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ABSTRACT

This manual presents information on three instruments designed for surveying mental health problems in schools. Part I describes the instruments, which are two questionnaires called the School Problem Area Survey--Staff, and the School Problem Area Survey--Students, and a guide to be used in interviews, called the Demographic Information Form as well as procedures for their use. The questionnaires are designed to obtain information about potential problems in schools which may be amenable to treatment by mental health indirect services program carried out by mental health consultants and members of the schools' staff. The guide should help consultants and principals gain a comprehensive picture of their schools which would aid them in problem solving. Part I, in addition, contains outlines on the necessary steps to be taken to obtain the interview and questionnaire data, statistical procedures involved in data analysis and guidelines for the assigning of priorities for the interpretation of data from three sources. Part II is an exploration of the general meanings of reliability and validity. It is concluded that measures of internal consistency are the most appropriate measures of reliability. Face validity and demonstrations of the utility of the instruments seem most appropriate in addressing the issue of validity. (Author/BJG)

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SURVEYING SCHOOL PROBLEMS:

SOME INDIVIDUAL, GROUP, AND SYSTEM INDICATORS

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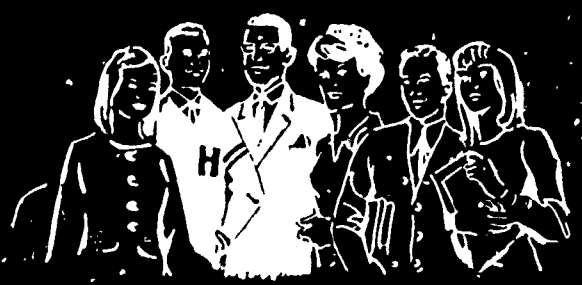

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Based on research performed under a grant from
National Institute of Mental Health
(MH 21708-01, -02, and -02S1)

HumRRO
HUMAN RESOURCES RESEARCH ORGANIZATION

The contents of this manual reflect the views of the Human Resources Research Organization which is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policy of the National Institute of Mental Health.

FOREWORD

A persistent question raised about education today concerns ways to make schooling a more satisfying experience for students and staff alike. The instruments described in this manual have been designed to obtain the perceptions of the students, the staff, and the principal of a school about a variety of common school problems. As diagnostic tools, these instruments have proved useful to mental health consultants to schools and to school personnel in identifying problem areas that warrant corrective action.

Three instruments for gathering data have been developed. Two are self-administered questionnaires to be completed by school staff and students and the third serves as an interview guide for use with school principals. The instruments were developed and tested in 50 junior high schools in six states by the Human Resources Research Organization under a grant from the National Institute of Mental Health.

We are indebted to Dr. Charles Windle, Program Evaluation Specialist, Division of Mental Health Service Programs, National Institute of Mental Health, and to Dr. Beryce MacLennan, Director, Mental Health Study Center, National Institute of Mental Health, Adelphi, Maryland. As Project Officer, Dr. Windle provided guidance and assistance during the progress of this research. Dr. MacLennan was a consultant to the project and an observer at a dissemination and training workshop in which the procedures and instruments were reviewed.

Other project consultants, who have generously contributed time, valuable criticism, and assistance, were Dr. Ira Iscoe, Director, Counseling-Psychological Services Center, University of Texas at Austin; Dr. A. Russell Lee, Director, Emanuel Medical Center, Turlock, California; Dr. Charles D. Spielberger, Professor and Director, Doctoral Program in Clinical and Community Psychology, Department of Psychology, University of South Florida at Tampa; and Mr. Mitchell Baris, research psychologist, Adams County Mental Health Center, Commerce City, Colorado.

Mr. Dave Norman, of the U.S. Naval Postgraduate School, Monterey, California, provided valuable assistance in data processing.

Special appreciation is expressed to the more than 50 school principals who cooperated in the study and made possible the collection of data in their schools.

The study was conducted at HumRRO Western Division, Carmel, California; Dr. Howard H. McFann is the Division Director. The research team consisted of Dr. Elaine N. Taylor, Principal Investigator, Dr. Robert Vineberg, and Dr. S. James Goffard. Significant contributions were made in data collection by Mrs. Dorothy Herbert and Mr. Alton Boyd and in data analysis by Mr. Terrence McGiveran.

The research was performed under NIMH Grants MH 21708-01, -02, and -02S1 during the period 1 June 1972 to 1 July 1974. The manual is designated as HumRRO Technical Report 74-22, October 1974.

The effort reflected in this manual was directed toward helping define problem areas in schools, as a necessary first step in planning more effective school programs and mental health consultation services to schools. It is our hope that these instruments and procedures will prove to be of continuing value to personnel responsible for administering school programs and to mental health workers who consult with them in problem-solving endeavors.

Meredith P. Crawford
President
Human Resources Research Organization

September 1974

BRIEF

This manual presents information on three instruments designed for surveying mental health problems in schools. Part I describes the instruments, and procedures for their use. Part II contains more technical information on the formal characteristics of the instruments.

The instruments are two questionnaires (the School Problem Area Survey—Staff and the School Problem Area Survey—Students), and a guide (the Demographic Information Form) for an interview by a mental health consultant with a school principal.

The questionnaires are designed to obtain information about potential problems in schools which may be amenable to treatment by mental health indirect services programs carried out by mental health consultants and members of the school's staff. The questionnaires are also appropriate for use by school personnel working independently to identify problem areas in their school. Reading level of the student questionnaire is estimated to be high sixth grade. Time to complete the questionnaires is approximately 20 minutes.

The interview form is designed to provide the consultant with a comprehensive description of the school and to guide the principal through a systematic exploration of those features of the school and its setting which may give rise to problems or act as constraints upon possible solutions to problems.

Part I also contains (a) an outline of the necessary steps to be taken to obtain the interview and questionnaire data, (b) an outline of the statistical procedures involved in data analysis, and (c) a set of guidelines for interpreting the data from the three sources of information and for assigning priorities to problems.

The general meanings of reliability and validity, as these concepts are applicable to the instruments, are explored in Part II. It is concluded that measures of internal consistency are the most appropriate measures of reliability. Face validity and demonstrations of the utility of the instruments seem most appropriate in addressing the issue of validity. It appears that the questionnaire can produce data with high reliability (for example, *rs* of .95 for staff and .82 for students in one school). They are capable of discriminating among problem areas within schools and do differentiate between schools. Their face validity seems good.

Appendix materials include (a) directions for hand computation of the data, (b) keypunch instructions and a computer program, and (c) notes on development of the instruments.

Available on order with the instruments are a form for summarizing staff and student responses to the questionnaires and a chart for preparing a profile of staff and student responses to items grouped into problem areas.

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SURVEYING SCHOOL PROBLEMS:

SOME INDIVIDUAL, GROUP, AND SYSTEM INDICATORS

A MANUAL

INTRODUCTION

Background

One responsibility of Community Mental Health Centers is to provide indirect services to schools.[1] These services have varied considerably, but they can be grouped into three main types:

- Case- and/or Client-Centered Staff Development Consultation: Assisting a school staff in the prevention, control, or treatment of mental and emotional problems of individual students.
- Agency-Centered Staff Development: Helping a school staff solve the more general or systemic problems of the school which may be detracting from the efficient accomplishment of its overall mission.
- Project Development: Aiding in developing special programs aimed at groups of students at risk—for example, potential dropouts or drug abusers.[2]

Typically, these services have been undertaken without a systematic study of the needs of the school. Consequently, they have tended to be unplanned, unprogrammatic, and unresponsive to the immediate needs of most of the members of the school staff.[3] Too often, actions seem to be determined by the consultant's theoretical predilections, by a desire to cling to familiar modes of intervention, or by the practical necessity of intervening in a nonthreatening way, rather than by a systematic analysis of the needs of the school.

A comprehensive program of *relevant* indirect services can be provided to a school only when the plans for intervention are based on:

- Comprehensive information about the school.
- Systematic procedures for estimating the relative salience of the various problems identified in the school.
- An appropriate rationale for assigning priorities for intervention among such problems.

[1] PL 88-164 *et seq.*

[2] For a more complete description of these types, see Montague, Ernest K. and Taylor, Elaine N., *Preliminary Handbook on Procedures for Evaluating Mental Health Indirect Service Programs in Schools*, HumRRO Technical Report 71-18, August 1971.

[3] McClung, Franklin B. and Stunden, Alastair H., *Mental Health Consultation to Programs for Children*, Public Health Service Publication No. 2066, National Institute of Mental Health, Bethesda, Md., 1970.

The Project

For use by Community Mental Health representatives in planning mental health consultations and other indirect services to schools, the Human Resources Research Organization has developed a cluster of materials, which includes three survey instruments and this manual to assist users of the survey instruments.

These instruments, which gather information from school staffs and students, are screening devices for identifying possible problem areas that should be considered in planning a program of indirect services.

The three screening instruments are.

- The School Demographic Information Form
- The School Problem Area Survey for School Staff Members
- The School Problem Area Survey for Students

The School Demographic Information Form is to be filled out by a consultant during an interview with the principal of a school. It covers information about five topics:

- *General Characteristics* of the school and the community in which it is located.
- *Extrinsic Factors* that may affect the school operation.
- *Specific School Characteristics*, including policies, curriculum and programs, and special problems.
- *Staff Characteristics.*
- *Summarization* by the principal of the school's most pressing needs and greatest strengths.

The School Problem Area Survey instruments are two questionnaires, one to be administered to staff and one to students, to explore their perceptions about the characteristics of, and the interrelationships among, the school administration (primarily the principal), the teachers, the students, and the community.

Also included in the cluster of materials developed for the survey are two forms—one for use in summarizing survey information on problem areas and priorities, and another for use in drawing a school profile of problem areas.

The Manual

This manual has been written for the convenience of the readers who will use the survey instruments. There are two sections: Part I provides a statement of the various purposes of the instruments, their description, and the procedures to be followed in assessing school needs; Part II presents information on the reliability and validity of the questionnaires—but still at a general level. Included with Part II, but as a separate section for readers interested in more technical information, are Notes supporting the general statements about reliability and validity.

Specifically, the manual provides:

(1) Systematic procedures for gathering comprehensive information about a school. These procedures give the consultant a broad range of data on

(a) the background and composition of the school; (b) sources of problems within the school; (c) loci of disagreement and friction among the administrators, teachers, students, and community.

(2) A set of procedures for analyzing the survey data to yield estimates of the relative salience of the various problems in the school These procedures for comparing and combining information allow the c o order the problems within a school.

(3) Guidelines for assigning priorities for intervention in the various, and usually quite different, problems of a school. When the most salient problems have been identified, they are rank ordered in terms of the extent to which they disrupt achievement of the educational goals of the school.

Part I

THE INSTRUMENTS AND THEIR APPLICATION

Uses of the Instruments

These survey instruments can be used in a variety of ways:

- A mental health consultant and a school principal can make systematic plans for utilizing the indirect services of a mental health facility in a school setting.
- A school principal and his or her staff can assess the needs of their school and can either deal directly with the problems identified as salient, seek aid using resources of the school system, or call upon outside consultants to assist in solving the problems.
- A school superintendent, working alone or with a mental health consultant, can assess the problems of the various schools in the district and thus make more effective plans for allocating the resources available.
- Using data from several schools, a mental health facility can select those schools and problems where its resources can be most appropriately used.

In addition, the survey instruments can:

- Provide baseline data for comparison with "post-treatment" data, thus giving an estimate of the effects of consultation programs or other varieties of indirect services.
- Provide data to document requests for the funding of indirect services.
- Provide material for training programs for mental health consultants.

- Serve as *models* for assessing needs and planning interventions with agencies and institutions other than schools.

These instruments and the associated procedures will serve additional purposes. The interview with the principal in which the School Demographic Information Form is filled out provides a means for establishing rapport and credibility during the early phases of consultation. Also, the data obtained from the survey instruments, when reviewed with the principal and members of the staff, serve an educational function by introducing different points of view and identifying problems not previously recognized. Such a review of the data helps establish the consultation process as a joint problem-solving endeavor.

The School Demographic Information Form

The School Demographic Information Form is a guide which the consultant will use in an interview and discussion with the principal of a school. Depending upon the amount of discussion and amplification of various topics, the interview takes from one to two hours to complete. The content of the interview is based largely on the experiences of many persons who have worked in schools (school personnel, mental health consultants, and educational research workers). The Information Form provides for a systematic exploration of those features of a school and its setting which may give rise to problems in the school or which may act as constraints upon possible solutions to problems. Extracurricular programs, for example, may not be feasible in a school where most of the students have to be bused in; strong community opposition to bond issues may make it all but impossible to improve a school's facilities.[1]

Usually, this interview will be part of the "entry phase" of the consultation process.[2]

This interview serves several purposes, in addition to giving the consultant an opportunity to gain rapport with the principal and establish credibility as a consultant:

- It can give the principal an understanding of the characteristics and possible range of indirect services available

- It presents the principal with an opportunity to sanction (or not to sanction) further consultation.

[1] The form has been revised and reorganized several times. See Appendix C of this manual for some of the analyses which were carried out on pilot data to refine the interview form.

[2] For a detailed discussion of this "entry phase," see A. Beisser and R. Green, *Mental Health Consultation and Education*, National Press Books, Palo Alto, California, 1972.

- It encourages the principal to share knowledge of the school with the consultant.

- Through their joint analysis of the school's problems, it allows the principal and the consultant to formulate an initial list of issues for consultation.

- It gives the consultant an opportunity to make arrangements for administering the questionnaires to the staff and students.

- It encourages the consultant to consider the nature of the school and its setting. (Experience has shown that mental health consultants who have been involved solely in client-centered consultation often know little about the schools where they have been consulting. Consequently, they are not in a position to go beyond client-centered consultation in the services they can offer the school.)

The School Demographic Information Form, arranged in five sections, is presented on pages 10-19.

School District _____

School _____

Principal _____

Years as principal:

This school _____ Other schools _____

Years in teaching and administration:

This school _____ Other schools _____

Responsible person in principal's absence _____

Mental Health Facility _____

_____

Consultant _____

Field _____

Date _____

School Demographic Information Form

HumRRO w-Form 1

These materials were developed under a grant from the National Institute of Mental Health, U.S. Department of Health, Education, and Welfare. Reproduction in whole or in part is permitted for any purpose of the U.S. Government.

I. GENERAL CHARACTERISTICS

A. Grades served (Underline appropriate set):

K 1 2 3 4 5 6 7 8 9 10 11 12

B Length of time this school has been in operation:

Less than 1 year _____
1-2 years _____
3-5 years _____
6-10 years _____
More than 10 years _____

C. Number of students enrolled: _____

D. Average daily attendance: _____

E. Student/Teacher (Professional) ratio: _____

F. School location and source of students:

Location (check those applicable)		Percent of students from:
Metropolitan (150,000 or more)		
Inner city	_____	_____ %
Not inner city	_____	_____ %
Big city (50,000 - 150,000)	_____	_____ %
Small city (10,000-50,000)	_____	_____ %
Town or rural (Less than 10,000, or in country)	_____	_____ %

G. Percent of students who:

1. Can walk to school _____ %
2. Need transportation _____ %

H. Approximate percent of students from each socio-economic level:

Lower Low _____ %
Upper Low _____ %
Lower Middle _____ %
Upper Middle _____ %
Upper _____ %

I. Approximate percent of student families in the following income levels:

Less than $4,000 _____ %
4,001 – 8,000 _____ %
8,001 – 12,000 _____ %
12,001 – 16,000 _____ %
More than 16,000 _____ %

J. Ethnic composition of student body (Approximate numbers):

American Indian _____
Black _____
Oriental _____
Spanish surnamed _____
White _____
Other _____

K. Number of students whose families are on welfare: _____

L. Number of students on free lunch program: _____

M. Estimated number of students enrolled in the following schools who are eligible to attend this school:

a. Private _____
b. Parochial _____
c. Alternative _____
d. Specialized _____
(e.g., vocational, art, music, etc.)

N. Total number of schools in this school district: _____

O. Total number of schools in the district serving approximately the same grade levels as this school: _____

II. EXTRINSIC FACTORS

A. Is the community surrounding the school in the process of rapid social change? (Check applicable statements and describe.)

1. Change in socio-economic composition _____
2. Change in ethnic composition _____
3. Change in predominant character (agricultural, residential, industrial) _____
4. Other changes: _____

Description: _____

_____

_____

_____

B. Community financial support for schools:

1. Financial support is (check one):

Minimal _____

Adequate _____

Generous _____

2. Per pupil expenditure:

In this school $_____

In this school district $_____

In the state $_____

3. Attitudes toward special tax assessments, such as a tax override (check one):

Negative _____

Positive _____

About evenly split _____

Indifferent _____

C. Community attitudes:

1. Toward students, generally (check one):

Hostile _____

Friendly _____

About evenly split _____

Indifferent _____

2. Toward new programs and/or curriculum, generally (check one):

Obstructive _____

Supportive _____

About evenly split _____

Indifferent _____

D. Are there special factions or pressure groups, either beneficial or disruptive, in this community which have an impact upon principal, faculty, or students?

1. No_____ Yes_____

2. If "Yes," what are these groups?

_____

_____

_____

3. How do these groups affect the principal, the faculty, or the students?

a. Beneficial _____

_____

b. Disruptive _____

_____

E. Does this school have any problems with the surrounding neighborhood?

1. No_____ Yes_____

2. If "yes," what are they?

_____

_____

_____

_____

III. SPECIFIC SCHOOL CHARACTERISTICS

A. Orientation of school—Emphasis upon various curriculum fields in relation to student needs:

Curriculum Fields	Under-emphasized	About right	Over-emphasized
1. Academic	_____	_____	_____
2. Vocational	_____	_____	_____
3. Business	_____	_____	_____
4. Other_____	_____	_____	_____
5. Other_____	_____	_____	_____

B. Amount of pressure for student achievement in this school:

	Too much	About right	Too little
From principal and administrative staff	_____	_____	_____
From teachers	_____	_____	_____
From parents	_____	_____	_____
From students	_____	_____	_____

C. Percent of student body in the following levels of achievement relative to national norms:

	Below average	Average	Above average	Test used
Reading	_____ %	_____ %	_____ %	_____
Arithmetic	_____ %	_____ %	_____ %	_____

D. Freedom of choice for students from among:

	None	Some	A lot
Standard courses needed to complete graduation requirements	_____	_____	_____
Electives	_____	_____	_____
Activities (e.g., interest groups)	_____	_____	_____
Organized athletics	_____	_____	_____

E. Student participation in and support of extracurricular activities:

Low_____ Moderate_____ High_____

F. Additional courses or special sections of regular courses for exceptional children:

Fast learners: No_____ Yes_____

Slow learners: No_____ Yes_____

G. Special instructional programs carried either as separate courses or as units of other courses:

	Currently covered	Not covered: Not needed	Not covered: Needed	Perceived community attitude: Favorable + / Neutral 0 / Unfavorable −
1. Family living				
2. Sex education				
3. Drug education				
4. Vocational training				
5. Ethnic studies				
6. Other_____				
7. Other_____				

H. Groups that might profit from special mental health assistance:

In Column A, estimate number of students you expect to have this year for each problem listed.

In Column B, estimate the number of students you expect to participate in any program your school may have (alone or in collaboration with another agency) which deals with that problem.

	Column A: Number of students with problems	Column B: Number of students expected in program
1. Special Education		
a. Blind or partially sighted		
b. Deaf or hard of hearing		
c. Educable mentally retarded		
d. Educationally or emotionally handicapped		
e. Mentally gifted		
f. Other_____		
2. Probation from courts		
3. Suspension from school		
4. Drug abuse		
5. Venereal disease		
6. Pregnancy		
7. Teen-age parents		
8. Underachievers		
9. Students who are one or more years behind		
10. Dropouts		
11. Potential dropouts		
12. Habitual absentees		
13. Student turnover (number transferring in)		
14. Students who speak non-standard English—that is, those with regional or ethnic dialects not common to the faculty		

I. Disruptive incidents during the last school year (estimate number):

1. Petty theft - items under $10 ..... _____
2. Major theft ..... _____
3. Assault - causing absence of at least 1/2 day ..... _____
4. Extortion ..... _____
5. Accidents or injuries at school requiring more than simple first aid ..... _____
6. Other _____ _____

J. Cost of vandalism to school during last year: $_____

K. Discipline:

1. Disciplinary problems referred to special school personnel:

Infraction	Cases per month
Failure to perform school work	
Chronic absenteeism	
Disrespect to people in authority	
Disorderly behavior	
Destruction or stealing of property	
Assaultive behavior	
Drug offenses	
Sex offenses	
Other	
Other	
Total	

2. Time spent on disciplinary cases by persons *within* school:

By whom	Approximate hours per month
Principal	
Assistant principal(s)	
Dean(s)	
Other	
Other	

3. Referrals to persons or agencies *outside* of school:

Person or Agency	Cases per month
Parents or legal guardian	
Pupil personnel services of district office	
Superintendent or assistant superintendent	
School board	
Juvenile authority (probation department or court)	
Police department	
Community counselor	
Physician	
Psychiatrist	
Clergy	
Other	

4. Corporal punishment:

a. Is corporal punishment permissible? No _____ Yes_____
b. Is corporal punishment used? No _____ Yes_____
(If not used, disregard remainder of 4)
c. How many times per month is corporal punishment used? _____
d. Who may administer corporal punishment?
(Check all that are applicable)

Principal . . . . . _____
Assistant principal(s) . . . . . _____
Dean(s) . . . . . _____
Teachers . . . . . _____
Aides . . . . . _____
Parents at school . . . . . _____
Other_____ _____
Other_____ _____

L. Dress Code:

1. Does this school specify any standards for acceptable dress, other than no bare feet? *(If "No," disregard remainder of L.)* Yes_____ No _____

2. Are these standards embodied in a written dress code? Yes_____ No _____

3. What do these standards specify? (Check all items that are applicable.)

No bare midriffs . . . . . _____
Belts to be worn with trousers . . . . . _____
No short-shorts . . . . . _____
Skirt length . . . . . _____
Male hair length . . . . . _____
No beards or mustaches . . . . . _____
No tight sweaters on females . . . . . _____
No trousers on females . . . . . _____
No outlandish dress . . . . . _____
Other_____ _____
Other_____ _____

4. Who was involved in setting these standards?
(Check all items that are applicable.)

School board . . . . . _____
Central administration . . . . . _____
Administration of this school . . . . . _____
Teachers . . . . . _____
Parents . . . . . _____
Students . . . . . _____
Others_____ _____

5. Are the students well-informed about these standards?

No _____ Yes _____

6. How do you assess these standards?

Conservative_____ Modest _____ Liberal _____

7. How strictly are these standards enforced?

Very strictly _____ Not very strictly_____ Not at all _____

8. What is the student body reaction to these standards?
(Indicate percentages)

Favorable _____ %
Passive acceptance _____ %
Rebellious _____ %

IV. STAFF CHARACTERISTICS

A. Qualifications for hiring teaching staff:

Requirements	Yes	No	If "Yes," is it ever waived? Yes	No
A.A. or A.S.	____	____	____	____
B.A. or B.S.	____	____	____	____
Graduate work	____	____	____	____
Teaching credentials	____	____	____	____
Teaching experience	____	____	____	____
Other ____	____	____	____	____

B. Size of staff:

	Number	Is number sufficient? Yes	No
Assistant principals	____	____	____
Deans	____	____	____
Curriculum specialists	____	____	____
Classroom teachers	____	____	____
Teaching specialists for educationally or emotionally handicapped students	____	____	____
Teaching specialists for educable mentally retarded students	____	____	____
Speech and hearing specialists/therapists	____	____	____
Academic counselors	____	____	____
Vocational counselors	____	____	____
Personal counselors	____	____	____
School nurses	____	____	____
School psychologists	____	____	____
Librarians	____	____	____
Cafeteria staff	____	____	____
Secretarial staff	____	____	____
Paraprofessionals	____	____	____
Clerical assistants	____	____	____
Library aides	____	____	____
Other aides	____	____	____
Custodians	____	____	____
Security guards	____	____	____
Other ____	____	____	____
Other ____	____	____	____

C. Teaching experience of classroom teachers:

Years in this school	Number of Teachers
First year	____
1-2 years	____
3-4 years	____
5-6 years	____
More than 6 years	____

Total years of teaching experience	Number of Teachers
First year	____
1-2 years	____
3-4 years	____
5-6 years	____
More than 6 years	____

D. Ethnic composition of professional staff (indicate number):

American Indian	_____	Spanish Surnamed	_____
Black	_____	White	_____
Oriental	_____	Other	_____

E. Teachers' Union and Negotiating Committees:

1. Do the teachers belong to a union?

   No _____ Yes _____

2. Is there a teachers' negotiating committee for dealing with the school board?

   No _____ Yes _____

3. For this building, is there a teachers' negotiating committee for dealing with the principal?

   No _____ Yes _____

F. Inservice training:

1. Is there provision for inservice training in this school?

   No _____ Yes _____

2. What is the approximate number of hours of inservice training available to your staff this year from the following sources?

	Hours
Personnel within this school	_____
Personnel within this district	_____
Consultants hired by the district	_____
Other _____	_____

3. Is release time generally arranged?

   No _____ Yes _____

   Explain, if necessary: _____

   _____

   _____

4. Are most inservice training programs open to all the professional staff?

   No _____ Yes _____

   Explain, if necessary: _____

   _____

   _____

G. Turnover of professional staff in this school during the last year:

Reason for turnover	Number involved
Transferring within district	_____
Transferring to another district	_____
Going on leave	_____
Taking graduate work	_____
Retiring	_____
Other _____	_____

V. SUMMARIZATION

A. In summary, what do you see as the most pressing needs and problems of this school?

Assign a number to each of the above from most (#1) to least important.

B. What do you see as the greatest strengths of this school?

Assign a number to each of the above from most (#1) to least important.

The Questionnaires

A Conceptual Model for Classifying School Problems

The questionnaires are used to obtain the perceptions of staff and students about problems in their school. The content of the questionnaires is based upon a conceptualization of a school as a moderately autonomous subsystem of a community, a subsystem consisting of three primary components: the students, the teachers, and the principal or administration. Problems in a school can arise from seven main sources, either from *within* one of these three components, or at one of the three interfaces among the components or between the community and the school.

Each of the components may be itself a relatively complex system. Problems may arise, therefore, at particular *parts* of an interface between two components. For example, the teachers may be dissatisfied with the principal as an administrator but quite pleased with him or her as an educator or as a leader or simply as a person to work with.

In constructing the questionnaires, a pool of potential items was developed following (a) extensive reading in the educational, psychological, and sociological literature related to schools; (b) interviews with a number of mental health, educational, and sociological consultants to schools; and (c) interviews with school principals, school psychologists, and school teachers.[1]

The Problem Area Survey for School Staff Members

The "School Problem Area Survey: Staff" is a questionnaire in which teachers and other school staff estimate the salience in their school of a variety of potential problems. There are 70 items in the questionnaire, which requires approximately 20 minutes to complete.

The questionnaire (see pages 22-25) deals with two types of information. In the first half (six sections of six questions each[2]), the staff members estimate the severity of the problems they see in the characteristics of, and interrelationships among, students, teachers, the principal, and the community. In the remainder of the questionnaire they rate the severity of a variety of problems associated with the students, teachers, administrator, facility, and community.

[1] The questionnaires have gone through a series of major revisions. See Part II of this manual for a discussion of the formal characteristics of these questionnaires and Appendix C for a review of the developmental history of the questionnaires.

[2] See Table 1 for further details.

The respondents are asked to consider whether they perceive a particular item as an "Extreme Problem," "Considerable Problem," "Moderate Problem," "Little Problem," or "No Problem At All" in their school. An "Exceptionally Good" response column is also provided. While this latter response is treated statistically as if it were "No Problem At All," it has been included to provide the principal, consultant, and others with supplementary information that may be useful in interpreting the data.

The items in this questionnaire are intended simply to screen for problems. For example, unfavorable answers to Item 8—"The respect teachers and students have for one another"—would indicate that a problem exists, but the item does not specify the precise nature of the problem. Several additional items would be needed to specify in detail the nature of the problem. To keep the questionnaire as brief as possible, most items have been written in this general form. Once the problems have been identified generally, their *specific* nature can be elaborated in meetings of the consultant with the principal and the staff.

School Problem Area Survey: Staff

What This Is About

Every school has its strengths and its weaknesses. What are they in your school? The purpose of this questionnaire is to give you a chance to identify some of the strengths and weaknesses that you see in your school.

Obviously, we cannot list all possible strengths and weaknesses. The best we can do is list a number of *general* instances of each and hope that our list will be systematic and comprehensive enough to cover most of the specific strengths and weaknesses that you see in your school.

Please look at each of the items below and decide whether you believe the situation referred to is an *Extreme Problem*, a *Considerable Problem*, a *Moderate Problem*, a *Little Problem*, *No Problem At All*, or, in fact, *Exceptionally Good* in your school, and then put an X in the appropriate column. Even though you feel uncertain about some of the items, report your opinion, your feelings, or your impressions to the best of your knowledge. The consensus on these items would surprise you. Since it is the consensus and not individual responses that we want, do not sign your questionnaire. The questionnaires are and will remain anonymous.

Record your first quick response to these items without pondering over them. Please use the final page of this form to write any further comments you may have.

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IS THIS A PROBLEM IN YOUR SCHOOL? (Put an X in the appropriate column.)	Extreme Problem	Considerable Problem	Moderate Problem	Little Problem	No Problem At All	Exceptionally Good
1. The way the students get along with one another	1	2	3	4	5	6
2. The number of students who don't like going to school and don't do their school work	1	2	3	4	5	6
3. Students from ethnic minorities	1	2	3	4	5	6
4. Friction or hostility between groups of students	1	2	3	4	5	6
5. Capable students who feel that going to school is pretty much a waste of time	1	2	3	4	5	6
6. The number of students who don't seem to do much with other students—who are "loners"	1	2	3	4	5	6
7. The usual social atmosphere or feeling in the classroom	1	2	3	4	5	6
8. The respect teachers and students have for one another	1	2	3	4	5	6
9. Teachers who don't seem to care about the personal and educational problems of their students	1	2	3	4	5	6
10. Teachers who put too much pressure on their students to get good grades	1	2	3	4	5	6
11. Unfair treatment of students by teachers	1	2	3	4	5	6
12. Teachers who won't admit making mistakes or think there is only one right answer to every question	1	2	3	4	5	6
13. Teachers who complain about other teachers	1	2	3	4	5	6
14. Disagreements among the staff on the proper educational goals for the school	1	2	3	4	5	6
15. Disagreements among the staff on the proper balance between traditional and innovative approaches to teaching	1	2	3	4	5	6
16. Communication among the school staff	1	2	3	4	5	6
17. Teachers who seem bored with teaching	1	2	3	4	5	6
18. Older teachers who are reluctant to accept newer teachers as colleagues	1	2	3	4	5	6

IS THIS A PROBLEM IN YOUR SCHOOL? (Put an X in the appropriate column.)	Extreme Problem	Considerable Problem	Moderate Problem	Little Problem	No Problem At All	Exceptionally Good
19. The way the principal gets along with the students	1	2	3	4	5	6
20. A feeling in the school that conformity and orderliness among the students are more important than freedom and individuality	1	2	3	4	5	6
21. Loose or lax policies on student behavior which foster disorderliness and disorganization	1	2	3	4	5	6
22. Absence of a schoolwide system for identifying and dealing with students who have special educational needs or problems	1	2	3	4	5	6
23. The amount of influence student opinion has on the way the school is run	1	2	3	4	5	6
24. The way students are assigned to classes, graded and promoted	1	2	3	4	5	6
25. The way the principal gets along with the teachers	1	2	3	4	5	6
26. The way the principal handles staff conflicts	1	2	3	4	5	6
27. The amount of teachers' time taken up by non-teaching activities	1	2	3	4	5	6
28. Criticism by the school administration of teachers who do not maintain tight control over their students	1	2	3	4	5	6
29. Understanding how the principal evaluates teaching performance	1	2	3	4	5	6
30. Disagreements between the principal and the teachers on educational matters	1	2	3	4	5	6
31. The way the teachers get along with parents	1	2	3	4	5	6
32. The way the people in this neighborhood feel about the school	1	2	3	4	5	6
33. Lack of community interest in the schools	1	2	3	4	5	6
34. Teacher dissatisfaction with the community	1	2	3	4	5	6
35. Community dissatisfaction with the schools	1	2	3	4	5	6
36. School policies that conflict with parents' ideas	1	2	3	4	5	6

IS THIS A PROBLEM IN YOUR SCHOOL? (Put an X in the appropriate column)	Extreme Problem	Considerable Problem	Moderate Problem	Light Problem	No Problem At All	Exceptionally Good
37. Underachievement	1	2	3	4	5	6
38. Cheating	1	2	3	4	5	6
39. Cutting class	1	2	3	4	5	6
40. Absenteeism	1	2	3	4	5	6
41. Dropout rate	1	2	3	4	5	6
42. Vandalism	1	2	3	4	5	6
43. Theft	1	2	3	4	5	6
44. Drugs	1	2	3	4	5	6
45. Alcohol	1	2	3	4	5	6
46. Sexual promiscuity	1	2	3	4	5	6
47. Teen-age parents	1	2	3	4	5	6
48. Delinquency	1	2	3	4	5	6
49. Profanity	1	2	3	4	5	6
50. Violence or threats of violence	1	2	3	4	5	6
51. Transient students	1	2	3	4	5	6
52. Students who speak non-standard English	1	2	3	4	5	6
53. Ethnic tensions	1	2	3	4	5	6
54. Student poverty	1	2	3	4	5	6
55. Student health	1	2	3	4	5	6
56 Changing neighborhood characteristics	1	2	3	4	5	6
57. Divisive community influences	1	2	3	4	5	6
58. Busing to improve racial balance	1	2	3	4	5	6
59. Changing composition of student body	1	2	3	4	5	6
60. Discipline	1	2	3	4	5	6
61. Dress code	1	2	3	4	5	6
62. Irrelevant curriculum	1	2	3	4	5	6
63. Inadequate programs for gifted students	1	2	3	4	5	6
64. Inadequate remedial services	1	2	3	4	5	6
65. Inadequate counseling services	1	2	3	4	5	6
66. Inadequate medical services	1	2	3	4	5	6
67. The condition of the building and/or the grounds	1	2	3	4	5	6
68. Class size	1	2	3	4	5	6
69. Teacher turnover	1	2	3	4	5	6
70. Teacher absenteeism	1	2	3	4	5	6
71. Other_____	1	2	3	4	5	6

The Problem Area Survey for Students

The "School Problem Area Survey: Students" (pages 27-29) is very much like the staff questionnaire in form and content. The students, like the teachers, estimate the salience of a variety of potential problems in their school. This questionnaire, which has 49 items and requires about 20 minutes to complete, is most appropriately used at intermediate and high school levels. While it is readable at the sixth grade level, the meaningfulness of the responses is questionable at that level and below.[1]

For efficiency, it should be given to a sample of students rather than to an entire student body. Guidelines for sampling are presented in "Introducing the Instruments Into a School and Obtaining Data," which appears later in this manual. The student questionnaire should be administered as soon as possible after the staff questionnaire has been administered.

Comparability of Staff and Student Questionnaires

A tabulation of items by problem area for each questionnaire is presented in Table 1, indicating which items are common to the staff and student questionnaires and which are unique. Items have no counterpart in the other questionnaire if (a) the respondent group could not reasonably be expected to be well-informed on the subject, and (b) the item might be considered inappropriate enough in some schools to preclude use of the questionnaire.

[1] An estimate of the required reading level of the instructions is at high sixth grade, based on the Flesch count, using word and sentence length.

School Problem Area Survey: Students

What This Is About

Every school has its own strong points and weak points. What do you think are the particular strong points and weak points of your school? The purpose of this questionnaire is to give you a chance to point out some of them.

It is not practical to list everything that anyone ever thought was a problem in a school. The best we can do is list some of the *general kinds* of problems that students see in their schools. What we have here is a list that will apply to most students in most schools. We hope that each of the *particular* problems that you see in your school will be covered by one of the more *general* problems that we have listed.

For example, one of the items is:

"The usual social atmosphere in the classrooms."

The "social atmosphere" in a classroom is no problem when students and teacher are all working together toward the same goals, when there is a free, open and positive feeling in the room. The social atmosphere in a classroom becomes a problem when there are lots of strong negative feelings—anger, hostility, anxiety, frustration—that make it hard to get any work done. It is up to you to decide whether you feel that the *usual* social atmosphere in your own classrooms is an *Extreme Problem*, a *Considerable Problem*, a *Moderate Problem*, a *Little Problem*, *No Problem At All*, or *Exceptionally Good*. When you have decided, put an X in the box under your choice and go on to the next item.

Please do not sign this questionnaire. We are interested in how groups of students feel, not in identifying the feelings of individual students.

Read each item carefully, but don't think too long about your answer. Give your first quick reaction and go on to the next item. Please use the final page of this form to write any further comments you may have.

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IS THIS A PROBLEM IN YOUR SCHOOL? (Put an X for each problem in the box under your choice.)	Extreme Problem	Considerable Problem	Moderate Problem	Little Problem	No Problem At All	Exceptionally Good
1. Not enough school subjects to choose from	1	2	3	4	5	6
2. Not enough extracurricular activities	1	2	3	4	5	6
3. Getting the students to show some school spirit	1	2	3	4	5	6
4. Too much noise and confusion	1	2	3	4	5	6
5. A generally unfriendly atmosphere	1	2	3	4	5	6
6. The way this school is run	1	2	3	4	5	6
7. The way the students get along with one another	1	2	3	4	5	6
8. The number of students who don't like going to school and don't do their school work	1	2	3	4	5	6
9. Students from ethnic minorities	1	2	3	4	5	6
10. Friction or hostility between groups of students	1	2	3	4	5	6
11. Capable students who feel that going to school is pretty much a waste of time	1	2	3	4	5	6
12. The number of students who don't seem to do much with other students—who are "loners"	1	2	3	4	5	6
13. The usual social atmosphere or feeling in the classroom	1	2	3	4	5	6
14. The respect teachers and students have for one another	1	2	3	4	5	6
15. Teachers who don't seem to care about the personal and educational problems of their students	1	2	3	4	5	6
16. Teachers who put too much pressure on their students to get good grades	1	2	3	4	5	6
17. Unfair treatment of students by teachers	1	2	3	4	5	6
18. Teachers who won't admit making mistakes or think there is only one right answer to every question	1	2	3	4	5	6
19. Teachers who complain about other teachers	1	2	3	4	5	6
20. Teachers who seem bored with teaching	1	2	3	4	5	6

IS THIS A PROBLEM IN YOUR SCHOOL? (Put an X for each problem in the box under your choice.)	Extreme Problem	Considerable Problem	Moderate Problem	Little Problem	No Problem At All	Exceptionally Good
21. Teachers who are usually boring	1	2	3	4	5	6
22. The way the principal gets along with the students	1	2	3	4	5	6
23. A feeling in the school that conformity and orderliness among the students are more important than freedom and individuality	1	2	3	4	5	6
24. Rules for students that are not clear but are vague and indefinite	1	2	3	4	5	6
25. The amount of influence student opinion has on the way the school is run	1	2	3	4	5	6
26. The way students are assigned to classes, graded and promoted	1	2	3	4	5	6
27. Unfair treatment of students by the principal or by the people in his office	1	2	3	4	5	6
28. The way the teachers get along with parents	1	2	3	4	5	6
29. The way the people in this neighborhood feel about the school	1	2	3	4	5	6
30. Cheating	1	2	3	4	5	6
31. Cutting class	1	2	3	4	5	6
32. Absenteeism	1	2	3	4	5	6
33. Dropouts	1	2	3	4	5	6
34. Vandalism	1	2	3	4	5	6
35. Theft	1	2	3	4	5	6
36. Drugs	1	2	3	4	5	6
37. Alcohol	1	2	3	4	5	6
38. Delinquency	1	2	3	4	5	6
39. Profanity	1	2	3	4	5	6
40. Violence or threats of violence	1	2	3	4	5	6
41. Ethnic tensions	1	2	3	4	5	6
42. Busing to improve racial balance	1	2	3	4	5	6
43. Discipline	1	2	3	4	5	6
44. Dress code	1	2	3	4	5	6
45. Useless courses	1	2	3	4	5	6
46. Not enough counseling	1	2	3	4	5	6
47. Not enough medical services	1	2	3	4	5	6
48. The condition of the building and/or the grounds	1	2	3	4	5	6
49. Class size	1	2	3	4	5	6
50. Other _____	1	2	3	4	5	6

Table 1

Common and Unique Items on Staff and Student Questionnaires

NOTE: A dash (–) indicates items with no counterpart in the other questionnaire; an asterisk (*) indicates items with minor modification in wording. Items are grouped into 12 potential problem areas. The first six obtain estimates by staff and students of the problems they see in the characteristics of, and the interrelationships among, students, staff, principal, and community. The last six obtain the staff and students' rating, as to severity of a variety of problems associated with students, teachers, administrator, facility, and community.

School Attractiveness (SA)														
Staff	–,	–,	–,	–,	–,	–								
Student	1,	2,	3,	4,	5,	6								
Student Characteristics and Relationships (SS)														
Staff	1,	2,	3,	4,	5,	6								
Student	7,	8,	9,	10,	11,	12								
Teacher-Student Relationships (TS)														
Staff	7,	8,	9,	10,	11,	12								
Student	13,	14,	15,	16,	17,	18								
Teacher Characteristics and Relationships (TT)														
Staff	13,	14,	15,	16,	17,	18,	–							
Student	19,	–,	–.	20,	–,	–,	21							
Principal-Student Relationships (PS)														
Staff	19,	20,	21,	–,	22,	23,	24,	–						
Student	22,	23,	–,	24,	–,	25,	26,	27,						
Principal-Teacher Relationships (PT)														
Staff	25,	26,	27,	28,	29,	30								
Student	–,	–,	–,	–,	–,	–,								
School-Community Relationships (SC)														
Staff	31,	32,	33,	34,	35,	36								
Student	28,	29,	–,	–,	–,	–,								
Student Problems (SP)														
Staff	37,	38,	39,	40,	41,	42,	43,	44,	45,	46,	47,	48,	49,	50
Student	–,	30,	31,	32,	33*,	34,	35,	36,	37,	–,	–,	38,	39,	40
Community Problems (CP)														
Staff	51,	52,	53,	54,	55,	56,	57,	58,	59					
Student	–,	–,	41,	–,	–,	–,	–,	42,	–					
Administrator Problems (AP)														
Staff	60,	61,	62,	63,	64,	65,	66							
Student	43,	44,	45*,	–,	–,	46*,	47*							
Facility Problems (FP)														
Staff	67,	68												
Student	48,	49												
Teacher Problems (TP)														
Staff	69,	70												
Student	–,	–												

Introducing the Instruments Into a School and Obtaining Data

Several preliminary steps[1] are recommended to introduce the School Demographic Information Form and the two questionnaires into a schoo'. A description of what should occur and an occasional explanation for the activity follow.

(1) The consultant, personally or through a supervisor, should receive the approval of the superintendent or a designated representative to work in the school.

(2) The consultant should contact the principal of the school, offering his or her services as a mental health consultant and arranging for an appointment.

(3) In the first meeting with the principal, the consultant should describe the services he and his facility can offer and the manner in which plans for consultation can be made.

(4) If the principal agrees, at least tentatively, to accept the services of the consultant, copies of the School Demographic Information Form and of the two questionnaires should be left with him. (The demographic form is given to the principal prior to the actual interview so that he can familiarize himself with the various topics to be discussed and can decide whether he would like other staff members to participate in the interview. The questionnaires are left with him so that he can review their content.) The consultant should assure the principal that a summary of all questionnaire data will be provided, so that they can review the data together.

Arrangements should also be made for a second meeting in which the Demographic Information Form will be completed. The principal may also be interested in filling out one of the staff questionnaires. (If the principal completes a staff questionnaire, he and the consultant will be able to compare the principal's perceptions with those of the staff.)

(5) Before the second interview with the principal, the consultant should fill out as much of the interview form as he can from his own knowledge or from available sources within his agency. He can verify this information during his interview with the principal.

(6) During the second interview, both the principal and the consultant should have a copy of the School Demographic Information Form. When the form has been completed, arrangements should be made for administering the questionnaires to the teachers and students. The principal, alone or with the staff, should decide whether to use time at a staff meeting to complete the staff questionnaire, or ask the teachers to complete it on their own time. (It is preferable to administer the questionnaire to the teachers as a group so that (a) any questions they may have can be dealt with immediately and directly, (b) a maximum number of the questionnaires will be returned, and (c) the teachers are aware of the principal's interest in the questionnaire. If the questionnaire is given as the final item in a staff meeting, the teachers can leave as they finish.)

[1] Again, Beisser and Green, *op.cit.*, describe these preliminary steps in considerable detail.

Two decisions have to be made about the student questionnaire at this point:

(a) Whether the principal wants to see the summary of the data from the teachers' questionnaire before making plans for giving the student questionnaire.

(b) The extent to which the principal wants to involve the staff in planning for the administration of the student questionnaire.

(7) The principal and the consultant jointly should discuss the staff questionnaire with the teachers before it is administered. Preliminary remarks and discussion should:

(a) Explain the reason for the consultant's presence.

(b) Sketch out the kinds of mental health activities that are available to the school.

(c) Emphasize the need for systematic planning of mental health interventions.

(d) Outline the procedures for assessing the school's needs and the specific purposes of the staff questionnaire.

(e) Mention the plan to administer a similar questionnaire to students.

(f) Assure the anonymity of respondents. (An envelope should be provided with each questionnaire in which the completed form can be sealed to reassure the teachers about the confidentiality of their responses.)

(g) Explain that both teacher and student data will be summarized and made available to the teaching staff for review.

(h) If the principal has already filled out the staff questionnaire, mention this fact.

(8) When the questionnaires are completed, the consultant or some member of the mental health facility can analyze the data, following the procedures outlined briefly in the next section of this manual and given in full detail, with an example, in Appendix A, or by using the computer program, which is presented in Appendix B.[1]

(9) Depending upon decisions reached in Step (6), either of two procedures may be followed:

(a) The consultant will meet with the principal to discuss the data from the teacher questionnaire; then the student questionnaire will be administered, the data analyzed, and the results reviewed in a second meeting with the principal.

(b) Alternatively, the student questionnaire will be administered and the data analyzed; then the consultant will meet with the principal to review the data from both questionnaires at the same time.

Option (b) is preferable. It not only uses the time of the principal and the consultant more efficiently, but also introduces the teacher and student responses for simultaneous consideration and precludes any crystallization of a point of view based on teacher responses alone. In addition, the similarities and discrepancies in the perceptions of teachers and students become immediately

[1] The programs, written in *FORTRAN IV*, can be used at any facility where a *FORTRAN* compiler is available. The programs for staff and student questionnaires contain 103 and 102 *FORTRAN* statements, respectively, and each operating program fits easily into 8288 bytes.

apparent. Discrepancies are particularly important because they may indicate a need for more information, and may shape the approach to be taken in intervention.

(10) The student questionnaire can be administered to a *random* sample of approximately 50 students. This number is quite adequate without being too cumbersome to analyze. While the questionnaire could be administered to the entire student body, processing the data would be quite time-consuming where keypunch and computer facilities are not available.

The sample should come from students in the highest grade level in the school; they are probably the best informed and have a more mature perspective about the school. The sample should *not* consist of students in a single classroom unless there is strong reason to believe they are representative of the students at that grade level (health or physical education classes, for example, are often made up on an essentially random basis). Under *no* circumstances should the sample be selected on a basis such as teachers' nominations. If a sample selected at random is not possible and there is no clear alternative to selection by class, the sample should consist of two or three smaller classes that will represent the whole range of students at that grade level.

(11) Both the staff and the student data should be reviewed with the teaching staff to identify areas that are perceived as problems by teachers as a group and by students as a group. When the problem areas have been identified, discussion can begin on priorities for programs of intervention.

Analyzing the Data and Setting Priorities

Analysis of Questionnaire Data

The statistical procedures to be followed in analyzing the data are outlined below. (As noted earlier, Appendix A contains a detailed description of these statistical procedures, and Appendix B contains keypunched instructions and a computer program.) The product of this analysis is a list of problems ordered by salience.

The steps to be taken in the analysis of either questionnaire are:

(1) Tabulate the responses to each item.
(2) Find the mean rating for each item.
(3) Find the overall mean rating and the overall variance of the responses (for the questionnaire as a whole).
(4) Standardize the mean item scores by transforming them into T-scores with a mean of 50 and standard deviation of 10.
(5) Find a mean T-score for each problem area (see Table 1 for identification of areas). Figure 1 shows a summary sheet to be used for recording T-scores and their means.

School Problem Area Surveys: Summary of Staff and Student Responses

School _____ Date _____

Staff		Student		Staff		Student		Staff		Student	
Item	T	Item	T	Item	T	Item	T	Item	T	Item	T
		1		25				51			
		2		26				52			
		3		27				53		41	
		4		28				54			
		5		29				55			
		6		30				56			
		SA 6		PT 6				57			
1		7		31		28		58		42	
2		8		32		29		59			
3		9		33				CP 9		CP 2	
4		10		34				60		43	
5		11		35				61		44	
6		12		36				62		45	
SS 6		SS 6		SC 6		SC 2		63			
7		13		37				64			
8		14		38		30		65		46	
9		15		39		31		66		47	
10		16		40		32		AP 7		AP 5	
11		17		41		33		67		48	
12		18		42		34		68		49	
TS 6		TS 6		43		35		FP 2		FP 2	
13		19		44		36		69			
14				45		37		70			
15				46				TP 2			
16		20		47				SUMMARY OF MEAN Ts			
17				48		38		Staff		Students	
18				49		39				SA	
		21		50		40		SS		SS	
TT 6		TT 3		SP 14		SP 11		TS		TS	
19		22						TT		TT	
20		23						PS		PS	
21								PT			
		24						SC		SC	
22								SP		SP	
23		25						CP		CP	
24		26						AP		AP	
		27						FP		FP	
PS 6		PS 6						TP			

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Figure 1

(6) Order the sections (areas) from high to low on the basis of their mean T-scores.
(7) Order the items from high to low on the basis of their T-scores.
(8) If desirable, draw a school profile of problem areas. Figure 2 shows a form to be used for this purpose.
(9) If desirable, T-scores of both staff and student responses can be recorded on a blank questionnaire in association with the items they represent.

As mentioned earlier, each of these steps except (9) is shown in detail in Appendix A, using data obtained with the staff questionnaire.

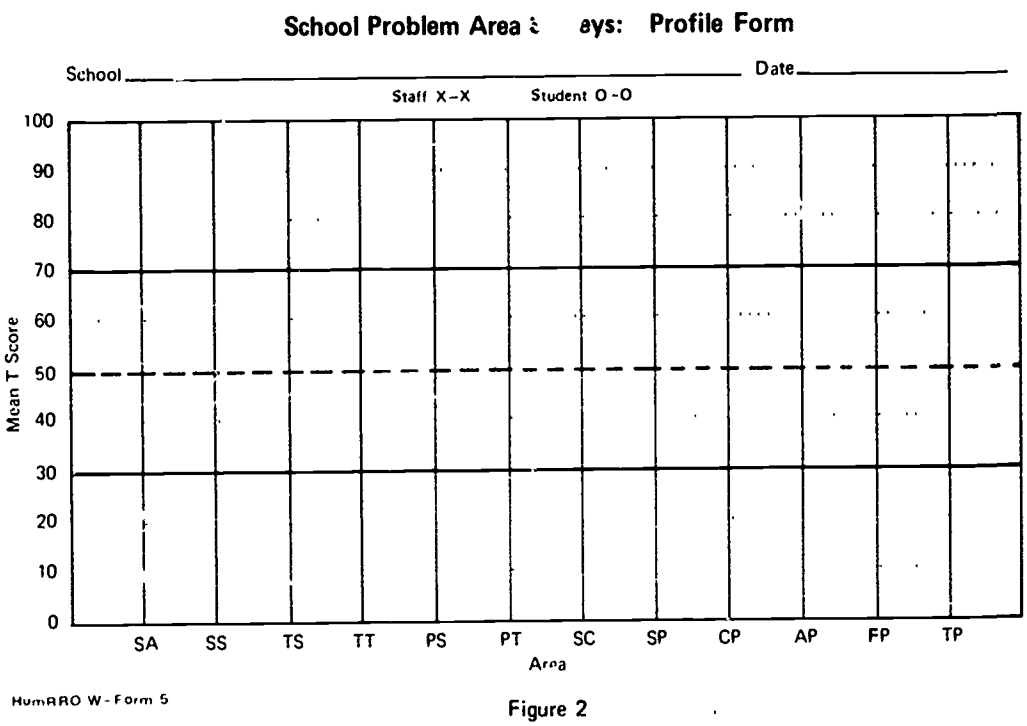

Figure 2

Setting Priorities for Mental Health Intervention

Two steps are involved in identifying those problems for which mental health intervention would be potentially most relevant: (a) identifying the most salient problems, and (b) establishing priorities for the most salient problems. The

salience of a problem is inferred from the data gathered using the three instruments—the staff questionnaire, the student questionnaire, and the Demographic Information Form. The *priority* assigned to a problem depends upon the extent to which it disrupts, or may disrupt, achievement of the educational goals of the school.[1]

Salience. The relative salience of each problem is inferred from its ratings by the student and staff respondents and from the principal's ordering of problems by importance in his summary statement in the Demographic Information Form.

The more often the respondents rate an item toward the "extreme problem" end of the scale, the lower its mean rating will be. Items with means that are low relative to the means of the other items in the questionnaires are assumed to have greater salience for the respondents.

Priority. The priority of a problem depends upon its salience and the extent to which it disrupts, or has the potential for disrupting, attainment of the educational goals of the school. The extent to which a problem may be disruptive depends, in turn, upon the nature of the problem and the number of persons affected by it. To assign priorities, it is recommended that the five to ten most salient problems from all three sources of data be rank ordered with respect to their actual or potential disruptiveness.

Problems which would be ranked highest are those which have the potential to render the school inoperable. Racial conflict and student unrest are, under some conditions, such problems.

Generally, next in order of disruptiveness are those problems which preclude effective learning by sizable numbers of students. Linguistic barriers between students and teachers (in the form of a foreign language or even of non-standard English) and drug abuse are sometimes such problems. Since they virtually preclude communication between teachers and students, they interfere with learning.

Next, problems that might be judged moderately disruptive are systemic problems of the school which interfere with the successful accomplishment of its mission. Difficulties in interpersonal communication among the school staff, or of role definition, inter-group conflicts over school goals and policies, inequities or uncertainties in policy setting or in decision making are examples.

Finally, rankings at the lower end of the disruptiveness scale might be assigned to problems that interfere with the learning and/or socialization of individual students—for example, the underachieving student, and the habitual absentee.[2]

Ideally, the principal, representatives of the school staff, and the consultant will meet jointly to establish priorities, that is, to rank order the most salient problems with regard to their disruptive effects. A convenient way to display the most salient problems to be reviewed in this meeting is to list, in

[1] The goals of the school may be interpreted in the broadest sense and may vary from school to school. Some schools may focus their goals strictly on academic achievement; others may emphasize the development of self-concepts, career orientation, etc.

[2] These four categories of problems are arranged as a hierarchy based upon the premise that the most *relevant* activity of the mental health consultant and the school staff is directed at reaching the largest "audience" or client group.

order, the five to ten items with the highest salience (lowest mean rating) from the two questionnaires and the last page of the Demographic Information Form (the principal's Summarization). The data from the three sources (the staff, students, and principal) should be given equal weight in rank ordering the priority of the various problems.

Setting priorities for intervention in accordance with the estimated disruptive effects of problems is essential as a first step in planning *relevant* indirect services. However, once the priorities have been established, the final stage in planning a program of intervention remains, although it is not within the scope of this manual. Appropriate treatments for each of the high-priority problems must be considered and a final selection made based upon:

- The cost in time, personnel, and money for each intervention.
- The feasibility and acceptability of each intervention to the school and the community.
- The pay-off or the anticipated outcome of each intervention.

While guidelines have been presented here for setting priorities, the final judgment on what problems will be addressed and what strategies will be used to deal with them must rest with the principal and his staff and their personal knowledge of the school. The procedures and instruments provided in this manual ensure only that a very broad inspection will be made of the potential problems of the school. The likelihood that a program of indirect services will be launched which deals with trivial problems, or affects only a very small number of persons, or reflects no more than the personal biases of one or two people will be reduced if these procedures are followed.

The methodology described up to this point has been limited to determining the direction of intervention *within* a school. Similar procedures would be employed when the methodology is used to assess problems of *several* schools in order to allocate resources among them. The superintendent's office and/or a mental health facility would inspect the highest priority problems of several schools and select a school (or schools) for intervention by ordering the problems presented in terms of their relative disruptiveness. The same constraints of cost, feasibility, and pay-off would condition the final decision on allocation of resources

Part II

THE RELIABILITY AND VALIDITY OF MEASURES

In this part of the manual, the reliability and the validity of the questionnaires are discussed. The *general* meanings of reliability and validity as they are applicable to these instruments, are explored. Findings on reliability and validity are presented.

For the reader interested in the more technical details on which conclusions are based, Notes have been included in a separate section at the end of the text.

Reliability

For the most part, the *reliability* of an instrument is concerned with the question: "Can I believe what the scores tell me?" There are two ways this question can be asked, and each form of the question deals with a different factor of reliability:

- The first form deals with internal consistency measures of reliability: "Are the scores telling me anything?"
- The second form deals with some form of test-retest reliability: "Can I rely over time on what the scores tell me?"

Measures of Reliability

1. "Are the scores telling me anything?" The great variety of *internal consistency* measures of reliability show, by one formula or another, that the distribution of scores obtained with an instrument is not likely to be due to chance, that the responses made to the items are patterned, that certain responses are given more often than chance would allow to some items than to others.

While it may seem trivial to demonstrate that the response matrix is not a random aggregation, it is necessary to show that there is some consistency in the responses.[1]

2. "Can I rely over time on what the scores tell me?" Conventional psychometry is directed at measuring relatively stable characteristics of persons; therefore, this question is usually answered with some form of *test-retest* reliability. Since the problems in a school can be expected to shift over time, sometimes very rapidly, test-retest reliability has limited utility for these instruments. If you questioned one random half of the respondents of a school one week and the other half a week later, a high correlation between them would indeed indicate good reliability over time, but a low correlation could suggest only that something had changed in the meantime, rather than that the instruments display poor reliability over time.

Reliability Analysis

Measures of internal consistency must be confined to data collected *within* a school and the resultant statistics are specific to that school. It would be illogical to calculate measures of internal consistency using the *pooled* data of several schools, since internal consistency relies upon the extent of agreement about conditions in a particular school.

To get some notion of the reliabilities we might expect from our questionnaire, we analyzed the data from the staff and the ninth grade students of one school selected at random from among the 13 schools used for the final testing of the questionnaires. The questionnaires administered in these schools differed in only minor particulars from the final printed versions contained in this manual. From this school we had 37 complete staff questionnaires and 39 ninth grade student questionnaires.

Reliabilities obtained were .95 for the staff questionnaire and .82 for the student questionnaire. (Note #1 presents the results of this analysis in more detail)

Based upon this and other analyses we have done, we can state the following conclusions:

(1) Reliabilities of a high order can be obtained with the questionnaires.

[1]No simple statistical test will tell whether scores that are reliable constitute a measurement, however. Both the stimuli (items) and the response options must be examined to see whether they make sense as a measure. Our questionnaire items are all concerned with potential problems in schools. The respondents indicate how much of a problem they think each one is in their school. In the data collected thus far in some 50 schools, the respondents in all cases indicate by their choices that they agree some items are more of a problem than others.

(2) Reliabilities will vary from school to school depending on whether or not the school has some outstanding strengths and weaknesses.[1]

(a) In a school with no problems, reliability measures are likely to be low.
(b) In a school with severe problems, reliability measures are likely to be high.

(3) Students will tend to give less reliable data than staff, although in a school with outstanding and severe problems, student consensus will be better—the reliability higher—and they will show greater agreement with the staff evaluation of items.[2]

Although we collected no test-retest data, it is reasonable to consider how much random fluctuation might be expected in a single item mean from one time to another. Based on the analysis in this one school, a shift in an item's T-score of more than about 5 points in the staff questionnaire, or 10 in the student questionnaire would be a fairly rare *chance* event, unless the number of respondents is quite small (15 or less). Changes larger than those may indicate real changes in the respondents' evaluation of the problem. These estimates, however, are subject to revision with further experience.

Validity

Our measures appear to tell us *something* about the current state of affairs in a school with reasonable reliability. Is what they tell us true? Are the measures valid? While the validity question is usually asked in terms of truth, it is more sensible to ask it in terms of *utility for some purpose.* Either way implies that the data can be checked or validated against some external criterion: the first, against some other, presumably less fallible source of information; the second, against some ultimate measure of utility. Each of these concepts is taken up on the following pages.

[1] In a school with few or no outstanding strengths or weaknesses, lower internal consistency will be obtained, for the reason that there can be little agreement among respondents if there is little that is noticeable enough for them to agree upon. A measure can't tell you anything if there is nothing to tell. In conventional psychometrics, this difficulty corresponds to the very common problem of restricted range. The instruments appear to provide reliable data if there is something to discriminate and if the number of respondents is reasonably large.

[2] In these data, using the 40 items common to the two questionnaires, the Staff-Student correlation was only .26. However, in an analysis of 32 schools studied earlier, the *general level* of response (overall mean) on staff and student questionnaires was found to correlate .62.

Cross-Validation

The staff and student questionnaires might be checked against one another as independent sources or against the principal's statements in his or her interview. However, the staff, the students, and the principal may have points of view that are so different as to vitiate any comparisons. Teachers seem to complain about *class size* fairly often, while students never do. Teachers are concerned with tactical classroom problems and principals with strategic school problems, and while each may appreciate the other's problems, they seldom take them on as their own.

Our data do suggest that Teacher-Student correlations, based on the T-scores of the common items, may be higher in more troubled schools. That suggests in turn that cross-validation *internal* to the school may depend upon the presence of obvious and severe problems which have a considerable and identifiable impact upon everyone in the school. In a school with no severe problems, each of the three respondent groups may be preoccupied with its own problems and, as a consequence, show little cross-validity. In principle, at least, the only source of information about what teachers, students, and principals *believe* are the problems of a school are the teachers, students, and principals. While the groups may differ considerably, the perceptions or beliefs of one group cannot be used to invalidate the perceptions or beliefs of another.

Face validity should not be overlooked. These questionnaires direct respondents to express their *feelings* about a series of potential problems, and, unless the respondents are deliberately trying to deceive the investigator, it must be assumed that they *have* expressed their feelings. Therefore, the instruments have face validity (barring deception) as measures of the respondents' *feelings* about the problems listed. This does not guarantee that the feelings expressed are consonant with reality, however. A school where the "ethnic tensions" item gets a low (unfavorable) score may be having a problem of ethnic tension or the respondents may have given ethnic tensions low ratings because they were overly sensitive to the general issue or overly reactive to minimal cues. In any case the immediate question to be dealt with is the respondents' feelings. Ultimately, whether feelings or ethnic tension or both are to be treated will depend upon the particular situation in the school.

Utility

It is better to ask whether the questionnaire data suggest useful points of attack in planning programs of intervention. Do the questionnaires fulfill their purpose as instruments for a mental health consultant or other persons to use in order to give the school staff a systematic and comprehensive view of what they themselves (and the students) see as the problems of the school and to stimulate cooperative action by the staff directed at dealing with those problems?

Although the instruments have had, as yet, only limited use as a preliminary to planning programs of intervention, what use they have had has been reported to be quite successful.

Evidence About the Utility of the Questionnaires

We carried out several analyses on groups of schools to determine, for the first six areas of the questionnaires, whether schools tend to show similar profiles, whether some areas tend to be seen as problem areas in all schools sampled, and whether the schools are differentiated by the various areas of the questionnaires. (Note #2 presents the results of these analyses in more detail.)

From these analyses we can state the following conclusions:

(1) School profiles are mildly similar for staffs and quite similar for students. (In a sample of 33 schools, the staff "profiles" correlated .34 and the student profiles correlated .64. In a sample of 10 schools, using the more nearly final forms of the questionnaires, the correlations were .56 and .65 for staff and students, respectively.)

(2) Some areas tend to get consistently *unfavorable* ratings (Student-Student for the Staff and Principal-Student for the Students) and others consistently *favorable* ratings (School-Community for Staff and Students) across all of the schools in the samples.

(3) The questionnaires do discriminate *differentially* among schools in the various areas.

These findings support the presumption of validity, not only of the questionnaire as a whole, but of the sections directed at each potential problem area.

Summation

These questionnaires appear to be both a reliable and a valid means of identifying major sources of discontent in a school, provided the respondents are willing to cooperate in answering the questions, as they usually seem to be.

Note #1—Sample Analysis of Data

For one school, analyses of variance were computed on the responses to each of the first six sections of the two questionnaires and to the two questionnaires as wholes.[1,2] We analyzed the responses into three orthogonal components: *Items*, *Respondents*, and *Items by Respondents Interaction* which served as the *Error* term.

The *Error* components in the first six sections of the two questionnaires were:

Section	Staff	Student
School Attractiveness	--	2.01
Student-Student	.41	1.28
Teacher-Student	.68	1.38
Teacher-Teacher	.55	1.09
Principal-Student	.94	1.78
Principal-Teacher	.75	--
School-Community	.77	1.15

The *Items* components were:

Section	Staff	Student
School Attractiveness	--	4.90
Student-Student	14.86	4.81
Teacher-Student	12.04	4.32
Teacher-Teacher	(5.25)	(45.23)
Principal-Student	(16.48)	(9.37)
Principal-Teacher	3.50	--
School-Community	(6.91)	(13.12)

(Values in parentheses are not comparable because both the item content and the number of items varied between the two questionnaires.)

The *reliabilities* (internal consistency, computed by analysis of variance) of the various sections and of the entire questionnaires were:

Section (or Area)	Staff	Student
School Attractiveness	--	.59
Student-Student	.97	.73
Teacher-Student	.94	.68
Teacher-Teacher	.89	.98
Principal-Student	.94	.81
Principal-Teacher	.79	--
School-Community	.89	.91
Total Questionnaire	.95	.82

"Total Questionnaire," of course, includes several sets of brief items as well as the six sections listed.

[1] Winer, B.J., *Statistical Principles in Experimental Design*, McGraw-Hill Book Company, 1962.

[2] In the 37 staff questionnaires, 161 of the responses (6.2%) were missing; in the 39 student questionnaires, 36 responses (1.9%) were missing. To simplify the computations we supplied scores for the missing responses, using the two response values on either side of the mean of the item in question. The number of degrees of freedom in the various analyses was reduced accordingly.

In the section of the staff questionnaire with the lowest reliability (Principal-Teacher, .79) the T-scores of the individual items were 118, 68, 108, 97, 89, and 103, showing that the staff was uniformly well pleased with its relationships with the principal. Obviously, since reliability is a function of both consensus and item differentiation, such scores can yield only a relatively low reliability.

As would be expected from their greater lack of consensus (the Error components), the student reliabilities are uniformly lower than the staff except in two areas. However, in the one, Teacher-Teacher, the student questionnaire contains only three items, two of which were rated very high and one very low; in the other, School-Community, there are only two items, one rated very high and the other about average. Obviously, when there are very few items, reliabiiity is only a moderately useful concept.

Note #2—Results of Sample Comparison of Schools

In a pilot study, data were obtained from the staffs and students of 33 junior high schools responding to earlier and longer versions of the two questionnaires, one student questionnaire, and three forms of a staff questionnaire. For this analysis, the items in the questionnaires were classified into the six areas or categories used in the final versions of the questionnaires (Student-Student, Teacher-Student, and so on). The T-scores of the items in each area were then averaged for the staff and students of each school. This process gave six mean T-scores for the staff of each school and four for the students, who had no Teacher-Teacher or Principal-Teacher items. Because there were three different forms of the staff questionnaire, the number of items entering into each mean T-score varied rather considerably. Accordingly, the mean T-scores were all restandardized on the basis of the number of items entering into each. This made the means more nearly comparable. Analyses of these two sets of mean T-scores (using the *Schools by Areas Interaction* for the Error term, as is appropriate for a random effects design) gave the following results:

	Source	*df*	MS	*F*	*p*
Staff:	Schools	32	150	< 1	NS
	Areas	5	12845	17.94	< .01
	SxA	160	716		
	Total	197			
				r	
	Within Schools	165	1084	.34	

	Source	*df*	MS	*F*	*p*
Student:	Schools	32	74	< 1	NS
	Areas	3	52074	59.86	< .01
	SxA	96	870		
	Total	131			
				r	
	Within Schools	99	2421	.64	

As expected, the *Schools* effect is not significant since overall differences between schools are eliminated by the initial standardization. The highly significant *Areas* components indicate that some areas tend to get consistently unfavorable ratings (Student-Student for the staff and Principal-Student for the students) and others consistently favorable ratings (School-Community for staff and students) across all of the schools in the sample. The intraclass correlations (*r*) show the extent of this trend more clearly. The average intercorrelations among schools of .34 for staff and .64 for students show that school profiles are mildly similar for staffs and quite similar for students.

In a later analysis of data collected from the staffs of ten schools and the students of six schools (using the newer versions of the questionnaires, which closelv resemble the final versions), the following results were obtained:

	Source	*df*	MS	*F*	*p*
Staff	Schools	9	159	< 1	NS
	Areas	5	2508	13.63	< .01
	SxA	45	184		
	Total	59			
				r	
	Within Schools	50	417	.56	

	Source	*df*	MS	*F*	*p*
Student	Schools	5	108	< 1	NS
	Areas	4	2318	12.40	< .01
	SxA	20	187		
	Total	29			
				r	
	Within Schools	24	542	.65	

These analyses are strikingly like the first and yield the same conclusions.

As will be noted, the mean squares obtained in the second pair of analyses are all markedly smaller than those obtained in the first. The mean T-scores used in the second analyses were based on six items each and did not require restandardization to make them comparable to one another. Their standard deviation was, therefore, not 10 but 4 (i.e., $\sqrt{100 \div 6}$).

In this type of analysis, the interaction mean square can be expected to be equal to or something less than the square of the standard deviation of the original observations, which is 100 for the first pair of analyses and 16.7 for the second. In all of these analyses, however, the SxA interaction terms are 7 to 10 times larger than expectation. A large and real interaction between *Schools* and *Areas* is apparent in these data. Despite the general similarity of school profiles, there are large and highly significant differences among schools within the areas; the questionnaires are, in fact, discriminating differentially among schools in the various areas.

APPENDICES

Appendix A

DIRECTIONS FOR HAND TABULATION AND ANALYSIS OF QUESTIONNAIRE DATA

The first time you receive a bundle of completed questionnaires, you may be inclined to tabulate the responses directly onto a blank questionnaire form. However, unless the bundle is very small, suppress that impulse. The number of errors you can make in such direct tabulation is sizable, and tracking down responses missing from the tabulation is very time-consuming.

The following steps are recommended for data analysis when it must be done by hand:

1. *Transcribe the responses on each questionnaire to a work sheet which can display all of the responses of all of the respondents in compact, accessible, and usable form.*

A sample page of raw data from one completed staff questionnaire is shown in Figure A-1. Data in Figure A-1 have been recorded in Column A of the work sheet shown in Table A-1. (Columns B-J show the responses of nine additional staff members.) To transcribe the data from a questionnaire to the work sheet, record in the appropriate row for the item and the appropriate column for the respondent, the number in the box that has been marked on the questionnaire. If no response is made to an item, record a dash (—). If Column 6 (Exceptionally Good) is checked, record it as a 5 with a 6 in parentheses following, as in 17-G in Table A-1.

In transcribing the raw data, discard questionnaires with an excessive number of blanks, many multiple responses, or other evidence of carelessness or inappropriate response sets. (Such questionnaires have, thus far, been uncommon.) There is no need to put identification numbers on individual questionnaires unless you think you may want to go back to check the accuracy of your transcription. Normally, once you have transcribed the raw data, you can dispose of the questionnaires, unless they contain written comments you want to save.

2. *In Table A-1, count the number of times each response was made to each item; then record this information on a summary sheet, by item, under the appropriate Response Value column (see Table A-2.)*

The response frequencies of the items in Table A-1 have been recorded in Table A-2. For example, Table A-1 shows that, for Item 1, five respondents checked Response 2 (Considerable Problem) and five respondents checked Response 3 (Moderate Problem). Therefore, in Table A-2, in the row for Item 1 there is a 5 under Response Column 2 and a 5 under Response Column 3.

3. *Find the mean rating or average response made to each item.*

You will need to make two summations to do this:

- The first summation, shown in Table A-2 as Σf, is the number of respondents who gave scorable responses to the item. It is found simply by adding the numbers in each row, except those in the No Response column. For example, in Table A-2 one of the 10 respondents did not answer Item 7; therefore, for Item 7, $\Sigma f = 9$.

Sample Page of Raw Data

IS THIS A PROBLEM IN YOUR SCHOOL? (Put an X in the appropriate column.)	Extreme Problem	Considerable Problem	Moderate Problem	Little Problem	No Problem At All	Exceptionally Good
1. The way the students get along with one another	1	2	X 3	4	5	6
2. The number of students who don't like going to school and don't do their school work	1	X 2	3	4	5	6
3. Students from ethnic minorities	1	X 2	3	4	5	6
4. Friction or hostility between groups of students	1	2	X 3	4	5	6
5. Capable students who feel that going to school is pretty much a waste of time	1	X 2	3	4	5	6
6. The number of students who don't seem to do much with other students—who are "loners"	1	2	3	X 4	5	6
7. The usual social atmosphere or feeling in the classroom	1	X 2	3	4	5	6
8. The respect teachers and students have for one another	1	X 2	3	4	5	6
9. Teachers who don't seem to care about the personal and educational problems of their students	1	X 2	3	4	5	6
10. Teachers who put too much pressure on their students to get good grades	1	2	3	4	X 5	6
11. Unfair treatment of students by teachers	1	2	3	X 4	5	6
12. Teachers who won't admit making mistakes or think there is only one right answer to every question	1	2	3	4	X 5	6
13. Teachers who complain about other teachers	1	2	3	X 4	5	6
14. Disagreements among the staff on the proper educational goals for the school	1	X 2	3	4	5	6
15. Disagreements among the staff on the proper balance between traditional and innovative approaches to teaching	1	X 2	3	4	5	6
16. Communication among the school staff	1	2	X 3	4	5	6
17. Teachers who seem bored with teaching	1	X 2	3	4	5	6
18. Older teachers who are reluctant to accept newer teachers as colleagues	1	2	3	X 4	5	6

Figure A-1

Table A-1

Sample Work Sheet

Item	Respondents A-J (Staff or Students)									
	A	B	C	D	E	F	G	H	I	J
1	3	2	3	2	3	2	2	3	2	3
2	2	2	3	1	2	2	2	2	2	2
3	2	3	3	5	3	2	4	4	2	3
4	3	2	3	3	3	2	2	3	2	3
5	2	2	1	1	3	2	3	2	2	1
6	4	3	4	3	3	3	3	4	3	3
7	2	2	3	3	3	—	3	3	3	3
8	2	1	3	3	3	2	3	2	1	3
9	2	2	3	2	4	4	5	4	4	4
10	5	3	3	5	4	4	3	5	4	4
11	4	3	4	5	5	3	—	4	4	5
12	5	3	4	4	5	3	—	4	4	5
13	4	4	4	2	5	4	4	4	4	5
14	2	4	4	3	5	4	3	4	—	4
15	2	4	4	4	5	2	—	3	—	2
16	3	2	3	—	5	2	4	3	4	5
17	2	3	4	5	5	3	5(6)	3	4	5
18	4	4	4	5	5	5	3	4	4	5

- The second summation is shown as Σfx. It is the sum of all the *response values* recorded for each item. It is obtained for each item by multiplying the *frequency* of each response by its *value* and summing these products. For example, for Item 1 in Table A-2:

0 (the frequency)	times	"1" (the value)	=	0
5	x	"2"	=	10
5	x	"3"	=	15
0	x	"4"	=	0
0	x	"5"	=	0
0	x	"5"(6)	=	0
$\Sigma f = 10$		Σfx	=	25

NOTE: Response 6 (Exceptionally Good), coded as 5(6), has the same *value* as Response 5 (No Problem at All).

Table A-2

Sample Summary Sheet and Computations

Item	Response Value 1	2	3	4	5	5(6)	No Response		Summations and Scores: No. of Responses (Σf)	Total Response Value (Σfx)	Mean Rating ($\bar{x}$)	T-Score
1	–	5	5	–	–	–	–		10	25	2.50	28
2	1	8	1	–	–	–	–		10	20	2.00	14
3	–	3	4	2	1	–	–		10	31	3.10	45
4	–	4	6	–	–	–	–		10	26	2.60	31
5	3	5	2	–	–	–	–		10	19	1.90	11
6	–	–	7	3	–	–	–		10	33	3.30	51
7	–	2	7	–	–	–	–		9	25	2.78	36
8	2	3	5	–	–	–	–		10	23	2.30	23
9	–	3	1	5	1	–	–		10	34	3.40	54
10	–	–	3	4	3	–	–		10	40	4.00	71
11	–	–	2	4	3	–	1		9	37	4.11	74
12	–	–	2	4	3	–	1		9	37	4.11	74
13	–	1	–	7	2	–	–		10	40	4.00	71
14	–	1	2	5	1	–	1		9	33	3.67	62
15	–	3	1	3	1	–	2		8	26	3.25	50
16	–	2	3	2	2	–	1		9	31	3.44	55
17	–	1	3	2	3	1	–		10	39	3.90	68
18	–	–	–	5	5	–	–		10	45	4.50	85
No. of Responses (Σf)	6	41	54	46	25	1	7					
Totals									$\Sigma\Sigma f$ 173	$\Sigma\Sigma fx$ 564	$\bar{X}$ 3.26	$\bar{T}$ 50
Sums of Squared Values (Σfx^2)	6	164	486	736	625	25	–		$\Sigma\Sigma fx^2 = 2042$			

$a = \Sigma\Sigma f = 173$

$b = \Sigma\Sigma fx = 564$

$c = \Sigma\Sigma fx^2 = 2042$

$d = \frac{a}{\text{No. Items}} = \frac{173}{18} = 9.61$

$e = \bar{X} = \frac{b}{a} = \frac{564}{173} = 3.26$

$$SE = \sqrt{\frac{ac - b^2}{a^2 d}} = \sqrt{\frac{173 \times 2042 - (564)^2}{(173)^2 \times 9.61}} = \sqrt{.1224} = .35$$

$$T_i = 50 + 10\left(\frac{\bar{X}_i - e}{SE}\right)$$

The mean rating of an item, shown as $\bar{x}$ is its Σfx divided by its Σf. In the example $\frac{25}{10} = 2.5$, which is the mean for Item 1.

All of these values, Σf, Σfx, and $\bar{x}$ are shown for each item in Table A-2.

4. *Determine which item means are high enough to suggest a "really" favorable situation or low enough to point to a "really" unfavorable situation.*

It is obvious that Item 5 in Table A-2, with a mean of 1.9, is the "worst," and Item 18, with a mean of 4.5, is the "best," with the other items somewhere between.

How high or how low must an item mean be to be considered "really" favorable or "really" unfavorable?

Consider a hypothetical experiment in which you could give the same questionnaire over and over again to the same teachers without their remembering you had done so. Assume that conditions in the school remain substantially the same during the period of the experiment. On the questionnaire as a whole you would expect to get about the same distribution of responses—the same number of responses to Item 1, the same number of responses to Item 2, the same number to Item 3, and 4 and 5—each time the questionnaire was administered. However, you would not be surprised if the distribution of responses to a given item (hence the item mean) varied somewhat from one administration of the questionnaire to another.

The amount that an item mean can be expected to vary under such circumstances as these is measured by its *Standard Error* (SE). In fewer than five administrations in 100 will an item mean be more than two Standard Errors larger or smaller than its mean taken over all administrations. If you find the mean of an item on a given administration to be more than two SE from its overall mean, you can come to one of two conclusions: either (a) this is one of those relatively rare events (less than 5 in 100); or (b) something has happened in the school, and your assumption that conditions have remained the same is false.

The Standard Error of an item mean can be estimated easily. To do so, you need to find several more numbers that are represented by a through e below:

a. The total number of responses made to the questionnaire—that is, the sum of the Σfs of the individual items ($\Sigma\Sigma f$).
b. The total *value* of all of those responses—that is, the sum of the Σfxs of the individual items ($\Sigma\Sigma fx$).
c. The sum of the *squared* values of the responses—that is, the number shown as $\Sigma\Sigma fx^2$, or more clearly symbolized as $\Sigma f_1(1^2) + \Sigma f_2(2^2) + \Sigma f_3(3^2) + \Sigma f_4(4^2) + \Sigma f_5(5^2)$, where Σf_1 is the total number of "1" responses, Σf_2 the total number of "2" responses and so on; this is calculated from column sums.
d. The average number of responses per item—that is, Step a divided by the number of items, which is 18 in our brief example (but actually would be 70 in the staff questionnaire and 49 in the student questionnaire).

The formula for the Standard Error uses the four numbers just defined and is shown in Table A-2. Table A-2 also shows, for the data of Tables A-1 and A-2, the four numbers defined above and the Standard Error.[1]

[1] It will be noted that this approximate estimate of the Standard Error is based on the *Total* variance of the response matrix rather than on the more precise *Error (Respondents x Items)* variance. Numerous analyses have made it clear that the approximate estimate is only slightly larger than the precise estimate. The very small difference does not warrant the extra labor involved in computing the more precise estimate.

To use the Standard Error, you will need one more number:

e. The overall mean—that is, Step b divided by Step a or $\overline{X}$. This overall mean, the average response across all items, is the standard against which you can evaluate individual items.

For the data summarized in Table A-2, the overall mean is 3.26 and the SE is .35. Taken together, they indicate that items with means higher than 3.96, which is 3.26 + (2 x .35), or lower than 2.56, which is 3.26 - (2 x .35) are probably not average items for this school and should be looked at as pointing at possible strong points and potential problems, respectively.

5. *Calculate T-Scores.*

For the large array of item means obtained with an entire questionnaire, the inspection of item means is made simpler by transforming them into T-scores, which sets the mean equal to 50 and the Standard Error equal to 10. Nonaverage or "significant" items, then, are items with T-scores of 70 and above and 30 and below.

The formula for T is given at the bottom of Table A-2: $\overline{x}_i$ is the mean of a given item, e is the overall mean of the data, and SE is the standard error as computed above. The last column of Table A-2 gives the T-scores for the items in the example.

T-scores are almost indispensable if you have given both staff and student questionnaires in a single school *or* are interested in comparing data from different schools. You can make *direct* comparisons of item mean scores between staff and student questionnaires in the same school or between schools *only* when the overall means are the same, when the distributions of responses are equally variable and when the samples are of the same size. Experience indicates that none of these is likely to be the case in two questionnaire administrations. Consequently, if you want to compare scores from two questionnaire administrations, you need some way of compensating for all of these possible differences between one set of data and another.

Table A-3 shows the item means and the corresponding T-scores obtained in two different schools on the first 12 items of the staff questionnaire. A direct comparison

Table A-3

Data From Two Schools

	Item Means		T-Scores	
Item	School A	School B	School A	School B
1	3.50	2.90	51	6
2	3.12	3.14	34	18
3	2.58	2.62	9	-9
4	3.81	2.97	65	9
5	3.54	3.50	53	37
6	3.50	3.57	51	41
7	3.73	3.15	62	19
8	3.38	3.00	46	11
9	4.31	3.93	88	60
10	3.00	2.73	29	-3
11	3.42	3.38	48	31
12	3.46	3.46	49	35
N	26	30		
$\overline{X}$	3.48	3.74		
$SE_{\overline{x}}$	.22	.19		

of the item means suggests that the problem of Item 2—*The number of students who don't like going to school and don't do their school work*—is about the same in both schools. The T-scores, however, indicate that such students are rather more of a problem in School B. Similarly, Item 5—*Capable students who feel that going to school is pretty much a waste of time*—would appear from the item means to be, if anything, a greater problem in School A, whereas the T-scores show it to be a rather greater problem in School B. And Item 12—*Teachers who won't admit making mistakes or think there is only one right answer to every question*—gets the same mean score in both schools, although it is clearly more of a problem in School B.

Our experience shows that student responses are almost uniformly the less favorable, that is, have lower overall means. Therefore, T-scores are probably, without exception, indispensable to detecting differences between staff and student responses to identical items in their questionnaires.

6. *Fill out the form, Summary of Staff and Student Responses (Figure A-2), finding mean scores for each section of the questionnaire.*

As noted earlier, each section of the questionnaire deals with a different aspect of the school. The *mean T-score* of the items in each of these sets gives some indication of the aspect of the school which is most salient in the eyes of the teachers, or of the students, as a source of problems or of satisfaction.

A form (Figure A-3) has also been provided for plotting the profile of a school as seen by teachers and as seen by students. This is a convenient way to visualize high points, low points, and differences between the staff and student perceptions. Data from one school in the pilot study have been transcribed onto the summary form (Figure A-2) and plotted on the profile form (Figure A-3) as an example. Mean T-scores larger than 100 or less than 0 can be plotted as 100 and 0, respectively, without seriously affecting the profile.

School Problem Area Surveys:
Sample Summary of Staff and Student Responses

School 50 Date 3 June, 1974

Staff		Student 9th grade		Staff		Student		Staff		Student	
Item	T	Item	T	Item	T	Item	T	Item	T	Item	T
		1	29	25	118			51	41		
		2	63	26	68			52	58		
		3	29	27	108			53	26	41	78
		4	33	28	97			54	30		
		5	57	29	89			55	41		
		6	30	30	103			56	58		
		SA 6	40.2	PT 6	96.9			57	53		
1	42	7	68	31	59	28	93	58	99	42	55
2	-2	8	37	32	2.1	29	57	59	64		
3	57	9	46	33	-3			CP 9	52.1	CP 2	66.6
4	26	10	30	34	24			60	3	43	72
5	77	11	34	35	42			61	57	44	45
6	71	12	62	36	48			62	59	45	74
SS 6	29.4	SS 6	46.0	SC 6	31.9	SC 2	75.0	63	14		
7	56	13	57	37	-24			64	10		
8	21	14	17	38	23	30	45	65	30	46	56
9	72	15	38	39	0	31	27	66	47	47	98
10	94	16	36	40	0	32	47	AP 7	31.4	AP 5	69.1
11	100	17	38	41	35	33	68	67	89	48	78
12	92	18	20	42	24	34	53	68	80	49	86
TS 6	72.6	TS 6	34.4	43	14	35	38	FP 2	84.3	FP 2	81.7
13	94	19	82	44	29	36	44	69	52		
14	76			45	55	37	66	70	29		
15	68			46	64			TP 2	40.4		
16	66	20	68	47	82			SUMMARY OF MEAN Ts			
17	86			48	16	38	52	Staff		Students	
18	117			49	-27	39	51			SA	40.2
		21	-6	50	13	40	46	SS	29.4	SS	46.0
TT 6	84.4	TT 3	48.2	SP 14	21.8	SP 11	48.8	TS	72.6	TS	34.4
19	114	22	77					TT	84.4	TT	48.2
20	91	23	43					PS	63.8	PS	42.9
21	60							PT	96.9		
		24	26					SC	31.9	SC	75.0
22	29							SP	21.8	SP	48.8
23	63	25	19					CP	52.1	CP	66.6
24	25	26	37					AP	31.4	AP	69.1
		27	56					FP	84.3	FP	81.7
PS 6	63.8	PS 6	42.9					TP	40.4		

Figure A-2

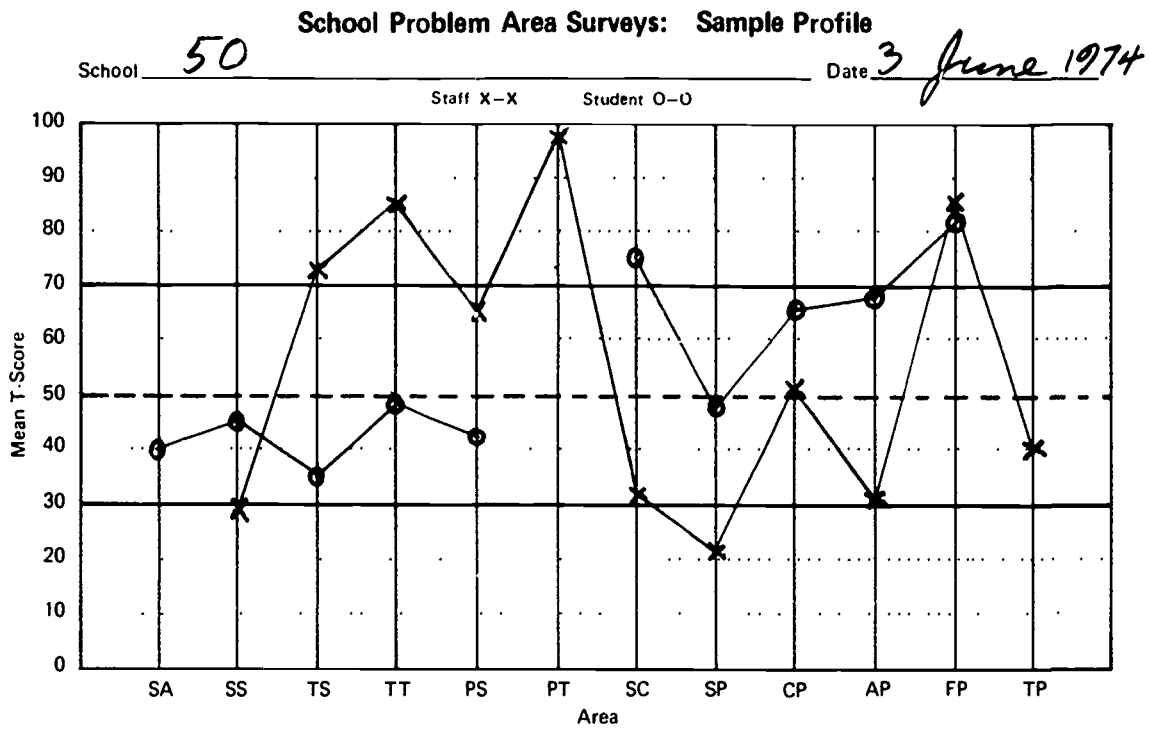
School Problem Area Surveys: Sample Profile
School 50
Date 3 June 1974
Staff X–X
Student O–O
Mean T-Score
100
90
80
70
60
50
40
30
20
10
0
SA
SS
TS
TT
PS
PT
SC
SP
CP
AP
FP
TP
Area

Figure A-3

Appendix B-1

NOTES ON PUNCHING CARDS AND RUNNING PROGRAM FOR ANALYSIS OF STAFF AND STUDENT DATA

Running the Staff or Student Tab Programs

Both programs are written in FORTRAN IV. The data pack for either program consists of the appropriate cards, one per questionnaire (respondent), preceded by one special card. The special card has the school identifying number in columns one and two. It also has the total number of questionnaire cards (respondents) in columns three through five. The name of the school, if wanted in the output, can be listed in columns 6 through 25 of the special card.

Keypunching Staff Questionnaires for Input to the Staff Tab and Statistical Program

The cards used as input to this program are read by means of the following FORTRAN format statement:

FØRMAT(I2, I3,(1X,18I1), 1X,14I1,1X,9I1,1X,11I1)

A data card punched according to this format is shown in Figure B-1. The five-digit number in columns 1-5 is an identifier. The first two digits identify the school; the next three digits identify the individual questionnaire. Responses are grouped on the card as are the questions on the questionnaire.

Sample Punched Card: Staff Questionnaire

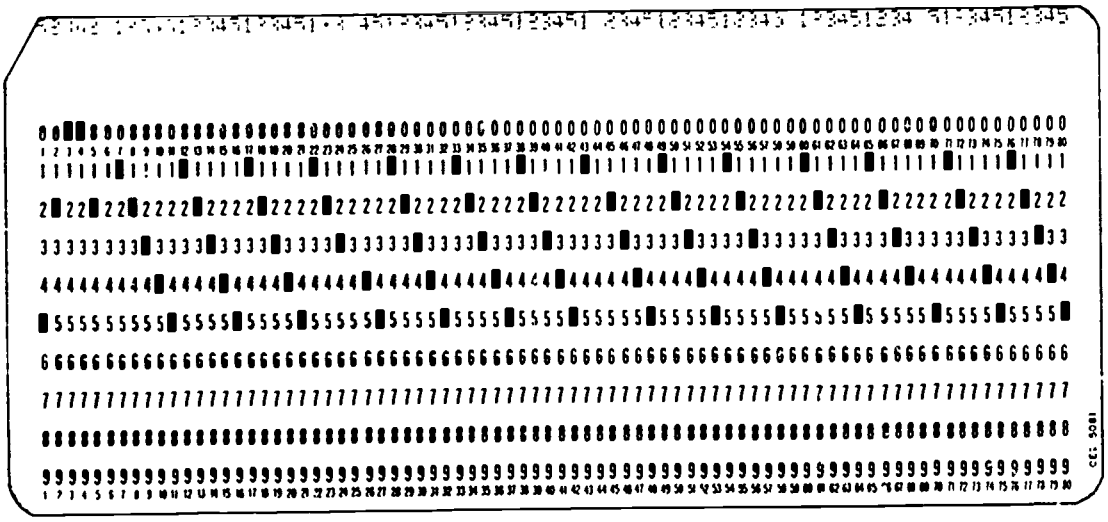

Figure B-1

Responses are punched as the number in the *leftmost* box marked by the respondent. The boxes are numbered from 1 to 6 starting from the left.[1] If there is no response, a digit outside this range should be punched.

With the use of a "set-up" card, a staff questionnaire can be keypunched in about 60 seconds.

Keypunching Student Questionnaires for Input to the Student Tab and Statistical Program

The cards used as input to this program are read by means of the following FORTRAN format statement:

FØRMAT(I2,I3,IX,20I1,1X,9I,1X,11I1,1X,2I1,1X,5I1,1X,2I1)

A data card punched according to this format is shown in Figure B-2. The five-digit number in columns 1-5 is an identifier. The first two digits identify the school, the next three digits identify the individual questionnaire. Responses are grouped on the card as are the questions on the questionnaire.

Sample Punched Card: Student Questionnaire

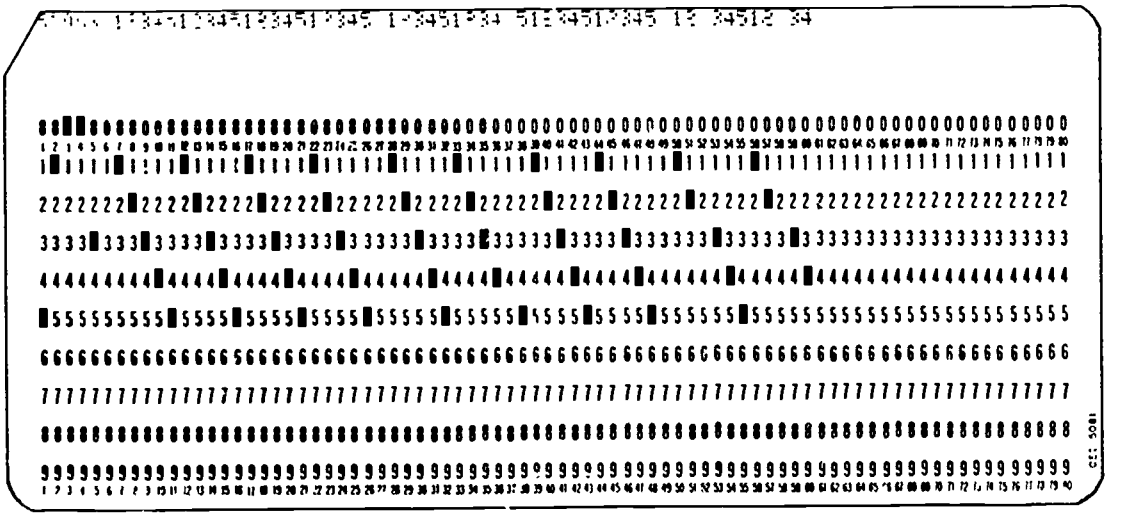

Figure B-2

Responses are punched as the number in the *leftmost* box marked by the student. The boxes are numbered from 1 to 6 starting from the left. If there is no response, a digit outside this range should be punched.

With the use of a "set-up" card, a student questionnaire can be keypunched in about 40 seconds.

[1] The value "6" for "exceptionally good" responses is converted by the computer program to a value of "5" for computing means and standard errors. A simple frequency count of "exceptionally good" responses is obtained for each questionnaire item and appears in the computer printout.

Appendix B-2

FORTRAN PROGRAMS FOR ANALYZING DATA FROM STAFF AND STUDENT QUESTIONNAIRES

Each program is followed by a specimen printout of data.

Sample Program: Staff Data

```
      C STAFF TAB AND STATISTICAL PROGRAM
 1          DIMENSION NMSCHL(5),ITAB(70,7),NR(70),ITSUM(7),INTS(3),SM(5),
           1QA(70,2),KSM(2),NGP(12),TMN(12)
 2          DATA NGP/0,6,6,6,6,6,6,14,9,7,2,2/
 3       101  FORMAT(1H1)
 4       150  FORMAT(I2,I3,2(1X,18I1),1X,14I1,1X,9I1,1X,11I1)
 5       200  FORMAT(5X,2HQ#,4X,40H EXT PROB CONSRBLE MODERATE LITTLE
           150H    NO PROB  EXC GOOD   NO ANS         MEAN          T )
 6       300  FORMAT(1H1,5A4)
 7       400  FORMAT(5X,10HSCHL  ID # ,I2,5X,11H# OF STAFF ,I3)
 8       500  FORMAT(1X)
 9       600  FORMAT(1H0,6HTOTALS,1X,7I10,1F10.2,1F10.3)
10       700  FORMAT(1X,I6,1H.,7I10,1F12.2,1F10.0)
11       900  FORMAT(5X,5HSIGMA,1F10.2)
12            READ(5,100)NSCHL,NKARD,NMSCHL
13       100  FORMAT(I2,I3,5A4)
      C FIRST INITIALIZE ARRAY & CARD COUNTER
14            DO 11 I=1,70
15            DO 10 J=1,7
16            ITAB(I,J)=0
17        10  CONTINUE
18        11  CONTINUE
19            KARD =0
      C INPUT AND TABULATE RESPONSES
20         1  READ (5,150)NS,NPUP,(NR(I),I=1,70)
21            DO 12 I=1,70
22            IF (NR(I).EQ.0.OR.NR(I).GT.6)NR(I)=7
23            ICOL=NR(I)
24            ITAB(I,ICOL)=ITAB(I,ICOL)+1
25        12  CONTINUE
26            KARD=KARD+1
27            IF(KARD.LT.NKARD)GO TO 1
      C CALC TABSUMS
28            DO 21 J=1,7
29            ITSUM(J)=0
30        21  CONTINUE
```

(Continued)

ERRATA[1]

Type of Error	Statement Number	Correct Version
		Sample Program: Staff Data (page 60)
spacing, typing	5	200 FORMAT(5X,2HQ#,4X,40H EXT PROB CONSRBLE MODERATE LITTLE, 150H NO PROB EXC GOOD NO ANS MEAN T)
typing	12	READ(5,100)NSCHL,NKARD,NMSCHL
typing	22	IF (NR(I).EQ.0.OR.NR(I).GT.6)NR(I)=7
typing	51	SIGG=SQRT((SM(3)–(SM(2)**2)/SM(1))/(SM(1)–1.)) C CALC MEAN,SIGMA, T FOR EACH QUESTION
typing	70	IF=II+NGP(J)–1
typing	71	TMN(J)=AVGT(II,IF,QA)
spacing	89	1100 FORMAT(55H0 SA SS TS TT PS PT SC SP, 128H CP AP FP TP)
		Sample Program: Student Data (page 64)
typing	1	DIMENSION NMSCHL(5),ITAB(49,7),NR(49),ITSUM(7),INTS(3),SM(5), 1QA(49,2),KSM(2),NGP(12),TMN(12)
typing	3	150 FORMAT(I2,I3,1X,20I1,1X,9I1,1X,11I1,1X,2I1,1X,5I1,1X,2I1)
spacing	4	200 FORMAT(5X,2HQ#,4X,40H EXT PROB CONSRBLE MODERATE LITTLE, 150H NO PROB EXC GOOD NO ANS MEAN T)
typing	22	ICOL=NR(I)
indention	[34]	22 CONTINUE *(Statement 34 is repeated for Indention Guidance)*
	35-41	C CALC INTERMEDIATE SUMS
		DO 31 I=1,3 *(35)*
		INTS(I)=0 *(36)*
		31 CONTINUE *(37)*
		DO 32 J=1,5 *(38)*
		INTS(1)=INTS(1)+ITSUM(J) *(39)*
		INTS(2)=INTS(2)+J*ITSUM(J) *(40)*
		INTS(3)=INTS(3)+(J**2)*ITSUM(J) *(41)*
typing	64	QA(I,2)=50.+10.*(QA(I,1)–RMEAN)*SQRT(SM(4))/SIGG
spacing, typing	89	1100 FORMAT(55H0 SA SS TS TT PS PT SC SP, 128H CP AP FP TP)

[1] These errata are printed on gummed paper and can be cut out and glued over the original statements, if desired.

```
31          DO 22 J=1,7
32          DO 23 I=1,70
33          ITSUM(J)=ITSUM(J)+ITAB(I,J)
34       23 CONTINUE
35       22 CONTINUE
      C  CALC INTERMEDIATE SUMS
36          DO 31 I=1,3
37          INTS(I)=0
38       31 CONTINUE
39          DO 32 J=1,5
40          INTS(1)=INTS(1)+ITSUM(J)
41          INTS(2)=INTS(2)+J*ITSUM(J)
42          INTS(3)=INTS(3)+(J**2)*ITSUM(J)
43       32 CONTINUE
44          INTS(1)=INTS(1)+ITSUM(6)
45          INTS(2)=INTS(2)+5*ITSUM(6)
46          INTS(3)=INTS(3)+25*ITSUM(6)
47          DO 33 I=1,3
48          SM(I)=INTS(I)
49       33 CONTINUE
      C  CALC MEAN & SIGMA FOR EACH GROUP
50          RMEAN=SM(2)/SM(1)
51          SIGG=SQRT((SM(3)-(SM(2)**2)/SM(1)/(SM(1)-1.))
      C  CALC MEAN, SIGMA, T FOR EACH QUESTION
52          DO 51 I=1,70
53          DO 52 K=1,2
54          KSM(K)=0
55       52 CONTINUE
56          DO 53 K=1,5
57          KSM(1)=KSM(1)+ITAB(I,K)
58          KSM(2)=KSM(2)+K*ITAB(I,K)
59       53 CONTINUE
60          KSM(1)=KSM(1)+ITAB(I,6)
61          KSM(2)=KSM(2)+5*ITAB(I,6)
62          SM(4)=KSM(1)
63          SM(5)=KSM(2)
64          QA(I,1)=SM(5)/SM(4)
65          QA(I,2)=50.+10.*(QA(I,1)-RMEAN)*SQRT(SM(4))/SIGG
66       51 CONTINUE
      C     CALCULATE GROUP MEANS
67          IF=0
68          DO 905 J=1,12
69          II=IF+1
70          IF=II+NGF(J)-1
71          IMN(J)=AVGT(II,IF,QA)
72       905 CONTINUE
73          TMN(1)=100000.
      C  PRINT OUTPUT
74          WRITE(6,300)NMSCHL
75          WRITE(6,400)NSCHL,KARD
```

(Continued)

```
76          WRITE(6,200)
77          WRITE(6,500)
78          DO 61 I=1,70
79          WRITE(6,700)I,(ITAB(I,J),J=1,7),(QA(I,K),K=1,2)
80          IF(I.EQ.6.OR.I.EQ.12.OR.I.EQ.18.OR.I.EQ.24.OR.I.EQ.30.OR.I.EQ.36)
           1WRITE(6,500)
81          IF(I.EQ.50)WRITE(6,101)
82          IF(I.EQ.59.OR.I.EQ.66.OR.I.EQ.68)WRITE(6,500)
83       61 CONTINUE
84          WRITE(6,600)(ITSUM(I),I=1,7),RMEAN
85          WRITE(6,900)SIGG
    C       PRINT GROUP MEANS
86          WRITE(6,1100)
87          WRITE(6,1000)TMN
88     1000 FORMAT(1H0,12F7.1)
89     1100 FORMAT(55H0      SA      SS      TS      TT      PS      PT      SC      SP,
           128H      CP      AP      FP      TP)
90          STOP
91          END

92          FUNCTION AVGT(II,IF,QA)
93          DIMENSION QA(70,2)
94          SUMT=0.
95          DEN=IF-II+1
96          IF(DEN.GT.0.)GO TO 934
97          AVGT=0.
98          RETURN
99       934 DO 935 I=II,IF
100         SUMT=SUMT+QA(I,2)
101      935 CONTINUE
102         AVGT=SUMT/DEN
103         RETURN
104         END
```

Sample Printout: Staff Data

AGUAJITO JR HIGH
SCHL ID # 45 # OF STAFF 58

Q#	EXT PROB	CONSRBLE	MODERATE	LITTLE	NO PROB	EXC GOOD	NO ANS	MEAN	T
1.	0	12	28	14	4	0	0	3.17	28.
2.	0	15	30	10	2	0	1	2.98	16.
3.	11	26	12	8	1	0	0	2.34	-26.
4.	5	21	20	9	3	0	0	2.72	-1.
5	6	16	23	9	2	2	0	2.81	4.
6	1	5	20	28	4	0	0	3.50	50.
7.	0	1	16	18	17	2	4	4.02	83.
8.	0	12	12	22	8	4	0	3.59	56.
9.	0	5	17	27	6	3	0	3.69	62.
10.	1	4	11	28	11	2	1	3.84	72.
11.	2	1	16	24	12	2	1	3.82	71.
12.	0	2	23	22	7	3	1	3.70	63.
13.	0	3	13	30	6	4	2	3.84	72.
14.	2	3	18	22	7	4	2	3.66	60.
15.	2	9	13	23	9	1	1	3.53	52.
16.	0	7	15	22	12	1	1	3.72	64.
17.	0	4	16	22	12	3	1	3.84	72.
18.	0	4	8	17	20	8	1	4.21	96.
19.	0	0	5	20	18	14	1	4.47	113.
20.	4	2	8	21	17	5	1	3.96	80.
21.	8	8	16	15	7	2	2	3.16	28.
22.	9	15	14	11	7	1	1	2.89	10.
23.	1	5	15	17	15	4	1	3.84	72.
24.	5	13	15	11	10	1	3	3.18	29.
25.	0	1	8	15	20	14	0	4.41	110.
26.	2	5	16	19	14	1	1	3.70	63.
27.	1	9	12	17	10	8	1	3.74	65.
28.	0	3	10	14	25	5	1	4.25	99.
29.	3	6	9	9	17	5	9	3.84	70.
30.	1	3	3	16	18	9	8	4.30	99.
31.	0	3	21	21	10	2	1	3.74	65.
32.	1	10	14	10	9	13	1	3.74	65.
33.	1	5	8	8	28	7	1	4.25	99.
34.	0	8	7	17	20	3	3	4.00	82.
35.	3	11	11	18	10	2	3	3.45	47.
36.	3	15	15	14	8	1	2	3.20	30.
37.	4	11	21	16	5	0	1	3.12	25.
38.	3	15	18	17	4	0	1	3.07	22.
39.	19	19	16	4	0	0	0	2.09	-43.
40.	12	17	20	8	0	0	1	2.42	-21.
41.	2	4	21	25	2	0	4	3.39	43.
42.	6	13	24	13	2	0	0	2.86	8.
43.	7	13	27	10	1	0	0	2.74	-0.
44.	7	16	19	11	1	0	4	2.69	-2.
45.	2	9	21	17	3	0	6	3.19	31.
46.	0	3	17	21	5	0	12	3.61	56.
47.	1	2	7	33	8	2	5	3.92	77.
48.	2	3	20	27	2	0	4	3.44	46.
49.	7	18	18	10	4	0	1	2.75	1.
50.	2	10	22	19	4	0	1	3.23	32.
51.	0	4	12	22	17	0	3	3.95	78.
52.	0	3	6	16	29	0	4	4.31	102.
53.	4	13	28	11	0	0	2	2.82	6.
54.	0	2	13	29	13	0	1	3.93	78.
55.	1	0	11	24	16	4	2	4.11	89.
56.	1	5	5	20	23	1	3	4.11	89.
57.	3	2	6	22	21	2	2	4.07	87.
58.	9	18	21	7	2	0	1	2.56	-12.
59.	1	13	17	10	10	0	7	3.29	37.
60.	7	16	20	11	2	1	1	2.77	2.
61.	2	2	1	11	29	9	4	4.50	113.
62.	1	5	17	17	13	2	3	3.73	64.
63.	7	16	14	11	5	2	3	2.91	12.
64.	10	19	12	11	3	0	3	2.60	-8.
65.	0	11	12	10	12	1	2	3.09	23.
66.	7	11	12	13	11	1	3	3.22	32.
67.	0	2	5	18	23	1	9	4.31	99.
68.	0	1	8	27	16	2	4	4.15	91.
69.	0	2	9	9	21	10	7	4.35	103.
70.	2	10	20	10	4	4	8	3.24	34.
TOTALS	211	580	1038	1168	717	178	168	3.50	
SIGMA	1.15								

SA	SS	TS	TT	PS	PT	SC	SP	CP	AP	FP	TP
******	11.8	67.8	69.4	55.6	84.3	64.7	19.6	61.6	34.1	94.9	68.3

CORE USAGE OBJECT CODE= 5160 BYTES,ARRAY AREA= 2988 BYTES,TOTAL AREA AVAILABLE= 8288 BYTES

COMPILE TIME= 0.36 SEC,EXECUTION TIME= 3.22 SEC, WATFIV - VERSION 1 LEVEL 2 AUGUST 1970

Sample Program: Student Data

```
      C  STUDENT TAB AND STATISTICAL PROGRAM
    1       DIMENSION NMSCHL(5),ITAB(49,7),NR(49),ITSUM(7),INTS(3),SM(5),
           1QA(  ),KSM(2),NGP(12),NGP(12),TMN(12)
    2       DATA NGP/6,6,6,3,6,0,2,11,2,5,2,0/
    3     150 FORMAT(12,I3,1X,20I1,1X,9I1,1X,11I1,1X,2I1,1X,5I1,1X,2I1)
    4     200 FORMAT(5X,2HQ#,4X,40H EXT PROB CONSRBLE MODERATE  LITTLE,
           150H    NO PROB   EXC GOOD   NO ANS   MEAN     T)
    5     300 FORMAT(1H1,5A4)
    6     400 FORMAT(5X,10HSCHL  ID # ,I2,5X,14H# OF STUDENTS ,I3)
    7     500 FORMAT(1X)
    8     600 FORMAT(1HO,6HTOTALS,1X,7I10,1F10.2,1F10.3)
    9     700 FORMAT(1X,I6,1H.,7I10,1F12.2,1F10.0)
   10     900 FORMAT(5X,5HSIGMA,1F10.2)
   11       READ(5,100)NSCHL,NKARD,NMSCHL
   12     100 FORMAT(I2,I3,5A4)
      C  FIRST INITIALIZE ARRAY & CARD COUNTER
   13       DO 11 I=1,49
   14       DO 10 J=1,7
   15       ITAB(I,J)=0
   16      10 CONTINUE
   17      11 CONTINUE
   18       KARD =0
      C  INPUT AND TABULATE RESPONSES
   19       1 READ(5,150)NS,NPUP,(NR(I),I=1,49)
   20       DO 12 I=1,49
   21       IF(NR(I).EQ.0.OR.NR(I).GT.6)NR(I)=7
   22       ICCL=NR(I)
   23       ITAB(I,ICOL)=ITAB(I,ICOL)+1
   24      12 CONTINUE
   25       KARD=KARD+1
   26       IF(KARD.LT.NKARD)GO TO 1
      C CALC TABSUMS
   27       DO 21 J=1,7
   28       ITSUM(J)=0
   29      21 CONTINUE
   30       DO 22 J=1,7
   31       DO 23 I=1,49
   32       ITSUM(J)=ITSUM(J)+ITAB(I,J)
   33      23 CONTINUE
   34      22 CONTINUE
      C  C  LC  INTERMEDIATE SUMS
   35      DO 31 I=1,3
   36      INTS(I)=0
   37     31 CONTINUE
   38      DO 32 J=1,5
   39      INTS(1)=INTS(1)+ITSUM(J)
   40      INTS(2)=INTS(2)+J*ITSUM(J)
   41      INTS(3)=INTS(3)+J**2)*ITSUM(J)
```

(Continued)

```
42          32 CONTINUE
43             INTS(1)=INTS(1)+ITSUM(6)
44             INTS(2)=INTS(2)+5*ITSUM(6)
45             INTS(3)=INTS(3)+25*ITSUM(6)
46             DO 33 I=1,3
47             SM(I)=INTS(I)
48          33 CONTINUE
      C  CALC MEAN & SIGMA FOR EACH GROUP
49             RMEAN=SM(2)/SM(1)
50             SIGG=SQRT((SM(3)-(SM(2)**2)/SM(1))/(SM(1)-1.))
      C  CALC MEAN, SIGMA, T FOR EACH QUESTION
51             DO 51 I=1,49
52             DO 52 K=1,2
53             KSM(K)=0
54          52 CONTINUE
55             DO 53 K=1,5
56             KSM(1)=KSM(1)+ITAB(I,K)
57             KSM(2)=KSM(2)+K*ITAB(I,K)
58          53 CONTINUE
59             KSM(1)=KSM(1)+ITAB(I,6)
60             KSM(2)=KSM(2)+5*ITAB(I,6)
61             SM(4)=KSM(1)
62             SM(5)=KSM(2)
63             QA(I,1)=SM(5)/SM(4)
64             QA(1,2)=50.+10.*(QA(I,1)-RMEAN)*SQRT(SM(4))/SIGG
65          51 CONTINUE
      C        CALCULATE GROUP MEANS
66             IF=0.
67             DO 905 J=1,12
68             II=IF+1
69             IF=II+NGP(J)-1
70             TMN(J)=AVGT(II,IF,QA)
71          905 CONTINUE
72             TMN(6)=100000.
73             TMN(12)=100000.
      C  PRINT OUTPUT
74             WRITE(6,300)NMSCHL
75             WRITE(6,400)NSCHL,KARD
76             WRITE(6,200)
77             WRITE(6,500)
78             DO 61 I=1,49
79             WRITE(6,700)I,(ITAB(I,J),J=1,7),(QA(I,K),K=1,2)
80             IF(I.EQ.6.OR.I.EQ.12.OR.I.EQ.18.OR.I.EQ.21)WRITE(6,500)
81             IF(I.EQ.27.OR.I.EQ.29.OR.I.EQ.40.OR.I.EQ.42)WRITE(6,500)
82             IF(I.EQ.47)WRITE(6,500)
83          61 CONTINUE
84             WRITE(6,600)(ITSUM(I),I=1,7),RMEAN
85             WRITE(6,900)SIGG
      C        PRINT GROUP MEANS
86             WRITE(6,1100)
```

(Continued)

```
87          WRITE(6,1000)TMN
88       1000 FORMAT(1H0,12F7.1)
89       1100 FORMAT(55H0   SA      SS      TS      TT      PS      PT      SC      SP
            128H      CP      AP      FP      TP)
90          STOP
91          END

92          FUNCTION AVGT(II,IF,QA)
93          DIMENSION QA(49,2)
94          SUMT=0.
95          DEN=IF-II+1
96          IF(DEN.GT.0.)GO TO 934
97          AVGT=0.
98          RETURN
99        934 DO 935 I=II,IF
100         SUMT=SUMT+QA(I,2)
101       935 CONTINUE
102         AVGT=SUMT/DEN
103         RETURN
104         END
```

Sample Printout: Student Data

PALO COLORADO SCHOOL
SCHL ID # 36 # OF STUDENTS 49

Q#	EXT PROB	CONSRBLE	MODERATE	LITTLE	NO PROB	EXC GOOD	NO ANS	MEAN	T
1.	2	3	10	19	10	4	0	3.83	65.
2.	7	5	14	14	9	6	0	3.48	47.
3.	3	9	11	14	8	3	0	3.44	44.
4.	6	7	9	22	4	0	0	3.23	34.
5.	3	2	5	9	22	7	0	4.23	86.
6.	1	7	7	17	10	6	0	3.83	65.
7.	2	5	10	12	9	10	0	3.85	66.
8.	4	9	15	11	5	4	1	3.28	36.
9.	2	2	11	21	9	3	0	3.81	64.
10.	4	6	10	19	9	1	0	3.48	47.
11.	5	9	12	18	1	3	0	3.15	29.
12.	4	3	9	24	5	2	1	3.57	52.
13.	0	14	7	15	8	3	1	3.49	47.
14.	5	13	9	13	3	4	1	3.09	26.
15.	7	2	10	13	14	1	1	3.57	52.
16.	4	8	10	14	8	3	1	3.43	44.
17.	3	7	8	15	9	5	1	3.64	55.
18.	4	8	4	12	16	3	1	3.72	59.
19.	3	1	1	11	21	10	1	4.40	94.
20.	3	5	7	9	15	8	1	3.94	70.
21.	13	9	10	2	4	2	1	2.70	7.
22.	1	2	3	7	13	21	1	4.51	100.
23.	3	6	13	12	9	3	2	3.52	49.
24.	4	4	11	17	7	2	3	3.51	48.
25.	7	7	14	13	5	2	0	3.13	28.
26.	2	7	11	10	15	3	0	3.73	60.
27.	1	7	11	19	8	2	0	3.63	54.
28.	2	6	5	11	18	6	0	4.02	75.
29.	8	4	4	15	11	6	0	3.60	53.
30.	10	3	15	12	1	1	1	2.74	9.
31.	12	12	3	10	3	1	1	2.57	-0.
32.	6	6	19	12	4	1	1	3.09	26.
33.	6	5	7	13	9	9	2	3.63	54.
34.	10	7	13	8	5	6	2	3.07	26.
35.	13	10	7	11	5	1	1	2.72	8.
36.	6	4	8	8	13	8	1	3.72	59.
37.	6	5	8	9	9	7	4	3.55	50.
38.	8	7	9	12	7	3	2	3.20	32.
39.	11	10	8	15	4	4	1	2.87	15.
40.	9	9	14	13	8	2	3	3.47	46.
41.	4	3	7	11	12	9	2	3.91	69.
42.	7	5	8	17	3	7	2	3.43	44.
43.	2	5	12	8	11	9	1	3.83	65.
44.	4	3	7	14	10	9	1	3.87	67.
45.	4	6	2	10	17	7	2	3.96	71.
46.	7	6	5	11	14	4	1	3.57	52.
47.	5	5	2	15	12	8	1	3.85	66.
48.	4	4	5	11	15	7	2	3.93	70.
49.	5	4	6	10	16	4	3	3.80	63.
TOTALS	247	297	418	637	462	240	91	3.54	
SIGMA	1.32								

SA	SS	TS	TT	PS	PT	SC	SP	CP	AP	FP	TP
56.8	49.0	47.2	57.1	56.6	******	64.1	29.6	56.7	64.1	66.5	******

CORE USAGE OBJECT CODE= 5120 BYTES, ARRAY AREA= 2148 BYTES, TOTAL AREA AVAILABLE= 8288 BYTES
COMPILE TIME= 0.33 SEC, EXECUTION TIME= 2.17 SEC, WATFIV - VERSION 1 LEVEL 2 AUGUST 1970

Appendix C

NOTES ON DEVELOPMENT OF THE INSTRUMENTS

The Questionnaires

The questionnaires were constructed from a pool of 300 general items for staff and 200 general items for students. Since we were concerned with *screening* for problems, we were interested in items that could be expected to have generality across schools. While a pool containing many more specific items could have been developed, their level of detail and questionable generality across many schools would have made them of doubtful utility.

The preliminary questionnaires used in the main pilot study were scored by computing the percentage giving favorable responses and the percentage giving unfavorable responses to each item. In the final form of the questionnaires, scores are computed by weighting responses on a scale from 1 to 5 and obtaining item means. While mean values are more efficient and use more of the information, we found them to be highly related ($r = .98$) to percentage scores.

The items were tested in one major and several minor pilot studies. Written (and in some schools, verbal) comments provided by respondents were useful in identifying ambiguous items or items that attempted to elicit information not typically available to the respondents. Highly correlated items were identified by standard correlational techniques and redundant items were eliminated.

Conversion of item means to T-scores helped identify items that were consistently high or low in most schools, since the conversion eliminates the variations in the *general* level of response found in data from different schools. Items that elicit strong consensus across schools suggest stereotype reactions which may have little utility for diagnostic purposes. For example, *The teachers usually try to relate to their students in a positive and accepting manner* was significantly favorable in 24 out of 33 schools. At the other extreme, another item, *Non-teaching activities take up an excessive amount of the teachers' time*, was significantly unfavorable in 17 of the 33 schools.

To explore this problem further, we combined the data of 33 schools, treating all responses as though they had come from one huge school. We then found an overall T-score for each item. However, because of a considerable discrepancy in numbers of respondents from school to school, overall T-scores are not directly comparable to the T-scores found in individual schools. To make them comparable, we computed the expected T-score for each item in each school. Expected T-scores are based on the overall item scores but use the number of respondents appropriate to each school in computing the Standard Error. They show, in effect, for each school, what the T-scores would be in an average school of the same size. Differences between observed and expected T-scores show how much the school deviates from the average school in respect to each item. Such differences are independent of both the overall score (the response level) in each school and of the overall score (the response level) of each item.

The comparisons between observed and expected T-scores were informative. For example, the first item mentioned above, *The teachers usually try to relate to their students in a positive and accepting manner* (which was significantly favorable in 24 out of 33 schools), showed little deviation from the expected values in any school. Although the response to the item was uniformly favorable, it was at the same relative level in all

schools. Clearly, the item is a cliché. It elicits a uniformly favorable stereotype in all schools, but it does not discriminate among schools. While it may represent a strength in all schools, it is apparently not a strength unique to any one school or set of schools. However, the second item mentioned above, *Non-teaching activities take up an excessive amount of the teachers' time* (which was significantly unfavorable in 17 out of 33 schools), differed considerably from expectation in 11 schools, unfavorably in 5 and favorably in 6. While this second item elicits an unfavorable stereotype in most schools, it does discriminate among schools. An apparently unfavorable response made in a given school may, in fact, be favorable when it is compared to the response made in the average school.

Based upon this analysis, items that clearly reflected no discrimination among schools were eliminated.

Implications of the Analysis of Observed and Expected T-scores. The term "average," in the analysis of Observed vs. Expected T-scores, refers to the schools in our sample. Our data cannot be generalized beyond our specific sample because we did not employ a definable random sample of schools, but rather, a sample of convenience, based upon the availability of research staff members in three geographic locations across the country, who established access to junior high schools for data collection. We do believe, however, that data from a truly random sample of junior high schools would not differ substantially from what we now have.

While Observed T-scores (for the various questionnaire items) are valid indicators of the relative intensity of response in a school, in planning programs or procedures to deal with problems in a school it would be useful to know how teachers or students in general react to a given item. Doing something to relieve teachers of some of the non-teaching demands on their time, for example, is likely to have a salutary effect in almost any school. The question is: Are there problems more nearly unique to this school that are more deserving of attention? Part of the answer lies in the differences between Observed and Expected T-scores.

Although general or national norms are not presently available for the questionnaires, unrestricted statistical generality is not wholly necessary for expected T's to have practical utility. We do have data available that suggest that reasonable evaluations can be made of responses in a school if data are available from other schools in the district. This evidence comes from part of our pilot work in which we collected questionnaire data in all 11 junior high schools in one large midwestern school district. Analysis of these data indicated that virtually the entire range of problems covered by the questionnaires appeared in the 11 schools in this one district.

Therefore, in the absence of national norms, we suggest that, whenever possible, all of the schools in a system be tested at about the same time. If the system is of fair size, Expected T-scores can be based on the pooled data from the whole system, and the problems relatively unique to each of the individual schools can be identified.

The Interview Form

Preliminary versions of the interview form were analyzed to identify nondiscriminating and redundant items. As an example of nondiscriminating items, one designed to determine whether a principal felt he was given enough autonomy, elicited only one negative response among 34 principals. Items of this sort, which yielded essentially no information, were eliminated.

To identify redundant items, we examined interrelationships among variables using conventional chi-square techniques. To do this, we first identified all items for which discrete categories were predefined for recording responses or which lent themselves to construction of discrete response categories following data collection. We then split each item at the median. For most variables, the approximate median provided a reasonable

division. In 17 of 34 schools, for example, less than 20% of the students were on a free lunch program, and in the other 17 more than 20% were. Only an approximate median could be established for some variables. For example, in 16 of these schools, all of the teachers were white, and in the remaining 18 schools there was at least one nonwhite teacher. While this is conveniently close to a median split, there is no assurance that all-white vs. not-all-white divides the variable in the most meaningful way. In all, 37 usable variables were identified and put into a fourfold table with each of the other 36 for analysis by chi square.[1]

The intercorrelations among these 37 variables revealed some clustering, though none of the intercorrelations was so high as to suggest that some of the variables might be redundant. One variable, *Structure*, which divided the schools into two classes, exclusively *Junior High* (or *Middle*) *Schools* with students in only 6, 7, 8, or 9th grades, and *Others*, where other grades were present, showed a clear pattern of relationship with many of the other variables. On the whole, dividing this set of schools into *Junior High Schools* and *Others* appears to divide their districts essentially into two sorts: affluent, surburban, and predominantly middle class vs. poor, urban, and not predominantly middle class. In general, the *Other* schools had the more problems, with more students on probation, more suspensions, more pregnancies, more disciplinary problems and the like. The exclusively *Junior High Schools*, however, were more often noncity schools, had higher per pupil expenditures, offered more services, and had lower or nonexistent drug abuse and veneral disease rates.

[1]These analyses were not undertaken as a formal study of relationships. With more variables than schools, such an intent would be statistically indefensible. The analyses, however, were of heuristic value in the early stage of development.

The first step in the problem-solving process is to become aware that problems exist. The second is to identify the problems with some degree of precision—both in terms of their "real-world" aspects and of the ways in which they are perceived by the individuals and groups involved.

This manual presents three easy-to-use instruments that school personnel and mental health consultants can use to conduct systematic explorations of those features of a school and its setting that may give rise to individual, group, and/or systemic problems. It also describes procedures to be used in analyzing and interpreting the data collected with these instruments.

Both the instruments and the procedures are simple to use. They proved to be useful, reliable, and valid, when the authors pilot-tested their new approach in 40 schools in six states.

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