	.28	.42	.31	.51
	.22	.46	.39	.37	.37	.58	.37	.39	.40	.61
	.54	.28	.15	.37	1.00	.47	.59	.48	.63	.48
	.19	.49	.44	.10						
ROW 66										
	.32	.31	.30	.31	.22	.37	.34	.39	.21	.36
	.31	.34	.32	.24	.44	.45	.43	.49	.45	.30
	.45	.42	.44	.50	.46	.37	.41	.47	.38	.49

	.49	.48	.48	.66	.67	.44	.58	.54	.56	.52
	.48	.45	.51	.51	.53	.57	.43	.45	.44	.55
	.40	.49	.64	.68	.46	.39	.46	.44	.45	.58
	.55	.38	.34	.26	.47	1.00	.81	.45	.68	.40
	.26	.33	.51	-.04						
ROY 67										
	.21	.45	.39	.36	.37	.39	.35	.43	.35	.40
	.35	.36	.38	.38	.52	.49	.44	.55	.45	.36
	.57	.51	.52	.57	.48	.36	.37	.49	.39	.51
	.57	.58	.55	.62	.60	.45	.64	.62	.52	.58
	.53	.66	.54	.55	.61	.50	.47	.51	.43	.60
	.39	.56	.42	.75	.55	.45	.53	.49	.48	.69
	.67	.47	.35	.41	.59	.81	1.00	.53	.73	.50
	.42	.45	.59	-.06						
ROY 68										
	.24	.57	.37	.37	.42	.53	.26	.34	.30	.34
	.25	.23	.40	.42	.49	.43	.42	.39	.54	.40
	.40	.49	.44	.33	.50	.49	.48	.54	.42	.47
	.46	.57	.48	.52	.50	.35	.57	.58	.59	.49
	.52	.45	.43	.55	.58	.40	.39	.55	.34	.55
	.34	.44	.57	.41	.47	.35	.45	.50	.50	.51
	.47	.48	.46	.39	.48	.45	.53	1.00	.55	.62
	.36	.47	.57	.13						
ROY 69										
	.28	.42	.34	.46	.45	.37	.37	.40	.48	.47
	.37	.30	.39	.40	.52	.53	.48	.44	.46	.48
	.54	.56	.58	.56	.62	.34	.48	.49	.44	.45
	.61	.55	.47	.64	.56	.43	.65	.57	.51	.50
	.50	.62	.55	.61	.57	.55	.54	.46	.51	.68
	.37	.63	.65	.63	.40	.46	.59	.52	.43	.64
	.63	.41	.33	.43	.63	.68	.73	.55	1.00	.49
	.36	.45	.53	-.05						
ROY 70										
	.30	.40	.39	.39	.33	.52	.25	.30	.37	.46
	.33	.21	.26	.37	.49	.41	.45	.45	.44	.44
	.38	.53	.41	.35	.44	.43	.44	.52	.45	.41
	.44	.51	.30	.47	.49	.29	.45	.57	.47	.46
	.35	.51	.36	.50	.58	.50	.28	.44	.26	.44
	.31	.41	.37	.38	.32	.43	.34	.77	.48	.54
	.25	.17	.28	.30	.40	.40	.50	.62	.49	1.00
	.41	.39	.54	-.06						
ROY 71										
	.05	.27	.19	.34	.18	.16	.22	.17	.21	.06
	.14	.20	.16	.22	.18	.27	.22	.26	.27	.17
	.17	.23	.09	.24	.23	.06	.20	.10	.11	.28
	.30	.30	.15	.19	.14	.10	.29	.29	.17	.31
	.30	.20	.23	.24	.23	.12	.12	.03	.11	.25
	.10	.27	.40	.45	.27	.19	.24	.17	.22	.33
	.26	.13	.24	.23	.19	.26	.42	.36	.36	.41
	1.00	.52	.52	.00						
ROY 72										
	.17	.43	.27	.38	.33	.37	.39	.41	.34	.23
	.43	.37	.49	.45	.42	.45	.45	.51	.46	.34
	.44	.40	.36	.34	.48	.28	.48	.41	.40	.46
	.54	.46	.40	.36	.26	.20	.44	.57	.34	.49
	.43	.48	.49	.40	.49	.34	.21	.28	.24	.42

	.28	.35	.44	.43	.41	.39	.33	.25	.44	.47
	.42	.28	.20	.31	.49	.33	.45	.42	.45	.39
	.52	1.00	.62	.02						
ROW 73										
	.20	.34	.28	.32	.25	.42	.32	.24	.23	.22
	.30	.13	.32	.38	.51	.37	.45	.54	.39	.40
	.42	.41	.29	.33	.45	.39	.46	.44	.48	.38
	.44	.44	.49	.52	.41	.23	.44	.50	.58	.50
	.44	.54	.47	.54	.58	.44	.32	.36	.28	.51
	.35	.48	.58	.40	.38	.37	.48	.33	.40	.64
	.50	.33	.40	.40	.44	.51	.59	.57	.53	.54
	.52	.62	1.00	.02						
ROW 74										
	-.06	.14	.08	-.10	-.03	.21	.24	-.11	-.13	-.05
	-.08	-.05	.08	.07	-.03	.07	.04	-.22	.03	.04
	.08	.07	-.02	.03	.05	.1	.19	.01	-.01	-.04
	-.05	.15	.12	.02	.02	.1	.08	.1	.26	.18
	.30	-.09	.12	.04	.13	-.07	.14	.20	.20	.20
	.24	-.02	.11	.01	.03	-.02	.18	.30	.04	.04
	.13	.23	.28	.13	-.10	-.08	-.06	-.05	-.05	-.06
	.00	.02	.02	1.00						

Form B - Importance

FACTOR ANALYSIS.....IMPO,2

NO. OF CASES 126
NO. OF VARIABLES 74

MEANS

.08	.13	.16	.09	.22	.32	.31	.10	.13	.13
.08	.06	.15	.16	.46	.33	.35	.29	.28	.47
.43	.32	.31	.22	.31	.25	.37	.44	.42	.20
.28	.39	.11	.26	.22	.25	.57	.38	.28	.30
.35	.30	.42	.46	.45	.26	.45	.35	.44	.38
.24	.34	.31	.37	.22	.26	.34	.23	.36	.35
.41	.29	.24	.26	.25	.29	.34	.31	.36	.19
.10	.21	.19	.34						

STANDARD DEVIATIONS

.10	.20	.16	.12	.19	.25	.22	.14	.19	.20
.14	.11	.17	.17	.24	.23	.23	.23	.22	.25
.25	.24	.23	.22	.23	.24	.20	.26	.25	.22
.24	.24	.15	.22	.21	.23	.24	.27	.25	.27
.23	.26	.27	.26	.27	.23	.26	.25	.27	.24
.24	.27	.24	.25	.21	.25	.24	.22	.26	.29
.26	.24	.24	.27	.25	.25	.25	.25	.25	.22
.13	.22	.18	.48						

CORRELATION COEFFICIENTS

ROW 1

1.00	.45	.31	.57	.27	.30	.27	.52	.41	.42
.54	.43	.37	.27	.20	.15	.26	.26	.30	.12
.15	.23	.19	.29	.19	.28	.21	.23	.14	.36
.39	.30	.36	.20	.22	.27	.09	.30	.33	.24
.20	.23	.23	.17	.15	.28	.10	.12	.16	.23
.21	.22	.18	.16	.20	.29	.14	.22	.22	.25
.20	.20	.19	.21	.34	.33	.24	.30	.30	.34
.26	.28	.31	.09						

ROW 2

.45	1.00	.38	.52	.56	.67	.55	.52	.52	.50
.49	.36	.53	.42	.43	.27	.44	.45	.57	.38
.36	.44	.47	.51	.42	.44	.40	.44	.39	.40
.46	.53	.38	.44	.36	.44	.37	.46	.55	.46
.41	.39	.48	.33	.39	.39	.39	.40	.35	.47
.52	.38	.46	.29	.51	.38	.38	.44	.47	.49
.37	.44	.45	.41	.46	.40	.41	.54	.40	.47
.41	.42	.40	.04						

ROW 3

.31	.38	1.00	.43	.50	.34	.28	.45	.46	.50
.44	.39	.38	.47	.27	.27	.22	.25	.32	.21
.32	.35	.19	.43	.29	.31	.33	.21	.14	.26
.25	.44	.35	.38	.33	.30	.38	.37	.27	.36
.30	.26	.36	.37	.30	.23	.30	.33	.37	.34
.36	.30	.29	.26	.22	.36	.21	.24	.29	.29
.21	.30	.25	.31	.25	.26	.22	.31	.28	.37
.27	.25	.24	.08						

ROW 4

.57	.52	.43	1.00	.50	.38	.29	.82	.69	.68
.81	.41	.61	.40	.34	.25	.38	.37	.40	.27
.22	.40	.39	.42	.40	.42	.31	.38	.33	.51

	.47	.36	.57	.51	.44	.37	.29	.37	.30	.30
	.29	.45	.31	.29	.25	.43	.23	.25	.28	.36
	.22	.35	.34	.28	.39	.47	.25	.33	.24	.29
	.30	.24	.19	.32	.48	.39	.30	.38	.42	.46
	.41	.35	.26	-.11						
ROW 5	.27	.56	.50	.50	1.00	.42	.46	.46	.52	.48
	.45	.27	.56	.40	.44	.22	.25	.41	.35	.42
	.40	.37	.40	.30	.32	.37	.38	.37	.31	.31
	.33	.47	.29	.44	.35	.41	.45	.43	.32	.30
	.36	.31	.36	.35	.34	.26	.44	.41	.40	.37
	.31	.37	.45	.42	.40	.48	.43	.32	.35	.57
	.43	.41	.38	.49	.41	.26	.33	.38	.33	.29
	.26	.33	.19	-.00						
ROW 6	.30	.67	.34	.38	.42	1.00	.68	.46	.43	.39
	.45	.36	.47	.51	.47	.44	.54	.57	.57	.52
	.60	.51	.55	.53	.53	.59	.59	.49	.49	.37
	.55	.58	.39	.49	.49	.42	.46	.63	.67	.49
	.51	.40	.60	.46	.59	.40	.46	.47	.41	.52
	.55	.43	.50	.44	.48	.41	.51	.57	.58	.62
	.57	.53	.56	.42	.47	.39	.41	.59	.36	.50
	.28	.42	.40	.19						
ROW 7	.27	.55	.28	.29	.46	.68	1.00	.37	.36	.30
	.33	.30	.47	.40	.45	.32	.47	.55	.60	.64
	.58	.53	.52	.46	.53	.54	.61	.47	.46	.49
	.55	.68	.30	.44	.42	.46	.59	.66	.62	.56
	.49	.33	.64	.42	.60	.39	.47	.47	.46	.45
	.49	.42	.48	.48	.52	.38	.56	.45	.61	.65
	.60	.43	.50	.44	.50	.37	.38	.47	.38	.34
	.28	.49	.33	.13						
ROW 8	.52	.52	.45	.82	.44	.44	.37	1.00	.72	.63
	.81	.50	.66	.46	.33	.25	.42	.41	.44	.20
	.31	.41	.46	.46	.39	.44	.32	.39	.32	.48
	.48	.39	.62	.50	.50	.31	.36	.39	.32	.21
	.23	.43	.33	.30	.31	.43	.25	.30	.30	.35
	.21	.37	.29	.20	.40	.39	.24	.35	.19	.38
	.31	.32	.29	.33	.49	.39	.30	.34	.39	.40
	.34	.39	.26	-.12						
ROW 9	.41	.52	.46	.69	.52	.43	.36	.72	1.00	.72
	.73	.50	.60	.41	.31	.28	.33	.30	.34	.75
	.31	.40	.42	.38	.35	.31	.28	.35	.29	.40
	.52	.41	.46	.46	.41	.21	.34	.33	.24	.29
	.31	.39	.34	.24	.20	.36	.27	.26	.27	.29
	.17	.44	.31	.23	.41	.38	.24	.33	.16	.36
	.25	.32	.18	.33	.47	.36	.33	.25	.41	.32
	.28	.37	.20	-.19						
ROW 10	.42	.50	.50	.68	.48	.39	.30	.63	.72	1.00
	.68	.62	.58	.40	.31	.31	.31	.29	.37	.27
	.34	.48	.46	.47	.52	.34	.38	.36	.26	.49
	.53	.47	.48	.53	.47	.28	.35	.38	.38	.37
	.37	.40	.39	.32	.24	.43	.33	.37	.37	.42

	.25 .36 .34	.40 .44 .38	.37 .29 .25	.30 .36 =.09	.38 .46	.39 .48	.28 .48	.39 .37	.23 .52	.38 .42
ROW 11	.54 1.00 .27 .45 .27 .21 .25 .34	.49 .48 .38 .39 .36 .33 .32 .37	.44 .44 .44 .58 .44 .26 .70 .25	.81 .41 .44 .44 .31 .16 .37 =.16	.45 .33 .39 .38 .25 .39 .44	.45 .29 .38 .37 .47 .45 .12	.33 .42 .29 .28 .26 .20 .24	.81 .38 .33 .39 .25 .35 .28	.73 .40 .31 .31 .29 .21 .33	.68 .73 .48 .22 .32 .32 .40
ROW 12	.43 .48 .28 .47 .18 .14 .31 .21	.36 1.00 .35 .36 .34 .30 .34 .39	.39 .44 .37 .46 .34 .20 .32 .22	.41 .33 .43 .37 .30 .21 .30 =.05	.27 .23 .30 .36 .20 .18 .34	.36 .33 .29 .23 .35 .26 .43	.30 .31 .29 .31 .76 .15 .35	.50 .26 .26 .36 .27 .34 .24	.50 .27 .20 .27 .31 .14 .39	.62 .11 .35 .19 .28 .29 .22
ROW 13	.37 .64 .46 .46 .41 .39 .45 .37	.53 .44 .42 .48 .33 .45 .45 .49	.38 1.00 .43 .54 .49 .40 .30 .44	.61 .47 .54 .48 .44 .43 .45 .02	.56 .34 .51 .45 .39 .49 .55	.47 .34 .43 .37 .39 .38 .53	.47 .34 .38 .47 .42 .37 .48	.66 .43 .34 .59 .42 .39 .44	.60 .51 .34 .46 .43 .32 .46	.58 .34 .49 .36 .51 .59 .36
ROW 14	.27 .41 .39 .38 .32 .33 .27 .33	.42 .33 .35 .42 .28 .32 .29 .39	.47 .47 .48 .37 .37 .31 .32 .32	.40 1.00 .48 .34 .33 .34 .31 .11	.40 .35 .46 .27 .37 .30 .39	.51 .34 .34 .26 .32 .32 .34	.40 .43 .33 .35 .33 .35 .33	.46 .39 .26 .41 .34 .30 .34	.41 .40 .28 .45 .32 .32 .36	.40 .31 .17 .32 .12 .41 .38
ROW 15	.20 .33 .49 .44 .48 .42 .40 .17	.43 .23 .44 .52 .50 .51 .42 .19	.27 .34 .50 .31 .46 .47 .39 .30	.34 .35 .44 .54 .52 .42 .47 =.05	.44 1.00 .42 .44 .48 .40 .45	.47 .57 .45 .46 .37 .45 .37	.45 .65 .42 .58 .50 .44 .41	.33 .66 .45 .47 .47 .38 .43	.31 .60 .56 .35 .54 .36 .41	.31 .58 .12 .39 .48 .45 .35
ROW 16	.15 .29 .48 .46 .59 .35 .37	.27 .33 .46 .45 .39 .49 .47	.27 .34 .50 .35 .51 .33 .31	.25 .34 .49 .41 .53 .38 .40	.22 .57 .49 .43 .51 .28 .39	.44 1.00 .42 .51 .34 .38 .42	.32 .69 .38 .50 .49 .35 .44	.25 .54 .42 .49 .34 .46 .45	.26 .48 .43 .33 .49 .37 .41	.31 .41 .30 .39 .53 .35 .36

	.32	.31	.32	-.04						
ROW 17										
	.26	.44	.22	.38	.25	.54	.47	.42	.33	.31
	.42	.31	.34	.43	.65	.69	1.00	.73	.67	.50
	.48	.51	.65	.51	.50	.58	.50	.64	.49	.41
	.53	.53	.44	.52	.47	.51	.51	.53	.36	.40
	.48	.52	.51	.53	.55	.52	.45	.40	.43	.49
	.42	.52	.35	.34	.48	.53	.44	.55	.38	.37
	.39	.45	.39	.43	.46	.40	.39	.52	.42	.41
	.31	.36	.34	-.08						
ROW 18										
	.24	.45	.25	.37	.41	.57	.55	.41	.30	.29
	.38	.26	.43	.39	.66	.54	.73	1.00	.70	.58
	.61	.51	.58	.57	.49	.63	.64	.56	.53	.46
	.53	.61	.46	.55	.58	.47	.53	.66	.48	.41
	.47	.51	.59	.53	.62	.45	.50	.48	.53	.53
	.48	.56	.46	.47	.52	.61	.60	.49	.50	.56
	.50	.50	.43	.47	.58	.53	.50	.54	.50	.43
	.25	.40	.37	-.05						
ROW 19										
	.30	.57	.32	.40	.35	.57	.60	.44	.34	.37
	.40	.27	.51	.40	.60	.48	.67	.70	1.00	.55
	.54	.51	.54	.59	.55	.55	.54	.54	.46	.53
	.45	.62	.38	.49	.47	.42	.57	.56	.56	.51
	.51	.40	.56	.54	.57	.46	.52	.55	.54	.61
	.56	.40	.45	.34	.52	.42	.48	.42	.47	.48
	.41	.51	.43	.49	.44	.45	.37	.56	.36	.42
	.20	.32	.36	.12						
ROW 20										
	.12	.38	.21	.27	.42	.52	.64	.20	.25	.27
	.23	.11	.34	.31	.58	.41	.50	.58	.55	1.00
	.59	.57	.49	.39	.55	.55	.73	.56	.66	.50
	.51	.62	.21	.51	.41	.54	.61	.58	.52	.55
	.55	.46	.62	.55	.60	.34	.50	.50	.53	.43
	.43	.43	.51	.44	.42	.45	.54	.40	.62	.58
	.60	.41	.39	.45	.47	.32	.36	.50	.42	.40
	.27	.33	.28	.05						
ROW 21										
	.15	.36	.32	.22	.40	.60	.58	.31	.31	.34
	.27	.28	.46	.39	.49	.48	.48	.61	.54	.59
	1.00	.70	.60	.60	.63	.53	.59	.44	.50	.45
	.47	.68	.32	.52	.55	.45	.57	.62	.59	.53
	.59	.32	.62	.66	.69	.42	.61	.62	.58	.59
	.52	.56	.58	.59	.39	.38	.63	.43	.53	.67
	.62	.62	.50	.48	.43	.50	.50	.51	.47	.36
	.23	.38	.42	.12						
ROW 22										
	.23	.44	.35	.40	.37	.51	.53	.43	.40	.48
	.38	.35	.42	.35	.44	.46	.51	.51	.51	.57
	.70	1.00	.69	.69	.74	.62	.61	.53	.58	.64
	.61	.63	.37	.56	.54	.46	.56	.61	.55	.60
	.53	.46	.59	.56	.60	.50	.48	.50	.50	.47
	.51	.56	.53	.48	.44	.57	.57	.42	.49	.58
	.59	.62	.43	.51	.53	.47	.50	.56	.59	.46
	.34	.46	.32	-.02						

ROW 23

.19	.47	.39	.39	.40	.55	.52	.46	.42	.46
.44	.37	.43	.48	.50	.50	.65	.58	.54	.49
.60	.69	1.00	.65	.64	.62	.57	.55	.49	.45
.55	.64	.44	.62	.48	.49	.59	.58	.45	.53
.50	.58	.56	.64	.57	.54	.52	.55	.52	.56
.47	.65	.52	.41	.55	.51	.57	.68	.49	.59
.54	.58	.49	.53	.46	.45	.49	.57	.57	.46
.35	.41	.40	-.10						

ROW 24

.29	.51	.43	.42	.30	.53	.46	.46	.38	.47
.44	.43	.54	.48	.44	.49	.51	.57	.59	.39
.60	.69	.65	1.00	.65	.60	.49	.41	.46	.65
.56	.58	.41	.55	.55	.38	.50	.63	.54	.55
.48	.50	.58	.55	.54	.50	.44	.51	.47	.62
.59	.49	.49	.46	.43	.44	.40	.43	.50	.58
.45	.57	.39	.46	.58	.59	.57	.54	.59	.51
.39	.43	.42	.01						

ROW 25

.19	.42	.29	.40	.32	.53	.53	.39	.35	.52
.39	.30	.51	.46	.42	.49	.50	.49	.55	.55
.63	.74	.64	.65	1.00	.54	.54	.49	.54	.68
.55	.64	.47	.52	.56	.54	.58	.64	.70	.65
.66	.42	.71	.58	.60	.49	.57	.52	.51	.58
.55	.58	.65	.54	.52	.43	.54	.53	.55	.64
.67	.68	.51	.55	.60	.58	.61	.61	.69	.46
.39	.50	.43	.10						

ROW 26

.28	.44	.31	.42	.32	.59	.54	.44	.31	.34
.38	.29	.43	.36	.45	.42	.58	.63	.55	.55
.53	.62	.62	.60	.54	1.00	.64	.59	.53	.51
.54	.56	.33	.53	.57	.55	.47	.60	.45	.52
.53	.51	.56	.53	.60	.47	.45	.52	.57	.48
.51	.50	.40	.49	.47	.54	.50	.52	.55	.53
.53	.50	.39	.44	.52	.48	.50	.57	.48	.41
.35	.40	.41	-.03						

ROW 27

.21	.40	.33	.31	.38	.59	.61	.32	.28	.38
.29	.29	.38	.33	.42	.38	.50	.64	.54	.73
.59	.61	.57	.49	.54	.64	1.00	.65	.63	.45
.56	.65	.35	.58	.53	.56	.64	.69	.55	.52
.50	.50	.66	.55	.62	.39	.48	.57	.50	.45
.48	.47	.51	.48	.42	.49	.59	.50	.63	.61
.67	.45	.47	.45	.47	.41	.42	.55	.44	.46
.22	.48	.31	.09						

ROW 28

.23	.44	.21	.38	.37	.49	.47	.39	.35	.36
.33	.26	.34	.26	.45	.42	.64	.56	.54	.56
.44	.53	.55	.41	.49	.59	.65	1.00	.70	.55
.57	.58	.30	.55	.56	.47	.52	.51	.43	.41
.51	.47	.52	.51	.51	.38	.40	.42	.41	.42
.38	.38	.29	.33	.42	.40	.49	.51	.41	.46
.54	.48	.38	.48	.53	.36	.40	.57	.46	.45
.24	.38	.36	-.09						

ROW 29

.14	.39	.14	.33	.31	.49	.46	.32	.29	.26
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	.31	.20	.34	.28	.56	.43	.49	.53	.46	.66
	.50	.58	.49	.46	.54	.53	.63	.70	1.00	.51
	.57	.56	.30	.48	.49	.47	.57	.57	.49	.45
	.47	.40	.54	.54	.52	.34	.49	.49	.45	.42
	.38	.40	.45	.40	.35	.41	.48	.34	.47	.53
	.54	.46	.38	.43	.53	.38	.37	.49	.49	.49
	.23	.39	.34	-.12						
ROW 30										
	.36	.40	.26	.51	.31	.37	.49	.48	.40	.49
	.48	.35	.49	.37	.32	.30	.41	.46	.53	.50
	.45	.64	.45	.65	.68	.53	.45	.55	.51	1.00
	.61	.59	.36	.52	.48	.35	.41	.58	.59	.50
	.48	.43	.54	.42	.48	.47	.34	.38	.34	.47
	.42	.35	.37	.32	.44	.37	.37	.35	.45	.52
	.52	.49	.27	.42	.66	.48	.45	.47	.51	.43
	.31	.41	.37	-.06						
ROW 31										
	.39	.46	.25	.47	.33	.55	.55	.48	.52	.53
	.45	.47	.46	.38	.44	.44	.51	.53	.45	.51
	.47	.61	.55	.56	.55	.54	.56	.57	.57	.61
	1.00	.65	.47	.48	.50	.72	.52	.70	.52	.51
	.49	.56	.57	.44	.54	.44	.36	.39	.38	.50
	.36	.53	.41	.45	.41	.49	.48	.44	.47	.56
	.49	.48	.44	.44	.77	.54	.60	.54	.62	.55
	.36	.54	.36	-.13						
ROW 32										
	.30	.53	.44	.36	.47	.58	.68	.39	.41	.47
	.39	.36	.48	.42	.52	.45	.53	.61	.62	.67
	.68	.63	.64	.58	.64	.56	.65	.58	.56	.59
	.65	1.00	.36	.57	.55	.50	.67	.75	.64	.67
	.69	.43	.77	.68	.70	.44	.64	.67	.64	.63
	.61	.58	.56	.51	.53	.51	.61	.48	.69	.68
	.71	.61	.50	.54	.61	.54	.52	.57	.57	.52
	.41	.52	.43	.11						
ROW 33										
	.36	.38	.35	.57	.29	.39	.30	.62	.46	.48
	.58	.46	.54	.37	.31	.35	.44	.46	.38	.21
	.32	.37	.44	.41	.47	.33	.35	.30	.30	.36
	.47	.36	1.00	.48	.50	.37	.37	.46	.43	.29
	.29	.50	.45	.44	.44	.60	.39	.39	.33	.49
	.27	.52	.43	.36	.41	.41	.39	.57	.33	.41
	.43	.34	.41	.43	.49	.56	.51	.42	.55	.34
	.28	.47	.43	-.02						
ROW 34										
	.20	.44	.38	.51	.44	.49	.44	.50	.46	.53
	.44	.37	.48	.34	.54	.41	.52	.55	.49	.51
	.57	.56	.62	.55	.52	.53	.58	.55	.48	.52
	.48	.57	.48	1.00	.67	.54	.56	.57	.49	.54
	.51	.66	.51	.61	.60	.55	.60	.61	.55	.66
	.46	.57	.60	.55	.52	.49	.57	.60	.45	.58
	.60	.49	.42	.56	.42	.51	.49	.47	.59	.45
	.35	.36	.43	-.06						
ROW 35										
	.22	.36	.33	.44	.35	.49	.42	.50	.41	.47
	.38	.36	.45	.27	.44	.43	.47	.58	.47	.41
	.55	.54	.48	.55	.56	.57	.53	.56	.49	.48

	.50	.55	.50	.67	1.00	.56	.57	.54	.49	.41
	.57	.45	.57	.52	.55	.41	.50	.53	.57	.52
	.47	.55	.49	.59	.41	.46	.54	.54	.42	.53
	.54	.50	.40	.39	.55	.48	.58	.53	.63	.45
	.26	.30	.34	-.03						
ROW 36										
	.27	.44	.30	.37	.41	.42	.46	.31	.21	.28
	.32	.23	.37	.26	.46	.51	.51	.47	.42	.54
	.45	.46	.49	.38	.54	.55	.56	.47	.47	.35
	.37	.50	.37	.54	.56	1.00	.60	.51	.45	.46
	.64	.45	.56	.59	.55	.45	.60	.55	.59	.49
	.44	.51	.50	.50	.40	.40	.45	.49	.57	.46
	.57	.48	.44	.49	.35	.39	.40	.48	.49	.41
	.34	.31	.30	.09						
ROW 37										
	.09	.37	.38	.29	.45	.46	.59	.36	.34	.35
	.28	.31	.47	.35	.58	.50	.51	.53	.57	.61
	.57	.56	.59	.50	.58	.47	.64	.52	.57	.41
	.52	.67	.37	.56	.57	.60	1.00	.67	.51	.56
	.60	.46	.69	.68	.64	.41	.63	.58	.68	.55
	.46	.59	.54	.54	.43	.46	.57	.46	.56	.59
	.65	.54	.51	.52	.45	.48	.52	.55	.55	.41
	.26	.44	.29	.06						
ROW 38										
	.30	.46	.37	.37	.43	.63	.66	.39	.33	.38
	.39	.36	.59	.41	.47	.49	.53	.66	.56	.58
	.62	.61	.58	.63	.64	.60	.69	.51	.57	.58
	.70	.75	.46	.57	.54	.51	.67	1.00	.71	.62
	.64	.53	.80	.61	.75	.49	.60	.58	.55	.67
	.60	.60	.58	.61	.54	.65	.64	.52	.69	.76
	.73	.63	.52	.62	.71	.57	.60	.62	.59	.58
	.47	.63	.49	.06						
ROW 39										
	.33	.55	.27	.30	.32	.67	.62	.32	.24	.38
	.31	.27	.46	.45	.35	.33	.36	.48	.56	.52
	.59	.55	.45	.54	.70	.45	.55	.43	.49	.59
	.57	.64	.43	.49	.49	.45	.51	.71	1.00	.63
	.61	.33	.69	.48	.62	.40	.55	.52	.44	.57
	.66	.41	.61	.56	.44	.33	.56	.50	.65	.75
	.69	.64	.63	.55	.50	.53	.51	.62	.52	.51
	.34	.45	.57	.28						
ROW 40										
	.24	.46	.36	.30	.30	.49	.56	.21	.29	.37
	.22	.19	.36	.32	.39	.39	.40	.41	.51	.55
	.53	.60	.53	.55	.65	.52	.52	.41	.45	.50
	.51	.67	.29	.54	.41	.46	.56	.62	.63	1.00
	.75	.43	.73	.63	.63	.47	.59	.56	.56	.68
	.71	.51	.77	.61	.60	.44	.54	.47	.65	.57
	.58	.56	.48	.52	.41	.53	.55	.49	.58	.40
	.50	.43	.49	.14						
ROW 41										
	.20	.41	.30	.29	.36	.51	.49	.23	.31	.37
	.27	.18	.41	.32	.48	.59	.48	.47	.51	.55
	.59	.53	.50	.48	.66	.53	.50	.51	.47	.48
	.49	.69	.29	.51	.57	.64	.60	.64	.61	.75
	1.00	.40	.78	.66	.66	.38	.67	.55	.65	.64

	.58	.53	.62	.64	.49	.41	.53	.48	.63	.56
	.63	.63	.49	.58	.51	.55	.60	.54	.56	.40
	.42	.42	.49	.14						
ROW 42										
	.23	.39	.26	.45	.31	.40	.33	.43	.39	.40
	.36	.34	.33	.28	.50	.39	.52	.51	.40	.46
	.32	.46	.58	.50	.42	.51	.50	.47	.40	.43
	.56	.43	.50	.66	.45	.45	.46	.53	.33	.43
	.40	1.00	.53	.52	.58	.65	.42	.46	.47	.55
	.32	.63	.48	.41	.47	.50	.46	.59	.40	.43
	.48	.31	.36	.41	.55	.46	.47	.41	.51	.50
	.21	.36	.36	.18						
ROW 43										
	.23	.48	.36	.31	.36	.60	.64	.33	.34	.39
	.34	.34	.49	.37	.46	.51	.51	.59	.56	.62
	.62	.59	.56	.58	.71	.56	.66	.52	.54	.54
	.57	.77	.45	.51	.57	.56	.69	.80	.69	.73
	.78	.53	1.00	.69	.77	.51	.65	.62	.68	.46
	.62	.64	.65	.55	.56	.54	.62	.55	.69	.68
	.76	.60	.51	.58	.62	.59	.63	.57	.59	.48
	.43	.57	.46	.12						
ROW 44										
	.17	.33	.37	.29	.35	.46	.42	.30	.24	.32
	.31	.30	.44	.33	.52	.53	.53	.53	.54	.55
	.66	.56	.64	.55	.58	.53	.55	.51	.54	.42
	.44	.68	.44	.61	.52	.59	.68	.61	.48	.63
	.66	.52	.69	1.00	.76	.55	.74	.70	.76	.71
	.55	.62	.59	.52	.45	.44	.58	.50	.59	.57
	.60	.62	.49	.57	.40	.51	.51	.49	.55	.41
	.36	.39	.46	.01						
ROW 45										
	.15	.39	.30	.25	.34	.59	.60	.31	.27	.24
	.25	.20	.39	.37	.48	.51	.55	.62	.57	.60
	.49	.60	.57	.54	.60	.60	.62	.51	.52	.48
	.54	.70	.44	.60	.55	.55	.64	.75	.62	.63
	.66	.58	.77	.76	1.00	.59	.74	.72	.66	.73
	.58	.66	.60	.61	.52	.53	.65	.57	.74	.66
	.70	.58	.53	.54	.51	.49	.56	.60	.54	.55
	.39	.52	.48	.08						
ROW 46										
	.28	.39	.23	.43	.26	.40	.39	.43	.36	.43
	.47	.15	.39	.32	.37	.34	.52	.45	.46	.34
	.42	.50	.54	.50	.49	.47	.39	.38	.34	.47
	.44	.44	.60	.55	.41	.45	.41	.49	.40	.47
	.38	.65	.51	.55	.59	1.00	.56	.52	.49	.56
	.35	.58	.49	.36	.61	.54	.45	.55	.44	.41
	.50	.39	.40	.51	.46	.52	.54	.35	.53	.39
	.29	.44	.42	.11						
ROW 47										
	.10	.39	.30	.23	.44	.46	.47	.25	.27	.33
	.26	.26	.42	.33	.50	.49	.45	.50	.52	.50
	.61	.48	.52	.44	.57	.45	.48	.40	.49	.34
	.36	.64	.39	.60	.50	.60	.63	.60	.55	.59
	.67	.42	.65	.74	.74	.56	1.00	.75	.75	.69
	.55	.58	.70	.60	.48	.43	.61	.50	.57	.60
	.63	.67	.53	.61	.36	.53	.55	.46	.51	.41

	.32	.41	.49	.07						
ROW 48										
	.12	.40	.33	.25	.41	.47	.47	.30	.26	.37
	.25	.27	.42	.34	.47	.34	.40	.48	.55	.50
	.62	.50	.55	.51	.52	.57	.47	.49	.49	.38
	.39	.67	.39	.61	.53	.55	.58	.58	.62	.56
	.55	.46	.62	.70	.72	.57	.75	1.00	.68	.67
	.61	.61	.67	.52	.51	.46	.61	.51	.62	.64
	.62	.56	.48	.50	.36	.52	.50	.45	.49	.49
	.29	.37	.39	.12						
ROW 49										
	.16	.35	.37	.28	.40	.41	.46	.30	.27	.37
	.29	.31	.43	.32	.54	.49	.43	.53	.54	.53
	.58	.50	.52	.47	.51	.57	.50	.41	.45	.34
	.38	.64	.33	.55	.57	.59	.68	.56	.44	.56
	.65	.47	.68	.76	.66	.49	.75	.68	1.00	.63
	.50	.58	.54	.57	.45	.49	.58	.43	.56	.51
	.58	.58	.44	.52	.39	.52	.54	.43	.54	.41
	.37	.36	.42	.09						
ROW 50										
	.23	.47	.34	.36	.37	.52	.45	.35	.29	.42
	.37	.28	.51	.32	.48	.51	.49	.53	.61	.43
	.59	.47	.56	.67	.58	.48	.45	.42	.42	.42
	.50	.63	.49	.66	.52	.49	.55	.67	.57	.68
	.64	.55	.66	.71	.73	.58	.69	.67	.63	1.00
	.65	.61	.66	.53	.56	.49	.61	.58	.59	.63
	.57	.64	.80	.60	.45	.53	.56	.56	.58	.53
	.41	.39	.46	.11						
ROW 51										
	.21	.52	.36	.22	.31	.55	.49	.21	.17	.25
	.21	.14	.39	.33	.42	.35	.42	.48	.56	.43
	.52	.51	.47	.59	.55	.51	.40	.38	.38	.42
	.36	.61	.27	.46	.42	.44	.46	.60	.66	.71
	.58	.32	.62	.55	.58	.35	.55	.61	.50	.65
	1.00	.46	.64	.57	.53	.36	.57	.46	.62	.62
	.57	.62	.55	.52	.38	.41	.43	.54	.42	.45
	.41	.25	.45	.30						
ROW 52										
	.27	.38	.30	.35	.37	.43	.42	.37	.44	.40
	.33	.30	.45	.32	.51	.49	.52	.56	.40	.43
	.56	.56	.65	.49	.58	.50	.47	.38	.40	.35
	.53	.58	.52	.57	.55	.51	.59	.60	.41	.51
	.53	.63	.64	.62	.66	.58	.58	.61	.58	.61
	.46	1.00	.63	.55	.63	.60	.63	.64	.52	.60
	.60	.54	.48	.54	.54	.54	.61	.47	.62	.48
	.36	.39	.37	.15						
ROW 53										
	.18	.46	.29	.34	.45	.50	.48	.29	.31	.37
	.26	.20	.40	.31	.47	.33	.35	.46	.45	.51
	.58	.53	.52	.49	.65	.40	.51	.29	.45	.37
	.41	.56	.43	.60	.49	.50	.54	.58	.61	.72
	.62	.48	.65	.59	.60	.49	.70	.67	.54	.66
	.64	.63	1.00	.66	.61	.49	.68	.53	.57	.68
	.66	.62	.57	.59	.37	.54	.57	.47	.58	.40
	.37	.39	.41	.08						

ROW 54	.16	.29	.26	.28	.42	.44	.48	.20	.23	.30
	.16	.21	.43	.34	.42	.38	.34	.47	.34	.46
	.59	.48	.41	.46	.54	.49	.48	.33	.40	.32
	.45	.51	.36	.55	.59	.50	.54	.61	.56	.61
	.64	.41	.55	.52	.61	.36	.60	.52	.57	.53
	.52	.55	.66	1.00	.49	.43	.62	.46	.55	.63
	.62	.49	.42	.43	.44	.59	.65	.48	.57	.37
	.41	.41	.49	.10						
ROW 55	.20	.51	.22	.39	.40	.48	.52	.40	.41	.38
	.39	.18	.49	.30	.40	.28	.48	.52	.52	.42
	.39	.44	.55	.43	.52	.47	.42	.42	.35	.44
	.41	.53	.41	.52	.41	.40	.43	.54	.44	.60
	.49	.47	.56	.45	.52	.61	.48	.51	.45	.56
	.51	.63	.61	.49	1.00	.53	.58	.55	.52	.51
	.53	.50	.44	.46	.43	.46	.53	.40	.48	.35
	.45	.43	.38	-.00						
ROW 56	.29	.38	.36	.47	.48	.41	.38	.39	.38	.39
	.45	.26	.38	.32	.45	.38	.53	.61	.42	.45
	.38	.44	.51	.44	.43	.54	.49	.40	.41	.37
	.49	.51	.41	.49	.46	.40	.46	.65	.33	.44
	.41	.50	.54	.44	.53	.54	.43	.46	.49	.49
	.36	.60	.49	.43	.53	1.00	.50	.44	.50	.47
	.48	.40	.76	.51	.59	.41	.46	.38	.48	.47
	.39	.49	.78	-.20						
ROW 57	.14	.38	.21	.25	.43	.51	.56	.24	.24	.28
	.20	.15	.37	.35	.44	.35	.44	.60	.48	.54
	.63	.57	.57	.48	.54	.50	.59	.49	.48	.37
	.48	.61	.39	.57	.54	.45	.57	.64	.56	.54
	.53	.46	.62	.58	.65	.45	.61	.61	.58	.61
	.57	.63	.68	.62	.58	.50	1.00	.58	.63	.70
	.65	.64	.65	.65	.46	.50	.57	.63	.58	.50
	.37	.44	.43	.09						
ROW 58	.22	.44	.24	.33	.32	.57	.45	.35	.33	.39
	.35	.34	.39	.30	.38	.46	.55	.49	.42	.40
	.43	.42	.68	.43	.53	.52	.50	.51	.34	.35
	.46	.48	.57	.60	.54	.49	.46	.52	.50	.47
	.48	.59	.55	.50	.57	.55	.50	.51	.43	.58
	.46	.64	.53	.46	.55	.44	.58	1.00	.53	.53
	.58	.50	.52	.43	.45	.52	.53	.61	.53	.40
	.25	.37	.47	.02						
ROW 59	.22	.47	.29	.24	.35	.58	.61	.19	.16	.23
	.21	.14	.32	.32	.36	.37	.38	.50	.47	.62
	.53	.49	.49	.50	.55	.55	.63	.41	.47	.45
	.47	.69	.33	.45	.42	.57	.56	.69	.65	.45
	.63	.40	.69	.58	.74	.44	.57	.62	.56	.59
	.62	.52	.57	.55	.52	.50	.63	.53	1.00	.65
	.66	.51	.52	.47	.48	.45	.50	.56	.49	.55
	.42	.49	.48	.29						
ROW 60	.25	.49	.29	.29	.52	.62	.65	.38	.36	.38

	.32	.29	.59	.41	.45	.35	.37	.56	.48	.58
	.67	.58	.59	.58	.64	.53	.61	.46	.53	.52
	.56	.68	.41	.58	.53	.46	.59	.76	.75	.57
	.56	.43	.68	.57	.66	.41	.60	.64	.51	.63
	.62	.60	.68	.63	.51	.47	.70	.53	.65	1.00
	.75	.65	.64	.64	.57	.57	.60	.66	.61	.56
	.33	.50	.51	.07						
ROW 61										
	.20	.37	.21	.30	.43	.52	.60	.31	.25	.36
	.25	.31	.45	.27	.40	.37	.39	.50	.41	.60
	.67	.59	.54	.45	.67	.53	.67	.54	.54	.52
	.49	.71	.43	.60	.54	.57	.65	.73	.69	.58
	.63	.48	.76	.60	.70	.50	.63	.62	.58	.57
	.57	.67	.66	.62	.53	.48	.65	.58	.66	.75
	1.00	.65	.59	.62	.54	.53	.59	.59	.59	.43
	.37	.50	.50	.15						
ROW 62										
	.20	.44	.30	.24	.41	.53	.43	.32	.32	.44
	.32	.34	.45	.29	.42	.47	.45	.50	.51	.41
	.62	.62	.58	.57	.68	.50	.45	.48	.46	.49
	.48	.61	.34	.49	.50	.48	.54	.63	.64	.56
	.63	.31	.60	.62	.58	.39	.67	.56	.58	.64
	.62	.54	.62	.49	.50	.40	.64	.50	.51	.65
	.65	1.00	.66	.70	.42	.47	.59	.64	.59	.43
	.37	.38	.48	.14						
ROW 63										
	.19	.45	.25	.19	.38	.56	.50	.29	.18	.29
	.20	.32	.30	.32	.39	.31	.39	.43	.43	.39
	.50	.43	.49	.39	.51	.39	.47	.38	.38	.27
	.44	.50	.41	.42	.40	.44	.51	.52	.63	.48
	.49	.36	.51	.49	.53	.40	.53	.48	.44	.60
	.55	.48	.57	.42	.44	.26	.65	.52	.52	.64
	.59	.66	1.00	.65	.34	.41	.48	.57	.48	.43
	.22	.22	.37	.25						
ROW 64										
	.21	.41	.31	.32	.49	.42	.44	.33	.33	.36
	.37	.30	.45	.31	.47	.40	.43	.47	.49	.45
	.48	.51	.53	.46	.55	.44	.45	.48	.43	.42
	.44	.54	.43	.56	.39	.49	.52	.62	.55	.52
	.58	.41	.58	.57	.54	.51	.61	.50	.52	.60
	.52	.54	.59	.43	.46	.51	.65	.43	.47	.64
	.62	.70	.65	1.00	.45	.39	.53	.49	.51	.41
	.33	.40	.42	.00						
ROW 65										
	.34	.46	.25	.48	.41	.47	.50	.49	.47	.46
	.44	.34	.55	.39	.45	.39	.46	.58	.44	.47
	.43	.53	.46	.58	.60	.52	.47	.53	.53	.66
	.77	.61	.49	.42	.55	.35	.45	.71	.50	.41
	.51	.55	.62	.40	.51	.46	.36	.36	.39	.45
	.38	.54	.37	.44	.43	.59	.46	.45	.48	.57
	.54	.42	.34	.45	1.00	.57	.61	.49	.57	.55
	.31	.53	.41	.14						
ROW 66										
	.33	.40	.26	.39	.26	.39	.37	.39	.36	.48
	.32	.43	.53	.34	.37	.42	.40	.53	.45	.32
	.50	.47	.45	.59	.58	.48	.41	.36	.38	.48

	.54	.54	.56	.51	.68	.39	.48	.52	.53	.53
	.55	.46	.59	.51	.49	.52	.51	.52	.52	.53
	.41	.54	.54	.59	.46	.41	.50	.52	.45	.57
	.53	.47	.41	.39	.57	1.00	.83	.52	.75	.36
	.30	.48	.54	-.00						
ROW 67										
	.24	.41	.22	.30	.33	.41	.38	.30	.33	.48
	.24	.35	.48	.33	.41	.44	.39	.50	.37	.36
	.50	.50	.49	.57	.61	.50	.42	.40	.37	.45
	.60	.52	.51	.49	.58	.40	.52	.60	.51	.55
	.60	.47	.63	.51	.56	.54	.55	.50	.54	.56
	.43	.61	.57	.65	.53	.46	.57	.53	.50	.60
	.59	.59	.48	.53	.61	.83	1.00	.58	.79	.39
	.41	.49	.54	-.04						
ROW 68										
	.30	.54	.31	.38	.38	.59	.47	.34	.25	.37
	.28	.24	.44	.34	.43	.45	.52	.54	.66	.50
	.51	.56	.57	.54	.61	.57	.55	.57	.49	.47
	.54	.57	.42	.47	.53	.48	.55	.62	.62	.49
	.54	.41	.57	.49	.60	.35	.46	.45	.43	.56
	.54	.47	.47	.48	.40	.38	.63	.61	.56	.66
	.59	.64	.57	.49	.49	.52	.58	1.00	.59	.65
	.41	.47	.55	.10						
ROW 69										
	.30	.40	.28	.42	.33	.36	.38	.39	.41	.52
	.33	.39	.46	.36	.41	.41	.42	.50	.36	.42
	.47	.59	.57	.59	.69	.48	.44	.46	.49	.51
	.62	.57	.55	.59	.63	.49	.55	.59	.52	.58
	.56	.51	.59	.55	.54	.51	.51	.49	.54	.58
	.42	.62	.58	.57	.48	.48	.58	.53	.49	.61
	.59	.59	.48	.51	.57	.75	.79	.59	1.00	.45
	.49	.51	.48	-.10						
ROW 70										
	.34	.47	.37	.46	.29	.50	.34	.40	.32	.42
	.40	.22	.36	.38	.35	.36	.41	.43	.42	.40
	.36	.46	.46	.51	.46	.41	.46	.45	.49	.43
	.55	.52	.34	.45	.45	.41	.41	.58	.51	.40
	.40	.50	.48	.41	.55	.38	.41	.49	.41	.53
	.45	.48	.40	.37	.35	.47	.50	.40	.55	.56
	.43	.43	.43	.41	.55	.36	.39	.65	.45	1.00
	.49	.43	.46	-.03						
ROW 71										
	.26	.41	.27	.41	.26	.28	.28	.34	.28	.34
	.34	.21	.37	.33	.17	.32	.31	.25	.20	.27
	.23	.34	.35	.39	.39	.35	.22	.24	.23	.31
	.36	.41	.28	.35	.26	.34	.26	.42	.34	.50
	.42	.23	.43	.36	.19	.29	.32	.29	.37	.41
	.41	.36	.37	.41	.45	.39	.37	.25	.42	.33
	.32	.37	.22	.33	.31	.30	.41	.41	.49	.49
	1.00	.54	.46	.01						
ROW 72										
	.28	.42	.25	.35	.33	.42	.49	.39	.37	.38
	.37	.39	.49	.39	.19	.31	.36	.40	.32	.33
	.38	.46	.41	.43	.50	.40	.48	.38	.39	.41
	.54	.52	.47	.36	.30	.31	.44	.63	.45	.43
	.42	.36	.57	.39	.52	.44	.41	.37	.36	.39

	.25	.39	.39	.41	.43	.49	.44	.37	.49	.50
	.50	.38	.27	.40	.53	.48	.49	.47	.51	.43
	.54	1.00	.56	.02						
ROW 73										
	.31	.40	.24	.26	.19	.40	.13	.26	.20	.25
	.25	.22	.44	.32	.30	.32	.34	.37	.36	.28
	.42	.32	.40	.42	.43	.41	.31	.36	.34	.37
	.36	.43	.43	.43	.34	.30	.29	.49	.57	.49
	.49	.36	.46	.46	.48	.42	.49	.39	.42	.46
	.45	.37	.41	.49	.38	.28	.43	.47	.48	.51
	.50	.48	.37	.42	.41	.54	.54	.55	.48	.46
	.46	.56	1.00	.06						
ROW 74										
	-.09	.04	.08	-.11	-.00	.19	.13	-.12	-.19	-.09
	-.16	-.05	.02	.11	-.05	-.04	-.00	-.05	.12	.05
	.12	-.02	-.10	.01	.10	-.03	.09	-.09	.12	-.06
	-.13	.11	-.02	-.06	-.03	.09	.06	.06	.28	.14
	.14	-.18	.12	.01	.08	-.11	.07	.12	.09	.11
	.30	-.15	.08	.10	-.00	-.20	.09	.02	.29	.07
	.15	.14	.25	.00	-.14	-.00	-.04	.10	-.10	-.03
	.01	.02	.06	1.00						

Form C - DS Variables

FACTOR ANALYSIS.....DEPT

NO. OF CASES 136
NO. OF VARIABLES 73

MEANS

.11	.11	.24	.25	.13	.16	.09	.27	.28	.31
.35	.11	.15	.35	.23	.23	.22	.21	.31	.37
.31	.25	.31	.35	.16	.24	.21	.25	.19	.28
.70	.15	.15	.16	.30	.22	.13	.09	.32	.31
.10	.13	.22	.43	.37	.28	.39	.11	.25	.39
.28	.25	.25	.30	.42	.45	.45	.35	.44	.38
.24	.34	.31	.26	.34	.36	.41	.29	.24	.26
.25	.31	.34							

STANDARD DEVIATIONS

.17	.15	.23	.23	.17	.20	.15	.23	.26	.25
.25	.16	.20	.25	.23	.24	.22	.22	.26	.26
.25	.24	.26	.25	.22	.23	.21	.26	.20	.25
.25	.13	.20	.23	.27	.22	.20	.12	.25	.22
.14	.19	.14	.25	.28	.24	.24	.15	.23	.27
.25	.25	.23	.26	.27	.27	.26	.25	.27	.24
.24	.27	.24	.25	.24	.26	.26	.24	.24	.27
.25	.25	.43							

CORRELATION COEFFICIENTS

ROW 1

1.00	.41	.71	.48	.52	.42	.40	.44	.40	.31
.48	.50	.34	.43	.44	.52	.47	.39	.39	.49
.28	.40	.27	.45	.39	.34	.52	.40	.44	.51
.37	.41	.37	.41	.47	.57	.75	.40	.59	.48
.47	.39	.28	.34	.38	.34	.42	.36	.37	.43
.47	.44	.42	.27	.49	.39	.32	.34	.27	.45
.51	.32	.46	.37	.41	.45	.30	.38	.44	.45
.35	.47	.14							

ROW 2

.41	1.00	.39	.19	.71	.71	.72	.48	.28	.52
.43	.49	.15	.39	.25	.20	.21	.48	.16	.31
.11	.23	.22	.29	.13	.28	.30	.39	.28	.23
.39	.20	.15	.17	.50	.37	.48	.75	.34	.27
.62	.50	.57	.32	.34	.34	.36	.39	.48	.39
.25	.31	.35	.44	.35	.32	.28	.33	.34	.37
.70	.41	.39	.43	.35	.28	.37	.24	.18	.35
.43	.37	-.10							

ROW 3

.71	.39	1.00	.60	.43	.37	.42	.58	.60	.45
.62	.44	.41	.65	.64	.64	.58	.48	.51	.61
.40	.54	.33	.51	.57	.42	.49	.46	.46	.63
.44	.44	.49	.36	.45	.53	.68	.41	.79	.57
.41	.36	.43	.48	.49	.47	.55	.30	.36	.60
.64	.52	.50	.33	.56	.49	.38	.41	.34	.53
.59	.34	.44	.45	.42	.60	.45	.47	.54	.42
.49	.50	.21							

ROW 4

.48	.19	.60	1.00	.34	.32	.31	.54	.51	.51
.49	.32	.32	.57	.46	.62	.46	.36	.57	.53
.22	.30	.33	.46	.59	.43	.45	.44	.49	.60

	.51	.25	.40	.35	.46	.26	.41	.14	.46	.70
	.18	.24	.16	.47	.45	.41	.50	.17	.23	.52
	.49	.57	.41	.19	.57	.42	.28	.31	.36	.35
	.45	.32	.37	.32	.46	.55	.46	.30	.43	.34
	.41	.30	.24							
ROW 5										
	.52	.71	.43	.34	1.07	.67	.76	.49	.34	.49
	.50	.56	.34	.51	.28	.32	.24	.47	.36	.34
	.15	.41	.26	.33	.27	.25	.28	.48	.26	.28
	.47	.27	.15	.16	.50	.34	.49	.65	.37	.43
	.74	.60	.58	.35	.42	.43	.47	.47	.39	.48
	.79	.29	.31	.37	.44	.35	.22	.32	.29	.33
	.77	.47	.31	.52	.29	.28	.39	.25	.19	.32
	.52	.34	-.11							
ROW 6										
	.42	.71	.37	.32	.67	1.00	.72	.51	.25	.56
	.44	.41	.15	.41	.27	.25	.12	.39	.20	.27
	.21	.23	.20	.26	.21	.34	.23	.42	.28	.17
	.35	.21	.00	.28	.57	.30	.51	.59	.37	.35
	.59	.74	.59	.34	.36	.45	.43	.36	.35	.43
	.78	.35	.34	.45	.41	.30	.32	.33	.33	.35
	.79	.42	.40	.44	.31	.25	.37	.36	.19	.43
	.47	.32	-.13							
ROW 7										
	.40	.72	.42	.31	.75	.72	1.00	.50	.29	.49
	.41	.61	.23	.46	.31	.21	.11	.45	.21	.28
	.11	.26	.16	.31	.17	.23	.22	.43	.30	.23
	.45	.23	.07	.27	.53	.25	.48	.71	.39	.41
	.62	.63	.77	.32	.35	.42	.42	.51	.40	.43
	.74	.26	.26	.40	.39	.28	.26	.31	.26	.29
	.76	.35	.37	.48	.27	.30	.39	.25	.17	.35
	.48	.29	-.08							
ROW 8										
	.44	.48	.58	.54	.49	.51	.50	1.00	.58	.58
	.69	.42	.45	.64	.59	.51	.52	.50	.56	.66
	.57	.59	.55	.51	.52	.53	.57	.38	.47	.51
	.63	.50	.39	.33	.52	.44	.51	.40	.53	.63
	.40	.40	.39	.68	.50	.56	.65	.40	.55	.63
	.58	.52	.57	.42	.61	.61	.60	.56	.59	.55
	.54	.54	.61	.45	.50	.55	.64	.56	.49	.45
	.61	.49	.06							
ROW 9										
	.40	.28	.60	.51	.34	.25	.29	.58	1.00	.52
	.66	.35	.39	.65	.61	.58	.54	.50	.59	.63
	.44	.55	.42	.52	.54	.45	.58	.37	.54	.64
	.61	.36	.45	.30	.42	.48	.44	.26	.58	.60
	.78	.22	.24	.54	.82	.51	.59	.33	.50	.65
	.67	.52	.52	.37	.66	.58	.50	.52	.47	.47
	.55	.41	.52	.39	.57	.63	.67	.48	.51	.35
	.50	.54	.19							
ROW 10										
	.31	.52	.45	.51	.49	.56	.49	.58	.52	1.00
	.61	.41	.29	.71	.46	.49	.42	.53	.46	.49
	.78	.30	.28	.46	.39	.47	.43	.47	.41	.39
	.56	.31	.23	.37	.82	.46	.38	.39	.47	.51
	.39	.40	.37	.47	.52	.75	.58	.35	.37	.71

	.47	.44	.50	.46	.57	.48	.38	.40	.38	.44
	.43	.47	.42	.45	.54	.45	.52	.47	.31	.41
	.73	.56	.04							
ROW 11										
	.48	.43	.62	.49	.50	.44	.41	.69	.66	.61
	1.00	.45	.54	.73	.58	.70	.58	.51	.63	.63
	.60	.67	.54	.59	.54	.53	.50	.44	.53	.60
	.70	.45	.43	.46	.57	.52	.53	.39	.56	.66
	.40	.34	.38	.58	.64	.58	.86	.36	.59	.76
	.67	.63	.66	.46	.75	.65	.58	.60	.60	.65
	.62	.55	.54	.45	.55	.65	.69	.58	.50	.49
	.57	.61	.15							
ROW 12										
	.50	.49	.44	.32	.56	.41	.61	.42	.35	.41
	.45	1.00	.39	.49	.45	.35	.34	.56	.36	.50
	.20	.44	.22	.56	.24	.43	.35	.32	.35	.42
	.52	.35	.25	.27	.46	.48	.49	.44	.46	.34
	.51	.39	.51	.36	.34	.33	.42	.75	.37	.46
	.46	.33	.34	.37	.51	.46	.35	.41	.36	.45
	.39	.42	.40	.35	.37	.41	.40	.34	.34	.37
	.41	.46	.12							
ROW 13										
	.34	.15	.41	.32	.34	.15	.23	.45	.39	.29
	.54	.39	1.00	.46	.46	.45	.62	.37	.58	.49
	.56	.58	.56	.50	.37	.53	.42	.27	.51	.44
	.46	.52	.45	.37	.35	.35	.28	.19	.35	.40
	.22	.17	.18	.37	.40	.33	.47	.35	.67	.42
	.37	.37	.51	.28	.46	.40	.40	.35	.45	.33
	.37	.42	.29	.24	.33	.49	.41	.42	.43	.30
	.35	.34	.16							
ROW 14										
	.49	.39	.65	.57	.51	.41	.46	.64	.65	.71
	.73	.49	.46	1.00	.71	.70	.57	.55	.69	.73
	.43	.56	.43	.64	.50	.55	.56	.64	.54	.62
	.64	.46	.38	.44	.71	.58	.49	.39	.59	.63
	.42	.34	.37	.53	.58	.69	.71	.39	.45	.87
	.70	.57	.65	.45	.78	.66	.52	.52	.53	.59
	.58	.52	.53	.61	.59	.65	.65	.60	.47	.52
	.75	.62	.10							
ROW 15										
	.44	.25	.64	.46	.28	.27	.31	.59	.61	.46
	.52	.45	.46	.71	1.00	.65	.62	.50	.62	.67
	.52	.59	.44	.66	.57	.50	.60	.38	.66	.62
	.57	.47	.55	.49	.41	.59	.49	.34	.58	.52
	.35	.29	.33	.52	.45	.47	.58	.42	.43	.64
	.27	.57	.61	.36	.61	.56	.54	.50	.47	.59
	.64	.38	.55	.31	.55	.60	.62	.64	.60	.54
	.50	.55	.26							
ROW 16										
	.52	.23	.64	.62	.32	.25	.21	.51	.58	.49
	.70	.35	.45	.70	.65	1.00	.68	.50	.76	.66
	.51	.51	.45	.61	.63	.53	.61	.42	.55	.68
	.62	.46	.51	.42	.42	.49	.49	.20	.48	.59
	.18	.27	.16	.46	.46	.54	.66	.25	.32	.66
	.66	.78	.66	.37	.73	.56	.46	.43	.46	.63
	.67	.46	.58	.36	.53	.66	.52	.49	.50	.44

	.55	.47	.18						
POW 17									
	.47	.21	.58	.46	.24	.12	.11	.52	.54
	.58	.34	.62	.57	.62	.68	1.00	.49	.75
	.64	.55	.65	.59	.55	.51	.69	.28	.60
	.53	.64	.63	.37	.36	.52	.32	.11	.47
	.15	.17	.06	.49	.47	.38	.50	.23	.48
	.60	.57	.71	.27	.61	.53	.48	.42	.48
	.50	.46	.50	.30	.45	.53	.56	.55	.56
	.37	.45	.30						.39
POW 18									
	.30	.42	.48	.30	.47	.39	.45	.50	.50
	.51	.56	.37	.55	.50	.50	.49	1.00	.54
	.36	.41	.42	.52	.31	.57	.52	.44	.52
	.52	.34	.32	.31	.54	.45	.45	.48	.46
	.50	.42	.41	.32	.40	.56	.45	.61	.40
	.46	.44	.43	.00	.57	.55	.40	.41	.47
	.37	.60	.48	.48	.49	.44	.50	.35	.42
	.61	.43	.09						.35
POW 19									
	.39	.16	.51	.57	.35	.20	.21	.56	.59
	.63	.36	.58	.69	.62	.76	.75	.54	1.00
	.63	.61	.59	.68	.46	.50	.64	.49	.62
	.65	.44	.50	.40	.50	.43	.31	.13	.42
	.19	.12	.11	.49	.50	.48	.63	.34	.46
	.59	.65	.66	.39	.78	.64	.55	.47	.54
	.49	.49	.50	.44	.49	.61	.63	.46	.46
	.54	.40	.12						.42
POW 20									
	.49	.31	.61	.53	.34	.27	.28	.66	.63
	.52	.50	.49	.73	.67	.66	.62	.61	.71
	.50	.73	.53	.75	.54	.63	.64	.53	.57
	.59	.49	.54	.39	.52	.58	.44	.24	.53
	.30	.20	.25	.54	.52	.45	.64	.41	.51
	.64	.57	.63	.43	.73	.85	.67	.65	.61
	.50	.57	.58	.46	.61	.76	.65	.52	.54
	.53	.54	.13						.49
POW 21									
	.20	.11	.40	.28	.15	.21	.11	.57	.44
	.58	.20	.56	.43	.52	.51	.64	.36	.63
	1.00	.61	.71	.57	.50	.53	.54	.29	.57
	.52	.53	.52	.53	.28	.39	.36	.14	.38
	.17	.21	.15	.42	.34	.28	.48	.31	.56
	.50	.53	.61	.28	.55	.50	.75	.54	.59
	.50	.50	.59	.30	.45	.47	.56	.65	.57
	.27	.41	.14						.52
POW 22									
	.40	.28	.54	.30	.41	.23	.26	.59	.55
	.66	.44	.58	.56	.59	.51	.55	.41	.61
	.61	1.00	.56	.65	.41	.51	.46	.39	.50
	.51	.49	.50	.41	.42	.55	.40	.25	.43
	.30	.22	.22	.51	.51	.39	.64	.37	.52
	.54	.49	.54	.36	.54	.64	.59	.76	.54
	.54	.47	.46	.36	.47	.61	.57	.52	.54
	.43	.47	.18						.46

ROW 23									
	.27	.22	.33	.33	.26	.20	.16	.55	.42
	.54	.28	.56	.43	.44	.45	.65	.42	.59
	.71	.56	1.00	.57	.52	.58	.49	.31	.47
	.51	.57	.50	.31	.31	.34	.31	.20	.28
	.27	.24	.19	.44	.31	.30	.49	.28	.52
	.39	.45	.56	.26	.52	.48	.57	.53	.75
	.43	.48	.40	.33	.38	.44	.51	.55	.46
	.31	.35	.20						.36
ROW 24									
	.45	.29	.51	.46	.33	.26	.31	.51	.52
	.59	.56	.50	.64	.66	.61	.59	.52	.68
	.57	.65	.57	1.00	.44	.59	.55	.45	.57
	.60	.48	.46	.43	.51	.55	.43	.22	.43
	.22	.21	.22	.53	.48	.40	.58	.40	.51
	.60	.60	.66	.41	.71	.68	.61	.62	.61
	.56	.52	.51	.40	.56	.66	.61	.55	.49
	.44	.54	.20						.52
ROW 25									
	.39	.18	.57	.59	.20	.21	.17	.52	.54
	.54	.24	.37	.52	.57	.68	.55	.31	.46
	.50	.41	.52	.44	1.00	.62	.49	.23	.55
	.47	.55	.60	.33	.22	.34	.38	.18	.43
	.20	.19	.18	.43	.34	.35	.46	.19	.32
	.57	.59	.43	.17	.51	.43	.40	.40	.37
	.68	.39	.48	.20	.48	.53	.50	.52	.60
	.33	.41	.24						.42
ROW 26									
	.34	.28	.42	.43	.25	.34	.23	.53	.45
	.53	.43	.53	.55	.50	.53	.51	.57	.50
	.53	.51	.58	.50	.62	1.00	.54	.31	.58
	.57	.50	.58	.43	.46	.44	.38	.23	.41
	.30	.34	.24	.45	.33	.48	.47	.45	.50
	.42	.44	.52	.52	.56	.55	.49	.48	.54
	.46	.73	.48	.30	.58	.50	.55	.55	.58
	.49	.47	.02						.50
ROW 27									
	.52	.30	.49	.45	.28	.23	.22	.57	.58
	.50	.35	.42	.56	.67	.61	.69	.52	.64
	.54	.48	.49	.55	.49	.54	1.00	.34	.62
	.62	.58	.54	.41	.37	.57	.45	.19	.47
	.24	.18	.13	.50	.44	.39	.47	.34	.41
	.62	.53	.53	.36	.67	.53	.51	.47	.44
	.56	.50	.73	.35	.60	.54	.57	.53	.54
	.35	.46	.11						.38
ROW 28									
	.40	.37	.46	.44	.48	.42	.43	.38	.37
	.44	.32	.27	.64	.38	.42	.28	.44	.49
	.29	.39	.31	.45	.23	.31	.34	1.00	.42
	.40	.18	.12	.34	.56	.35	.37	.40	.35
	.33	.32	.37	.31	.41	.38	.52	.33	.33
	.34	.42	.42	.42	.51	.52	.41	.41	.46
	.42	.47	.41	.85	.46	.53	.45	.39	.20
	.55	.35	.09						.50
ROW 29									
	.44	.22	.46	.49	.26	.28	.30	.47	.54
									.41

	.53	.35	.51	.54	.66	.55	.60	.52	.62	.57
	.57	.52	.47	.57	.55	.58	.62	.42	1.00	.55
	.69	.51	.57	.62	.37	.45	.36	.27	.41	.53
	.23	.25	.19	.39	.49	.38	.49	.37	.51	.52
	.62	.59	.52	.40	.55	.47	.47	.43	.42	.48
	.54	.44	.60	.33	.68	.52	.65	.56	.59	.58
	.37	.43	.12							
POW 30										
	.51	.23	.63	.60	.28	.17	.23	.51	.64	.39
	.60	.42	.44	.62	.62	.68	.57	.45	.66	.78
	.43	.74	.44	.67	.52	.48	.56	.47	.55	1.00
	.53	.42	.60	.37	.42	.50	.46	.23	.48	.53
	.21	.17	.17	.43	.52	.38	.61	.32	.44	.60
	.60	.52	.55	.33	.65	.64	.51	.56	.48	.53
	.54	.43	.50	.40	.49	.87	.58	.37	.49	.37
	.45	.44	.30							
POW 31										
	.37	.39	.44	.51	.47	.35	.45	.63	.61	.56
	.70	.52	.46	.64	.57	.52	.53	.58	.65	.59
	.52	.51	.51	.60	.47	.57	.62	.40	.69	.53
1.00	.52	.49	.46	.46	.54	.47	.36	.31	.44	.55
.32	.27	.24	.49	.49	.56	.43	.62	.44	.49	.63
.57	.53	.53	.43	.70	.52	.50	.50	.52	.51	.51
.52	.56	.62	.36	.67	.53	.82	.54	.51	.46	
.48	.51	.13								
POW 32										
	.41	.20	.44	.25	.27	.21	.23	.50	.36	.31
	.45	.35	.52	.46	.47	.46	.64	.34	.44	.49
	.53	.49	.57	.48	.55	.56	.58	.16	.51	.40
	.52	1.00	.59	.36	.23	.48	.32	.14	.42	.29
.25	.22	.16	.46	.33	.33	.43	.26	.42	.44	
.40	.46	.54	.25	.48	.45	.44	.43	.40	.46	
.48	.44	.51	.19	.37	.45	.50	.69	.54	.36	
.25	.40	.23								
POW 33										
	.37	.15	.49	.40	.15	.09	.07	.39	.45	.23
	.43	.25	.45	.32	.55	.51	.63	.32	.50	.54
	.52	.52	.52	.46	.66	.58	.54	.12	.57	.60
	.48	.59	1.00	.40	.15	.46	.33	.08	.36	.38
	.14	.11	.03	.29	.33	.24	.37	.21	.35	.36
	.48	.42	.43	.19	.39	.37	.37	.35	.34	.39
	.44	.36	.39	.11	.44	.53	.46	.44	.73	.35
	.12	.40	.22							
POW 34										
	.41	.17	.36	.35	.16	.28	.27	.33	.30	.37
	.46	.27	.37	.44	.49	.42	.37	.31	.40	.39
	.53	.41	.31	.43	.33	.43	.41	.34	.62	.37
	.46	.36	.40	1.00	.37	.39	.33	.13	.31	.37
	.14	.22	.20	.26	.31	.32	.43	.27	.42	.45
	.44	.39	.44	.34	.42	.30	.48	.38	.35	.46
	.44	.33	.46	.26	.52	.42	.48	.52	.53	.70
	.32	.36	.13							
POW 35										
	.40	.53	.46	.46	.56	.57	.53	.58	.42	.80
	.57	.46	.35	.71	.41	.48	.36	.58	.50	.52
	.28	.42	.31	.51	.22	.46	.39	.58	.37	.40

	.54	.22	.15	.37	1.07	.48	.48	.40	.43	.44
	.40	.39	.34	.40	.44	.65	.57	.33	.39	.63
	.41	.35	.45	.55	.52	.48	.37	.38	.43	.45
	.70	.53	.37	.55	.45	.43	.52	.41	.29	.41
	.91	.49	-.10							
ROW 36										
	.57	.37	.53	.26	.34	.30	.25	.44	.48	.45
	.62	.48	.35	.58	.59	.49	.52	.45	.43	.58
	.30	.55	.34	.55	.34	.44	.57	.35	.45	.50
	.47	.40	.46	.39	.48	1.00	.56	.37	.53	.36
	.34	.23	.24	.41	.41	.44	.52	.37	.36	.51
	.57	.42	.50	.37	.49	.50	.40	.41	.37	.53
	.42	.43	.45	.36	.55	.52	.49	.53	.51	.42
	.44	.60	.13							
ROW 37										
	.75	.42	.68	.41	.49	.51	.48	.51	.44	.38
	.53	.47	.28	.49	.49	.49	.32	.45	.31	.44
	.35	.40	.31	.43	.38	.38	.45	.37	.36	.46
	.36	.32	.33	.39	.40	.56	1.00	.52	.67	.55
	.52	.52	.49	.36	.40	.46	.53	.38	.44	.46
	.55	.46	.41	.39	.48	.39	.39	.40	.35	.47
	.52	.32	.40	.38	.38	.47	.37	.44	.45	.41
	.46	.54	.04							
ROW 38										
	.40	.75	.41	.14	.65	.59	.71	.40	.26	.39
	.39	.44	.19	.39	.34	.20	.11	.48	.13	.24
	.14	.25	.20	.22	.18	.23	.19	.40	.27	.23
	.31	.14	.08	.13	.40	.37	.52	1.00	.38	.29
	.22	.69	.21	.22	.31	.47	.36	.57	.37	.37
	.30	.30	.29	.45	.31	.25	.23	.25	.28	.36
	.22	.35	.34	.47	.25	.24	.30	.24	.19	.32
	.48	.38	-.11							
ROW 39										
	.59	.34	.79	.46	.37	.37	.39	.53	.58	.47
	.56	.45	.35	.59	.58	.48	.47	.46	.42	.53
	.38	.43	.28	.43	.43	.41	.47	.35	.41	.48
	.44	.42	.36	.31	.43	.53	.67	.38	1.00	.69
	.46	.43	.45	.60	.59	.55	.58	.39	.42	.63
	.67	.49	.51	.40	.67	.59	.46	.47	.41	.52
	.55	.43	.50	.41	.51	.58	.52	.53	.56	.42
	.47	.59	.19							
ROW 40										
	.48	.27	.57	.77	.43	.35	.41	.63	.60	.51
	.66	.34	.40	.63	.52	.59	.40	.37	.55	.59
	.39	.44	.34	.43	.53	.43	.43	.40	.53	.53
	.55	.29	.38	.37	.44	.36	.55	.29	.68	1.00
	.37	.36	.33	.58	.61	.55	.62	.30	.46	.65
	.62	.56	.49	.33	.64	.60	.47	.47	.46	.45
	.49	.42	.48	.38	.56	.61	.60	.43	.50	.44
	.50	.47	.13							
ROW 41										
	.42	.62	.41	.18	.74	.59	.68	.40	.28	.39
	.40	.51	.22	.42	.35	.18	.15	.50	.18	.32
	.17	.32	.27	.22	.20	.30	.24	.33	.23	.21
	.32	.26	.14	.14	.40	.34	.52	.82	.46	.37
	1.00	.72	.81	.31	.32	.48	.39	.62	.31	.39

	.32	.21	.23	.43	.33	.31	.25	.30	.30	.35
	.21	.37	.29	.39	.24	.19	.31	.32	.29	.33
	.49	.34	-.12							
POW 42										
	.39	.50	.36	.24	.60	.74	.63	.40	.22	.40
	.34	.39	.17	.34	.29	.20	.10	.42	.18	.20
	.21	.22	.24	.21	.19	.34	.18	.32	.25	.17
	.27	.22	.11	.22	.32	.29	.52	.69	.43	.35
	.72	1.00	.73	.31	.28	.52	.41	.46	.21	.33
	.24	.29	.31	.39	.34	.20	.27	.26	.27	.29
	.17	.44	.31	.38	.24	.16	.25	.32	.18	.33
	.47	.25	-.19							
POW 43										
	.38	.57	.43	.18	.58	.59	.77	.39	.24	.37
	.32	.51	.18	.37	.33	.16	.06	.41	.11	.25
	.15	.22	.19	.22	.18	.24	.13	.37	.19	.17
	.24	.16	.03	.20	.34	.24	.49	.81	.45	.33
	.81	.73	1.00	.27	.29	.45	.39	.58	.32	.39
	.31	.22	.27	.36	.34	.25	.26	.25	.29	.32
	.21	.33	.26	.45	.23	.21	.25	.32	.20	.37
	.44	.28	-.16							
POW 44										
	.34	.30	.48	.47	.35	.34	.32	.68	.54	.47
	.58	.35	.37	.53	.52	.46	.49	.32	.49	.54
	.42	.51	.44	.53	.43	.45	.50	.31	.39	.43
	.49	.45	.29	.26	.43	.41	.36	.22	.60	.58
	.31	.31	.27	1.00	.59	.47	.68	.32	.45	.62
	.59	.53	.59	.32	.62	.69	.61	.62	.58	.59
	.52	.56	.56	.38	.63	.53	.62	.62	.50	.48
	.43	.51	.12							
POW 45										
	.38	.34	.49	.40	.42	.36	.35	.50	.82	.52
	.64	.34	.40	.58	.45	.46	.40	.46	.50	.53
	.34	.51	.31	.48	.34	.38	.44	.41	.49	.53
	.56	.33	.33	.31	.44	.41	.40	.31	.59	.61
	.32	.28	.29	.59	1.00	.56	.65	.35	.56	.69
	.55	.52	.50	.50	.66	.62	.48	.57	.50	.45
	.48	.47	.51	.49	.59	.63	.67	.45	.47	.45
	.47	.55	.09							
POW 46										
	.34	.34	.47	.41	.43	.45	.42	.56	.51	.75
	.58	.33	.33	.69	.47	.54	.38	.56	.48	.45
	.28	.39	.30	.40	.35	.48	.39	.38	.38	.38
	.43	.33	.24	.32	.65	.44	.46	.47	.55	.55
	.48	.52	.45	.47	.56	1.00	.65	.47	.32	.70
	.52	.51	.49	.56	.57	.54	.36	.39	.38	.50
	.35	.53	.41	.49	.48	.47	.49	.48	.44	.44
	.77	.54	-.13							
POW 47										
	.42	.36	.55	.50	.47	.43	.42	.65	.59	.59
	.86	.42	.47	.71	.58	.66	.50	.45	.63	.64
	.48	.64	.49	.58	.46	.47	.47	.52	.49	.61
	.82	.43	.37	.43	.57	.52	.53	.36	.58	.68
	.39	.41	.39	.68	.65	.65	1.00	.36	.50	.75
	.64	.67	.69	.43	.77	.70	.64	.67	.64	.63
	.61	.58	.56	.51	.61	.69	.71	.61	.50	.54

	.61	.57	.11							
POW 48										
	.36	.39	.30	.17	.47	.36	.51	.40	.33	.35
	.36	.75	.35	.39	.42	.25	.23	.61	.34	.41
	.31	.37	.20	.40	.19	.45	.34	.33	.37	.32
	.44	.26	.21	.27	.33	.37	.38	.57	.39	.30
	.62	.46	.53	.32	.35	.47	.36	1.00	.37	.46
	.43	.29	.29	.50	.45	.44	.39	.39	.33	.49
	.77	.52	.43	.41	.39	.33	.43	.34	.41	.43
	.49	.42	.02							
POW 49										
	.37	.42	.36	.23	.39	.35	.40	.55	.50	.37
	.59	.37	.67	.45	.43	.32	.48	.40	.46	.51
	.55	.52	.52	.51	.32	.50	.41	.33	.51	.44
	.49	.42	.35	.42	.39	.36	.44	.37	.42	.46
	.71	.21	.32	.45	.56	.32	.50	.37	1.00	.51
	.45	.45	.64	.45	.56	.55	.60	.55	.59	.49
	.44	.51	.50	.40	.45	.57	.57	.48	.44	.49
	.35	.43	.09							
POW 50										
	.43	.39	.60	.52	.49	.43	.43	.63	.65	.71
	.76	.46	.42	.87	.64	.66	.53	.55	.64	.69
	.44	.54	.39	.59	.49	.54	.52	.60	.52	.60
	.63	.44	.36	.45	.63	.51	.46	.37	.63	.66
	.39	.33	.39	.62	.69	.70	.75	.46	.51	1.00
	.71	.62	.64	.53	.80	.75	.60	.58	.55	.67
	.60	.62	.58	.65	.64	.69	.73	.63	.52	.62
	.71	.62	.06							
POW 51										
	.47	.25	.64	.49	.29	.28	.34	.58	.67	.47
	.62	.45	.37	.72	.87	.66	.60	.46	.59	.64
	.57	.54	.38	.60	.57	.46	.62	.34	.62	.60
	.57	.45	.43	.44	.41	.57	.55	.30	.67	.62
	.37	.24	.31	.59	.55	.52	.64	.43	.45	.71
	1.00	.63	.61	.33	.69	.62	.55	.52	.44	.57
	.56	.41	.61	.33	.56	.65	.69	.64	.63	.55
	.50	.62	.20							
POW 52										
	.44	.31	.52	.50	.29	.35	.26	.50	.52	.44
	.63	.23	.32	.57	.57	.79	.57	.44	.65	.57
	.53	.45	.45	.60	.59	.44	.53	.42	.59	.58
	.53	.46	.42	.39	.35	.42	.46	.30	.49	.56
	.71	.29	.22	.53	.52	.51	.67	.29	.46	.62
	.63	1.00	.75	.43	.73	.63	.59	.56	.56	.68
	.71	.51	.72	.44	.54	.65	.58	.56	.48	.52
	.41	.49	.14							
POW 53										
	.42	.35	.50	.41	.31	.34	.26	.57	.52	.50
	.66	.34	.51	.65	.61	.66	.71	.43	.66	.63
	.61	.54	.56	.66	.49	.52	.53	.42	.58	.55
	.53	.54	.43	.44	.45	.50	.41	.29	.51	.49
	.23	.31	.27	.59	.50	.49	.69	.29	.64	.64
	.61	.75	1.00	.40	.78	.66	.67	.55	.65	.64
	.58	.53	.62	.41	.53	.63	.63	.63	.49	.58
	.51	.54	.14							

ROW 54	.27 .46 .28 .43 .43 .33 .32 .55	.44 .37 .32 .25 .30 .43 .33 .41	.33 .28 .26 .19 .36 .40 .48 -.18	.19 .45 .41 .34 .32 1.00 .50	.37 .35 .17 .55 .50 .53 .46	.45 .37 .52 .37 .56 .58 .40	.40 .27 .36 .39 .43 .42 .48 .31	.40 .80 .42 .45 .50 .46 .31	.37 .38 .40 .40 .45 .47 .36	.46 .49 .33 .33 .53 .55 .41
ROW 55	.43 .75 .56 .70 .33 .59 .62 .60	.35 .51 .54 .48 .34 .73 .64 .57	.56 .46 .52 .35 .34 .78 .65 .12	.57 .78 .71 .42 .62 .53 .54	.44 .61 .51 .52 .65 1.00 .62	.41 .73 .56 .49 .57 .77 .69	.39 .61 .60 .48 .77 .65 .76	.61 .57 .51 .31 .45 .62 .60	.66 .78 .55 .60 .56 .68 .51	.57 .73 .65 .64 .90 .66 .53
ROW 56	.39 .67 .60 .52 .31 .62 .52 .51	.32 .46 .48 .45 .20 .53 .60 .60	.49 .40 .48 .37 .25 .65 .60 .09	.42 .68 .68 .30 .69 .58 .53	.35 .56 .43 .42 .62 .77 .65	.30 .56 .55 .50 .54 1.00 .74	.28 .53 .53 .39 .70 .74 .70	.61 .55 .52 .25 .44 .72 .58	.58 .64 .47 .59 .55 .66 .53	.48 .85 .84 .60 .75 .73 .54
ROW 57	.32 .50 .75 .50 .25 .55 .55 .35	.28 .35 .59 .44 .27 .59 .58 .46	.38 .40 .57 .37 .26 .67 .70 .07	.29 .52 .61 .48 .61 .42 .43	.22 .54 .40 .37 .42 .65 .61	.32 .46 .49 .40 .36 .74 .57	.26 .48 .51 .39 .64 1.00 .63	.60 .40 .41 .23 .39 .75 .67	.50 .55 .47 .46 .60 .75 .53	.38 .67 .51 .47 .60 .69 .61
ROW 58	.34 .60 .54 .50 .30 .57 .61 .36	.33 .41 .76 .43 .26 .55 .61 .45	.41 .35 .53 .35 .25 .55 .67 .12	.31 .52 .62 .38 .62 .46 .46	.32 .57 .40 .39 .57 .62 .61	.33 .43 .48 .41 .39 .72 .62	.31 .42 .47 .40 .67 .75 .62	.56 .41 .41 .25 .39 1.00 .56	.52 .47 .43 .47 .55 .68 .48	.40 .65 .56 .47 .58 .67 .50
ROW 59	.27 .60 .59 .52 .30 .44 .50 .38	.34 .36 .54 .40 .27 .56 .58 .43	.34 .45 .75 .34 .29 .65 .54 .09	.36 .53 .61 .35 .58 .47 .49	.29 .47 .37 .43 .50 .68 .58	.33 .46 .54 .37 .38 .66 .56	.26 .48 .44 .35 .64 .75 .58	.59 .47 .46 .28 .33 .68 .58	.47 .54 .42 .41 .59 1.00 .44	.39 .61 .48 .46 .55 .63 .52
ROW 60	.45	.37	.53	.36	.33	.35	.29	.55	.47	.44

	.65	.45	.38	.59	.58	.63	.52	.57	.53	.67
	.60	.63	.54	.69	.49	.60	.54	.45	.48	.53
	.51	.46	.39	.46	.45	.53	.47	.36	.52	.45
	.35	.29	.32	.59	.45	.50	.63	.49	.49	.67
	.57	.68	.64	.55	.60	.73	.69	.67	.63	1.00
	.65	.61	.66	.49	.61	.59	.57	.64	.60	.60
	.45	.56	.11							
ROW 61										
	.51	.30	.59	.45	.27	.38	.26	.54	.55	.43
	.63	.39	.32	.58	.64	.67	.50	.33	.49	.58
	.50	.54	.43	.56	.68	.46	.56	.42	.54	.54
	.52	.49	.44	.44	.38	.48	.52	.22	.55	.49
	.71	.17	.21	.52	.49	.36	.61	.27	.44	.60
	.66	.71	.58	.32	.62	.58	.55	.61	.50	.65
	1.00	.46	.64	.36	.57	.62	.57	.62	.55	.52
	.39	.54	.30							
POW 62										
	.32	.41	.34	.32	.42	.43	.35	.54	.41	.49
	.65	.48	.42	.52	.38	.46	.46	.60	.49	.57
	.50	.47	.48	.52	.30	.73	.50	.47	.44	.43
	.55	.44	.36	.33	.53	.43	.38	.35	.43	.42
	.37	.44	.33	.56	.47	.53	.58	.52	.51	.60
	.41	.51	.53	.63	.64	.66	.58	.61	.58	.61
	.46	1.00	.63	.60	.63	.52	.60	.54	.48	.54
	.54	.47	.15							
POW 63										
	.46	.39	.44	.37	.31	.40	.37	.61	.52	.42
	.54	.40	.29	.53	.55	.58	.50	.48	.50	.58
	.50	.46	.40	.51	.48	.48	.73	.41	.60	.50
	.62	.51	.39	.46	.37	.45	.46	.34	.50	.48
	.70	.31	.26	.58	.51	.41	.56	.43	.50	.58
	.61	.72	.60	.42	.65	.60	.70	.67	.54	.65
	.64	.63	1.00	.49	.68	.57	.66	.62	.57	.59
	.37	.47	.58							
POW 64										
	.32	.49	.45	.32	.52	.44	.48	.45	.39	.45
	.45	.35	.24	.61	.31	.36	.30	.49	.44	.46
	.30	.36	.33	.40	.27	.30	.35	.85	.33	.40
	.36	.19	.11	.26	.55	.36	.38	.47	.41	.38
	.39	.39	.45	.38	.40	.49	.51	.41	.40	.65
	.32	.44	.41	.60	.54	.53	.43	.46	.49	.49
	.30	.60	.49	1.00	.50	.50	.48	.40	.26	.51
	.59	.38	.20							
POW 65										
	.41	.35	.42	.46	.29	.31	.27	.50	.57	.54
	.55	.37	.33	.59	.55	.50	.45	.49	.49	.61
	.45	.47	.28	.56	.48	.58	.60	.46	.68	.49
	.60	.37	.44	.52	.45	.55	.38	.25	.51	.56
	.24	.24	.20	.63	.59	.48	.61	.39	.45	.64
	.56	.54	.53	.46	.62	.65	.61	.61	.58	.61
	.57	.63	.68	.50	1.00	.63	.65	.64	.65	.65
	.46	.63	.59							
POW 66										
	.45	.23	.60	.55	.23	.25	.30	.55	.63	.45
	.65	.41	.49	.65	.60	.66	.53	.44	.61	.76
	.47	.61	.44	.66	.53	.50	.54	.53	.58	.87

	.53	.45	.53	.42	.43	.52	.47	.24	.58	.61
	.19	.18	.21	.53	.63	.47	.69	.33	.57	.69
	.65	.65	.63	.40	.69	.74	.57	.62	.56	.69
	.62	.52	.57	.50	.63	1.00	.66	.51	.52	.47
	.48	.56	.29							
POW 67										
	.30	.37	.45	.46	.33	.37	.39	.64	.67	.52
	.69	.40	.41	.65	.62	.52	.56	.50	.63	.65
	.56	.57	.51	.61	.50	.55	.57	.45	.65	.58
	.82	.50	.46	.48	.52	.49	.37	.30	.52	.60
	.31	.25	.25	.62	.67	.49	.71	.43	.57	.73
	.69	.58	.63	.48	.76	.70	.63	.62	.58	.57
	.57	.60	.66	.43	.65	.66	1.00	.65	.59	.62
	.54	.59	.15							
POW 68										
	.38	.24	.47	.30	.25	.36	.25	.56	.48	.47
	.52	.34	.42	.60	.64	.49	.55	.35	.46	.52
	.65	.52	.55	.55	.52	.55	.53	.39	.56	.37
	.54	.69	.44	.52	.41	.53	.44	.24	.53	.43
	.32	.32	.32	.62	.45	.48	.61	.34	.48	.63
	.64	.56	.63	.31	.60	.58	.67	.56	.58	.64
	.62	.54	.62	.40	.64	.51	.65	1.00	.66	.70
	.42	.64	.14							
POW 69										
	.44	.13	.54	.43	.10	.19	.17	.49	.51	.31
	.50	.34	.43	.47	.60	.50	.56	.42	.46	.54
	.57	.49	.46	.49	.60	.58	.54	.20	.59	.49
	.51	.54	.73	.53	.29	.51	.45	.19	.56	.50
	.29	.19	.20	.50	.47	.44	.50	.41	.44	.52
	.63	.48	.49	.36	.51	.53	.53	.48	.44	.60
	.50	.43	.57	.26	.60	.52	.59	.66	1.00	.65
	.34	.57	.25							
POW 70										
	.45	.25	.42	.34	.32	.43	.35	.45	.35	.41
	.49	.37	.30	.52	.54	.44	.39	.35	.42	.49
	.52	.46	.36	.52	.40	.50	.38	.50	.58	.37
	.46	.35	.35	.70	.41	.42	.41	.32	.42	.44
	.33	.33	.37	.48	.45	.44	.54	.43	.49	.62
	.55	.52	.52	.41	.53	.54	.61	.50	.52	.60
	.52	.54	.59	.51	.60	.47	.62	.70	.65	1.00
	.45	.43	.00							
POW 71										
	.36	.43	.49	.41	.52	.47	.48	.61	.50	.73
	.57	.41	.35	.75	.50	.55	.37	.61	.54	.53
	.27	.43	.31	.44	.33	.49	.35	.55	.37	.45
	.42	.25	.16	.32	.81	.44	.46	.48	.47	.50
	.49	.47	.44	.43	.47	.77	.61	.49	.35	.71
	.50	.41	.51	.55	.60	.51	.36	.36	.39	.45
	.32	.54	.37	.59	.46	.48	.54	.42	.34	.45
	1.00	.49	.14							
POW 72										
	.47	.37	.50	.30	.34	.32	.29	.48	.54	.56
	.61	.46	.34	.62	.55	.47	.45	.43	.42	.54
	.41	.47	.35	.54	.41	.47	.46	.35	.43	.44
	.51	.40	.40	.36	.49	.80	.54	.38	.59	.47
	.34	.25	.22	.51	.55	.54	.57	.42	.48	.62

.62	.49	.54	.41	.57	.60	.46	.45	.43	.56
.54	.47	.47	.38	.63	.56	.59	.64	.57	.49
.49	1.00	.10							

ROW 77

.14	-.10	.21	.24	-.11	-.13	-.08	.06	.19	-.04
.15	.12	.16	.10	.26	.18	.30	-.39	.12	.13
.14	.18	.20	.20	.24	-.02	.11	-.09	.18	.30
.13	.23	.28	.13	-.10	.13	.04	-.11	.19	.13
-.12	-.10	-.16	.12	.09	-.13	.11	-.02	.09	.06
.28	.14	.14	-.18	.12	.08	.07	.12	.09	.11
.30	-.15	.08	-.20	.09	.29	.15	.14	.25	.00
-.14	.10	1.00							

APPENDIX E

School Districts Submitting Data

School Districts Submitting Data

1. Cherry Creek District No. 5
Englewood, Colorado.
2. Kansas City Public Schools
Kansas City, Missouri.
3. Laguna Beach Unified School District
Laguna Beach, California.
4. Marin County Schools
Corte Madero, California.
5. Mesa Public Schools
Mesa, Arizona.
6. New Jersey Department of Education
Trenton, New Jersey.
7. Ontario-Montclair School District
Ontario, California.
8. Portland Public Schools
Portland, Oregon.
9. Prince William County Schools
Manassas, Virginia.
10. School District No. 2
New York, New York.
11. School District No. 48
Beaverton, Oregon.
12. Dade County Schools
Miami, Florida.
13. Leon County Schools
Tallahassee, Florida.
14. Sarasota County Schools
Sarasota, Florida.
15. Temple City Unified School District
Temple City, California.
16. Weber County School District
Ogden, Utah.
17. Wayne County Intermediate School District
Detroit, Michigan.

APPENDIX F

Correlation Coefficients of ATI Variables
with the DS Variable (V74) on Form A
and Form B

Correlation Coefficients of ATI Variables With the
DS Variable (V74) on Form A and Form B

Correlation With V74		Variable Number Form C		Var. No.	ATI Task Description
Form A	Form B	Time	Importance		
.10		14	50	38.	Interpret policies, directives, and regulations to staff and students.
-.11		2	38	4.	Prepare work requests (e.g.: maintenance and repair).
.11		27	63	53.	Identify and utilize community resource persons.
.11		12	48	33.	Distribute and collect instructional materials.
.12		36	72	68.	Confer with guidance counselors.
.12		34	70	64.	Pursue advanced degree program.
-.10	-.11	5	41	8.	Inventory and maintain records of supplies or materials.
.12		19	55	43.	Promote and interpret school program and policy in the community.
	.12	8	44	21.	Evaluate your own techniques and methods.
.13		20	56	45.	Confer with staff to determine policy and operational procedures.
	-.13	10	46	31.	Devise means of maintaining student discipline.
	.14	35	71	65.	Administer disciplinary action as appropriate.
.14		1	37	2.	Develop policies for use of facilities and equipment by non-school personnel and organizations.
	.14	17	53	41.	Prepare materials and inform community of new developments and trends in education.
.12	.15	31	67	61.	Participate in in-service training programs.
	-.15	26	62	52.	Formulate objectives and select instructional content.
.08	-.15	7	43	11.	Arrange for repair of instructional aids and equipment.

Appendix F (continued)

Correlation With V74		Variable Number Form C		Var. No.	ATI Task Description
Form A	Form B	Time	Importance		
	-.17	18	54	42.	Evaluate lesson plans and units prepared by staff.
-.13	-.19	6	42	9.	Maintain administrative files.
-.08	-.19	28	64	56.	Plan and schedule duty assignments of instructional personnel.
.14		21	57	47.	Assist in innovative curriculum development based on current research.
.15	.10	11	17	32.	Direct group discussion and conferences (e.g.: staff, committee, advisory group, etc.).
.16		13	49	36.	Plan and participate in team teaching.
.16	.09	29	65	57.	Visit other schools to obtain information for curriculum planning.
.17	.12	22	58	48.	Participate in meetings initiated and chaired by staff.
.18	.14	16	52	40.	Organize advisory committees, (e.g.: staff, community).
.19	.09	9	45	27.	Review, and evaluate qualifications of prospective staff.
.20	.11	24	60	50.	Perform tasks in response to requests by staff.
.20	.09	23	59	49.	Develop and present plans for establishing a new educational program.
.21	.19	3	39	6.	Confer with administrative staff to determine personnel requirements.
.22	.13	32	68	62.	Participate in or conduct research studies.
.23	.13	4	40	7.	Prepare budget.
.24	.30	25	61	51.	Develop proposals for external financial aid.
.26	.28	15	51	39.	Maintain liaison with other schools, colleges, or universities.

Appendix F (continued)

Correlation With V74		Variable Number Form C		Var. No.	ATI Task Description
Form A	Form B	Time	Importance		
.27	.25	33	69	63.	Perform consultant services to schools and professional educational organizations.
.29	.29	30	66	59.	Confer with staff to determine personnel requirements.

BIOGRAPHICAL SKETCH