To the Graduate Council:

I am submitting herewith a dissertation written by William Ralph Durham entitled "A Study of Teachers Involved in a Change Process." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration and Supervision.

Larry W. Hughes
Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Hilton A. Smith
Vice Chancellor
Graduate Studies and Research

A STUDY OF TEACHERS INVOLVED IN A CHANGE PROCESS

A Dissertation

Presented for the

Doctor of Education

Degree

The University of Tennessee

William Ralph Durham

June 1974

ACKNOWLEDGMENTS

To all who gave assistance and encouragement during the completion of this study, the writer is indebted and deeply grateful. Thanks are offered to the principals and faculties of the schools involved in this study.

Gratitude is expressed to the writer's doctoral committee--Dr. Jerry J. Bellon, Dr. William E. Cole, Dr. Dewey H. Stollar, and particularly to the chairman, Dr. Larry W. Hughes--who provided encouragement and much assistance throughout his doctoral program.

Appreciation is also expressed to Mr. George H. Barnes, Superintendent of the Shelby County Schools, for his understanding and support throughout the program.

To Dr. Marshall C. Perritt, Assistant Superintendent of Shelby County Schools, a very special thank you. It was his encouragement and assistance that helped to make this goal become a reality.

Finally, to my wife, Lafon, and daughter, Karen, a tremendous thank you for their encouragement, sacrifice, and faith throughout the doctoral program.

1146685

ABSTRACT

The problems experienced by teachers in open space schools are examined in this study. The study was directed toward two objectives: to identify major problem areas that plague teachers in open space schools and to suggest direction for school districts in planning in-service programs for teachers preparing to teach in open space education.

Data concerning the problems of teachers in open space schools were collected from eighteen schools in Tennessee during the month of May, 1973. The questionnaire contained twenty-five items that had been identified as problem areas by teachers in three pilot open space schools in the Memphis City School system. The respondents totaled 313 including nine administrators and the remaining were teachers of grades 1-8. Respondents were asked to indicate the degree to which they had experienced a specific problem in open space schools. Response categories were (1) a nonexperienced problem; (2) occasional problem; (3) minor problem; and (4) major problem. The questionnaire was developed by the researcher and consisted of demographic data plus twenty-five items identified as problem areas.

The responses on the questionnaire were analyzed and directed toward answering the following questions:

1. What are the perceived problem areas that adversely affect teacher effectiveness in open space schools?
2. Are there any significant differences between the way first year teachers in open space schools categorize problem areas from the more experienced teacher?
3. Are there any significant differences between the way secondary certificated teachers categorize the different problem areas than those certified in elementary?
4. Is there congruence in perceived problems between administrators of open space schools and teachers?
5. Are there any significant differences between the way teachers from the three geographic areas of Tennessee categorize the different problem areas?
6. Do the perceived problems seem to be one of the four general types identified as instructional, interpersonal, facilities or organizational?

The data revealed several conclusions for analysis by the reader. For example, the problem of student movement was considered an experienced problem by 90 percent of the respondents. In open space schools the development of an instructional program and student distraction were also experienced problems by a large percentage of the respondents. It was also found that when the data were studied by years of experience, more significant differences were found in the reactions of the respondents than in any other demographic area. It was also found that as the teacher gains experience in open space, he either adjusts to or resolves certain identified problems associated with open space education. The data revealed that areas of certification and the location of the school by geographic area had no significant bearing on the reactions of the respondents.

The reactions of the administrators and the teachers were analyzed, and it was found that there was incongruence between administrators and teachers both with regard to number of problems, intensity of some problems, and kinds of problems. For example, the administrators identified items regarding interpersonal relations to be more of a continuous problem than did the teachers. It was also revealed that both groups considered problems centered

on the physical plant to be more serious than other types of problems possibly because they were more visible.

The researcher presents two types of recommendations which resulted from the study: (1) recommendations for school districts to consider in their teacher preparation for open space education and (2) recommendations for further research in open space education.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
	The Problem	3
	Statement of the problem	3
	Questions to be answered in the study	4
	Importance of the study	5
	Limitations and delimitations of the study	6
	Assumptions of the Study	6
	Definitions of Terms	6
	Procedures	8
	Organization of the Study	9
II.	REVIEW OF RELATED LITERATURE AND RESEARCH	10
	The Open Space Concept	10
	Changing Role of the Teacher	12
	Student Outcomes in Open Space	17
	Improving Teacher Training	20
	Special Type of Teacher	22
III.	DESIGN AND METHODOLOGY OF THE STUDY	26
	Introduction	26
	The Sample	26
	Development of the Instrument	28

CHAPTER PAGE

Description of the Instrument 29

Data Gathering Procedures 31

Treatment and analysis of the data 33

Scoring Procedures 34

Summary 35

IV. PRESENTATION AND ANALYSIS OF THE DATA 36

The Demographic Data 38

Responses to the Study Questions 44

Ancillary Supportive Data 77

Cross-tabulations on items thirteen and fifteen 78

Cross-tabulations on items thirteen and seventeen 80

Cross-tabulations on items thirteen and twenty-four 82

Cross-tabulations on items thirteen and twenty-five 86

Cross-tabulations on items thirteen and twenty-six 88

Cross-tabulations on items thirteen and thirty-one 90

Cross-tabulations on items thirteen and thirty-four 92

CHAPTER PAGE

Cross-tabulations on items thirteen and thirty-seven 94

V. SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS 97

Introduction 97

Summary of the Study 97

Problem studied 97

Purpose of the study 98

Population of the study 98

Methodology and procedures 99

Description of the instrument 99

Administration of the instrument 99

Treatment of the data 100

Findings 100

Problem areas that adversely affect teacher effectiveness (question 1) . . . 101

High-intensity items 102

Low-intensity items 102

Responses of teachers with varying amounts of experience in open space schools (question 2). 103

Analysis of the responses of secondary certified teachers as compared with teachers certified in elementary (question 3) 104

CHAPTER PAGE

Congruence in perceived problems between administrators and teachers (question 4) 104
Responses of teachers from the three geographic areas of Tennessee (question 5) 106
General types of problems (question 6) . . 107
Recommendations 108
Recommendations for school districts . . . 108
High-intensity problem areas by all respondents 109
Low-intensity problem areas by all respondents 111
Recommendations for further research . . . 112
BIBLIOGRAPHY 113
APPENDIXES 117
Appendix A 118
Appendix B 120
Appendix C 122
VITA 124

LIST OF TABLES

TABLE		PAGE
I.	Participating Open Space Elementary Schools in Tennessee with School Systems and Grades Served 1973	27
II.	Individual Question Items Clustered by General Problem Areas	30
III.	Participating Open Space Schools by Recognized Geographic Divisions of Tennessee 1973 . . .	32
IV.	Frequency of Returns of Questionnaire by Schools	37
V.	Respondents Described by Areas of Certification	39
VI.	Respondents' Length of Total School Experience (Including Open Space)	40
VII.	Respondents' Years of Experience in Open Space Schools	42
VIII.	Dates Respondents Last Completed College Course or Attended a College or University	43
IX.	Respondents' Reactions to the Identified Problems	45
X.	Intensity of Reactions to Identified Problems .	46

TABLE PAGE

XI. Frequency of Responses to Item Seventeen Regarding Years of "Experience" in an Open Space School 49

XII. Frequency of Responses to Item Twenty-Five Regarding Years of "Experience" in an Open Space School 50

XIII. Frequency of Responses to Item Twenty-Eight Regarding Years of "Experience" in an Open Space School 52

XIV. Reactions of Respondents with One Year's Experience to Identified Problem Areas . . . 54

XV. Problem Intensity Identified by Respondents with One Year's Experience in Open Space Schools 55

XVI. Reactions of Respondents with Two Years Experience to Identified Problem Areas . . . 57

XVII. Problem Intensity Identified by Respondents with Two Years Experience in Open Space Schools 58

XVIII. Reactions of Respondents with Three or More Years Experience to Identified Problem Areas 59

TABLE		PAGE
XIX.	Problem Intensity Indicated by Respondents with Three or More Years in Open Space Schools	61
XX.	Administrator Perception of Problem Areas Most Likely to be Experienced by Teachers in Open Space Schools	63
XXI.	Teachers' Reactions to Items by Problem Areas	64
XXII.	Problem Intensity of Administrator Perception of Problem Areas Most Likely to be Experienced by Teachers in Open Space Schools	66
XXIII.	Problem Intensity Identified by All Teachers in Participating Open Space Schools	67
XXIV.	General Reactions to Problems in Open Space Schools in East Tennessee	69
XXV.	General Reactions to Problems in Open Space Schools in Middle Tennessee	70
XXVI.	General Reactions to Problems in Open Space Schools in West Tennessee	71
XXVII.	Problem Intensity Indicated by Respondents from East Tennessee	73
XXVIII.	Problem Intensity Indicated by Respondents from Middle Tennessee	74

TABLE PAGE

XXIX. Problem Intensity Indicated by Respondents from West Tennessee 75

XXX. Cross-Tabulation of Responses to Items "Thirteen" and "Fourteen" by Frequency 79

XXXI. Cross-Tabulation of Responses to Items "Thirteen" and "Fifteen" by Frequency 81

XXXII. Cross-Tabulation of Responses to Items "Thirteen" and "Seventeen" by Frequency 83

XXXIII. Cross-Tabulation of Responses to Items "Thirteen" and "Twenty-Four" by Frequency 85

XXVII. Cross-Tabulation of Responses to Items "Thirteen" and "Twenty-Five" by Frequency 87

XXXV. Cross-Tabulation of Responses to Items "Thirteen" and "Twenty-Six" by Frequency 89

XXXVI. Cross-Tabulation of Responses to Items "Thirteen" and "Thirty-One" by Frequency 91

TABLE PAGE

XXXVII. Cross-Tabulation of Responses to Items "Thirteen" and "Thirty-Four" by Frequency 93

XXXVIII. Cross-Tabulation of Responses to Items "Thirteen" and "Thirty-Seven" by Frequency 95

CHAPTER I

INTRODUCTION

One goal of American education is to provide learning experiences to enable each individual to develop to his highest potential. If the educational system is to do its job effectively, it must relate to the needs of the society which it serves. Society continues in a rapid state of change and as society changes, educational institutions must be adaptive.

As educators search for ways to meet the goal of education in a society of change, the concept of the open space school merits close examination. It is recognized, of course, that open space concept schools are merely tools--not ends in themselves.[1] Further, it should be emphasized that some research has indicated that an open space school does not necessarily mean that the teachers implement the open concept in the development of instructional strategies.[2]

---

[1] Open Space Schools, Report of the AASA Commission on Open Space Schools. American Association of School Administrators, 1971, p. 10.

[2] Arthur Coetzee, "A Study to Determine Whether Different Organizational Climates Exist in Differently Designed Schools," (unpublished Doctoral dissertation, The University of Tennessee, Knoxville, Tennessee, 1972), pp. 91-92.

During the late 1950's and early 1960's architects began designing open plan schools to save money on school construction costs. The elimination of interior walls and partitions and the substitution of movable furniture created a situation that challenged the creativity of curriculum planners. As a result, more and more schools began experimenting with new teaching concepts such as team teaching, individualized instruction, and nongraded classes which are all very adaptable to open plan schools.[3] The term open plan and open space are used interchangeably in this study. The open space school is described by Brunetti as being composed of larger areas than the traditional school, "lacking interior partitions in which the visual and acoustical separations between teaching stations and classroom areas is limited or eliminated."[4]

As school systems move into more innovative teaching situations, local school districts must accept the responsibility to provide in-service professional growth activities for the teachers involved. In many cases it seems that the blame for the problems and failure of innovations rests with

---

[3]The Open Plan School, Report of a National Seminar, Cosponsored by Educational Facilities Laboratories, Inc., and I.D.E.A., 1970, p. 8.

[4]Frank Brunetti, "Open Space: A Status Report," CEFP Journal, IX, No. 5 (September/October, 1971), p. 7.

the teachers and supervisors charged with the ultimate implementation.[5]

The assumption can be made that after a study of teacher attitudes and concerns regarding specific changes, a more effective program of planned change can be developed. The focus of this study is on the preparation and retraining of teachers moving from a traditional setting into an open space teaching situation and the subsequent development of an in-service program to meet these needs.

I. THE PROBLEM

Statement of the Problem

A key variable in the effectiveness of open space educational programming would be the teacher. To be more specific; are teachers prepared to meet the different demands of open space schools and effectively cope with problems involving instructional modes, changed organizational patterns, interpersonal relations, and the open facility itself?

Much direction may be needed to aid districts in teacher retraining and in helping the teacher function more effectively in an open space setting. This study was

---

[5]Coetzee, pp. 131-133.

directed toward two objectives: to identify major problem areas that plague teachers in open space schools and to suggest direction for in-service programs aiding school districts in preparing teachers for open space schools.

The purpose of this study has been divided into three major parts viz.: (1) to identify critical problem areas experienced by teachers in open space schools; (2) determine whether problems experienced by teachers are unique to types of teaching situations of certain kinds of teachers; (3) to make suggestions for consideration by school districts in planning in-service programs for teachers preparing for teaching in open space schools.

Questions to be Answered in the Study

1. What are the perceived problem areas that adversely affect teacher effectiveness in open space schools?
2. Are there any significant differences between the way first year teachers in open space schools categorize problem areas from the more experienced teacher?
3. Are there any significant differences between the way secondary certificated teachers categorize the different problem areas than those certified in elementary?

4. Is there congruence in perceived problems between administrators of open space schools and teachers?
5. Are there any significant differences between the way teachers from the three geographic areas of Tennessee categorize the different problem areas?
6. Do the perceived problems seem to be one of the four general types identified as instructional, interpersonal, facilities or oganizational?

Importance of the Study

The general problem areas from which the study derives is the effective implementation of the open space concept. However, research indicates that the sheer design or redesign of facilities does not necessarily result in the effective implementation of the open space concept of learning.[6]

Open space schools present a different set of problems and concerns for teachers as they move from a traditional to an open space setting. It is imperative that educators identify the types of experiences that should be included in an in-service program for teachers who will be in an open space setting.

---

[6]Ibid.

Limitations and Delimitations of the Study

The following limitations and delimitations were placed upon the study:

1. The study was delimited to selected open space schools within the state of Tennessee.
2. The selection was made of open space schools *per se*, and it is recognized that the degree of openness may vary from school to school.

II. ASSUMPTIONS OF THE STUDY

The assumptions basic to this study were:

1. The open space concept represents an effective way of organizing a school.
2. Teacher responses were honest and accurate.

III. DEFINITION OF TERMS

Terms used in this study were defined as follows:

Facilities problems. Problems that occur as a result of the open design of the plant or building.

Flexibility. Ability and willingness to change in accordance with the needs of the situation.

High intensity problem. Items that are considered an experienced problem of some degree by more than two-thirds of the respondents.

Immediate instructional area. Designated area in an open space facility for which a teacher assumes more responsibility for the supervision of students than in the total area.

Independent study. The optional study that a student does apart from the regularly assigned school work.

In-service training. Organized school district efforts to promote professional growth and to develop teacher renewal programs.

Instructional problems. Problems centered around the implementation of the instructional program of the school.

Interpersonal relations problems. Problems that teachers encounter as a result of working and planning together.

Large group. More than twenty-five students.

Low intensity problems. Items that are considered a nonexperienced problem by more than two-thirds of the respondents.

Open space school. A school with an interior featuring open teaching spaces not limited by permanent walls.

Open teaching space. An area which contains two or more teaching stations not obstructed by permanent walls.

Organizational structure problems. Problems that occur as a result of the implementation of a flexible educational program within an open space school.

Small group. More than one and fewer than twenty-five students.

Student grouping. The division of students for the purpose of enhancing the educational process.

Traditional school. A school situation with a fixed teacher-student ratio generally within a self-contained classroom featuring permanent walls.

IV. PROCEDURES

To make a study of the problems involved in effective implementation of the open space concept, the researcher found it necessary to develop a questionnaire. The instrument was based on problems experienced by teachers involved in schools attempting to employ this concept. Certain necessary biographical information was also collected by the questioner. The decision was made to study the problems involved in implementation of the open space concept of education in elementary schools in the state of Tennessee. A list of schools constructed since July 1, 1969 was secured from the Tennessee State Department of Education. From this list the physically open space plants were identified. This list totaled twenty schools. These schools were contacted and asked to participate in this study.

The principals of the selected schools were contacted and mailed the instrument to be distributed to their

teachers. After completion, the instruments were returned to the researcher for analysis and study. A computer study was made of the information received in relation to frequency, percentage and a chi-square test for significant differences. A more detailed explanation of this section is made in Chapter III which includes procedures and methodology.

V. ORGANIZATION OF THE STUDY

This study is divided into five chapters as follows:

Chapter I contains the introduction, the problem, questions to be answered, importance of the study, limitations and delimitations of the study, assumptions of the study, definition of terms, procedures, and the organization of the study.

Chapter II contains a review of related literature and research.

Chapter III contains the design and methodology of the study.

Chapter IV contains the presentation and analysis of the data.

Chapter V contains the summary, findings, conclusions, and recommendations.

CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

I. THE OPEN SPACE CONCEPT

The open space plan in education reflects an attitude rather than a physical arrangement or the structure of a building. It reflects an approach to teaching rather than a facility. Open space education constitutes a restructuring of the curriculum and the teaching-learning setting rather than an educational fad or frill.[7]

The specific applications of the open space concept are varied and known by many names. Some of these names include "open school", the "open classroom", "open education", and "informal education". However, the concept is committed to the idea of individualization of instruction. It is the antitheses of the type of classroom in which the teacher stands before the class, dominates the lesson, and the students are seated and exposed to the same learning experience at the same time.[8]

Open education, a term which is used a great deal, can be misleading. This term refers primarily to programs

---

[7]Ezra Staples, "The 'Open-Space' Plan in Education," Educational Leadership, February, 1971, p. 458.

[8]Ibid.

alternatively labeled "British primary education," "informal education," and "open schools" to name a few. However, to insert the word space between open and education is confusing to many people. This tends to become confusing to those who believe that the architecture of a school building is likely to change the mode of teaching within it.[9] It should by reemphasized that the open space concept in teaching is for the most part a state of mind and for many a very special state of mind. The building itself facilitates the concept, but the building cannot make the program. Unless what happens inside is coordinated with the open space philosophy, the program is doomed.[10]

Large open spaces can facilitate a program that is truly responsive to the needs and interest of children, but it should be pointed out that the major change required for open space need not be architectural. The major change must take place in the minds and hearts of teachers who find themselves dissatisfied with dull, stereotyped approaches to learning and who desire more child-centered, creative, interesting, and practical ways of working with children.[11]

---

[9]Donald W. Pratherae, "School's Open-Lead Carefully," Curriculum Trends, Craft Curriculum Service, September, 1972, p. 1.

[10]Commission on Open Space Schools, Report of the AASA Commission, Open Space Schools (Washington, D.C., 1971), pp. 19-25.

[11]Pratherae, p. 1.

One of the main purposes of the open plan school is to develop an independent study program. This should be a program in which children can explore and acquire knowledge independently with help from the teachers when needed. In the open plan school, students can explore and inquire to the height of their potentalities. These students can progress as far as their understanding will take them because the curriculum is open ended.[12]

The open plan concept is a physical expression of todays academic dedication to the individual student. It is a giant step forward in the crusade to better equip students for life in our complex and changing world. Someone summed up the ultimate goal of education when he said, "The task of a teacher is to help the student get along without him."[13]

II. CHANGING ROLE OF THE TEACHER

In the open space school, the teaching methods must be different. One cannot talk "at" learners in the same way as he would in a closed classroom. To whatever degree the lecture method is an effective instructional tool in a closed classroom, it is so because of the isolated nature of the

---

[12]Eddie L. Taylor, "The Open Plan School," Innovations in the Elementary School, An IDEA Publication, 1970, p. 20.

[13]The Open Plan School, An IDEA Publication, Report of a National Seminar, 1970, p. 12.

setting. In open space, lecturing to a group of twenty-five or thirty students is ineffective, unimaginative and chaos-producing.[14]

The open classroom does not distinguish between work and play. It is recognized that through play a child can learn concretely many things he is not ready to learn abstractly.[15] Open space offers many activities directed toward achieving social goals. Some of these include activities directed toward socialization, social relationships, independence, and other activities directed toward character development. These activities are easily adaptable to the open space setting. This can cause problems especially for the content-oriented teacher and this problem of content versus character emphasis should be dealt with early.[16]

Open space creates changes in the communications process for those who work in the open space setting. For example, lecture and information-giving activities must be at a minimum. In open space these types of teaching methods

---

[14]Russell L. French, Developing Open Space Schools. A paper read before the 1972 ASCD Annual Conference, Philadelphia, Pennsylvania (Knoxville, Tennessee: Mimeographed by the author, n.d.).

[15]Martha Ellison, "Open Education..Not for the Tired or the Timid," Kentucky School Journal (February, 1972), 17-20.

[16]French, Developing Open Space Schools, p. 8.

imply modes of instruction and learning which are inconsistent with the existence concept of open space itself.[17]

In the open space classroom there is a considerable amount of movement by the students and teachers. Many activities go on simultaneously. The children are free to choose the activities with which they want to work and continue with this activity until it is completed. The fluidity of the room makes it possible for children to work together and teach one another. The teacher's role is flexible in the open space classroom. He does not direct all of the activity nor does he choose how and in what order children learn. The major emphasis is on the child learning rather than on the teacher teaching.[18]

It should be noticed that in the open space classroom the teacher removes himself from the center of the stage. The function of the teacher is to serve as a guide and helper rather than as an authority while the child learns to work on his own.[19] In addition the teacher observes the child, diagnosing his strengths and weaknesses while

---

[17]Ibid.

[18]Staples, pp. 458-459.

[19]Pratherae, p. 2.

recording his progress. He makes his plans not on the basis of some preconceived curriculum guide but according to the needs of the child. At times the teacher might work with one child while at other times he might be working with the whole class. At no time is there a rigid schedule.[20]

The teacher in an open space setting gains extra support. For example, his fellow team teachers give him extra help by their presence. They also are a constant source of in-service training for him. The student supports the teacher by seeking goals that he and the teacher have derived together. No longer are teacher and student likely to be seeking different objectives.[21]

It should be reemphasized that the major role of the teacher in an open space classroom is to serve as a facilitator or guide to learning for each child in the class. The teacher is responsible for providing stimulating environment, materials, motivation, guidance and assistance. It is important that the teacher work with individuals and small groups helping students set goals and achieve them, asking questions and diagnosing each student's progress. The emphasis is on teaching children how to learn, motivating

---

[20]Staples, p. 459.

[21]Roger N. Carnish, "Open-Education--The Ingredients," Craft Leadership Action Folio #46, 1972, p. 22.

them to work on their own and to dig for information and test ideas. The goal is helping children to become independent thinkers and to become self-directed and continuous learners.[22]

Teaching in the open space setting is developed around informal teaching, and this cannot be considered easy. No teaching is easy, and informal teaching makes a number of demands on teachers that the conventional classroom does not. For example, informal teaching requires much more alertness. "The teacher must be able to 'maximize the occasion,' a teacher must always be 'at the ready'--aware not only of what each child is doing at any moment, but of what stage of development the child is in."[23] The curriculum is not limited to the teacher's lesson plan but to the broad and unpredictable interest of the child. Teachers who have tried both approaches insist that informal teaching is more difficult than formal teaching but is much more rewarding.[24]

---

[22]"Open Education," Nation's Schools, May, 1971, p. 49.

[23]Charles E. Siberman, Crisis in the Classroom (New York: Random House, 1971), p. 267.

[24]Ibid.

III. STUDENT OUTCOMES IN OPEN SPACE

Open space schools can give a student far more opportunity to work at his own pace than can the formal classroom. The system is flexible enough that long periods, several days if necessary, may be devoted to the exploration of a single topic. It is the responsibility of the teacher to insure that a long-term balance is maintained. This will enable the teacher to give individual help when and where it is needed while the rest of the group carries on with its own work. Greater self-reliance, more individual attention and a stronger motivation for learning are the results of an open space education, according to the adherents of open space.[25]

Opponents to open education have focused on two or three important questions raised by educators and parents alike. One common objection comes from those who view the freedom and emphasis on the individual in the open classroom as an "improbably romantic conception," out of touch with the harsh educational demands of today. To be more specific the question is asked, "Will anybody learn to read, or are the kids just happy painting pictures?"[26]

---

[25]Sue Cameron, "Open Plan Spurs Staff to Greater Effort," The Times Educational Supplement (March 16, 1973), 9.

[26]"Open Education," p. 51.

Another problem that can have an effect on student outcome in open space schools is noise and distraction. Since overpopulation can increase noise beyond a permissible level, an open space school cannot be used to hold more students than an equivalent combination of spaces in a conventional school. It is inevitable that the noise level will be greater in an open space setting as opposed to the self-contained classroom. The reason for this is the additional movement that is necessary for the normal instructional program.[27]

At this point, the available evidence indicates that open classroom children progress normally in reading and arithmetic skills as measured by standardized tests. There are also some indications of an increased desire to read and write among these youngsters and on the average, higher scores are found in mathematics comprehension.[28]

A considerable amount of research indicates that teacher attitudes are important and have a direct bearing upon student outcomes. For example, one such study by

---

[27]Emil J. Berger, "Instructional Spaces," Instructional Aids in Mathematics, Thirty-Fourth Yearbook, National Council of Teachers of Mathematics, 1973, p. 50.

[28]"Open Education," p. 51.

Flanders[29] indicates that the student body, colleagues, administrators, and the program in general have demonstrated greater academic achievement as a result of positive social-emotional adjustment, positive interest toward and interest in schooling. Perkins,[30] in his research at the University of Chicago, noted that training, knowledge, and skills of teachers who participated in in-service experiences led to increased growth in terms of pupil outcomes.

Everything about the open space facility tells learners that they should talk with each other, move about and actively engage in learning. In the open space setting the staff and students are all open to inspection. Our communication behaviors are observable by everyone even at a distance.[31] "The teacher's role is to know what is needed at what moment and for which child." The open space setting "is not for those teachers who are nostalgic or fearful: and it is not for the tired or the timid."[32]

---

[29]Ned A. Flanders, "Diagnosing and Utilizing Social Structures in Classroom Learning," The Dynamics of Instructional Groups, Fifty-ninth Yearbook of the National Society for the Study of Education, Part II (Chicago: University of Chicago Press, 1960), pp. 187-217.

[30]H. V. Perkins, "Climate Influences Group Learning," Journal of Educational Research, XLV (October, 1951), 115-119.

[31]French, "Developing Open Space Schools."

[32]Ellison, p. 20.

IV. IMPROVING TEACHER TRAINING

Words of caution and concern have come from several advocates of the open classroom concept. These advocates harbor fears and apprehensions that open education will go down in defeat as did progressive education, the reason being lack of appropriate and thorough teacher preparation. "It is not that open education cannot or will not work, but that there must be built-in safeguards against a similar fate."[33] It is recognized that the basic philosophy underlying the progressive movement was educationally sound. Unfortunately in open education as in progressive education, too few educators are trained in its classroom implementation. This again reflects the gap between theory and practice in American public schools. A thorough preparation of all personnel involved in the open classroom process will prevent the death of this reform that is still in its infancy stage.[34]

If school districts concern themselves with improving teacher training, knowledge, and skills it is important to examine in-service programming for teachers. In-service

---

[33]Vivian O. Windley, "A New Look at Teacher Education," The Urban Review, March, 1972, p. 5.

[34]Ibid.

and professional growth activities are probably best directed along two lines:

1. The development of positive professional attitudes toward innovation and change.
2. The development of technical skills of teachers with emphasis on new content and methodology.

In-service training programs should focus on preparing teachers for change and providing the proper opportunities. The emphasis of an in-service program of this type should be to develop within the staff a capacity for self-renewal.[35]

First, however, one must work to develop creativity and self-confidence with the staff. Encouraging staff creativity is done in many cases by means of workshops, both preliminary and ongoing. Other methods include planning sessions and staff newsletters. Teachers are helped to find ways that will encourage students to explore, manipulate, experiment, and ask questions such as "What are facts? Where did they come from? What do they mean?" The staff must also learn to share ideas, try out techniques, air problems and make suggestions.[36]

---

[35]Joseph C. DeVita, Philip Pumerantz, and Leighton B. Wilklow, The Effective Middle School (New York: Parker Publishing Company, 1970), p. 152.

[36]Edward Gieziewski, "First Make Your Staff Creative," Instructor, May, 1973, p. 46.

The District of Columbia Public Schools have taken steps to aid in the training of teachers for open space schools. They have established a training center for open space schools where groups of teachers and their students engage in a nine-week program. This program is designed as a "transition" from a traditional setting to an open space program. Students and teachers work together to plan new materials and approaches or adapt old ones and evaluate individual progress and communication. It is by programs such as this that teachers and administrators learn the importance of interdependence in the open setting. Teacher training and retraining to achieve these goals is imperative to successful implementation of the open space concept.[37]

V. SPECIAL TYPE OF TEACHER

Open space schools may need a special kind of teacher; one who is willing to meet the challenge of the "wall-less" environment. In the open space school, teaching is no longer a solo performance. In the open space setting the teacher is now an activator, guiding or suggesting paths to the learner. He may not need to carry as many solid facts around in his head, but he must work harder to stimulate and guide each child in his learning process. He must

---

[37]Samuel M. Busselle, "Training Teachers to Work in Open Space," The National Elementary Principal, LII (September, 1972), p. 90.

have the ability to develop curiosity in the learner, a curiosity that will lead him to deeper understandings, clearer meanings, and a desire to learn.[38]

It has been contended by many experienced open classroom administrators that only teachers who volunteer for the job make good in the open classroom. The administrator who starts an open education program may do well to begin on a scale small enough to allow for the inclusions for teachers who can approach the adventure with real enthusiasm. The teacher who is assigned to an open space teaching situation might rebel at the changing role. After all, the teacher must prepare to be "the student's assistant, the student's peer, his resource, travel agent, observer, evaluator, and consultant, but not master." For the principal who wants to be a mover or shaker, one caution is paramount. "All rests with the teacher and his commitment." A teacher who is psychologically frozen to traditional modes of educating can use the very materials of open education to present his pupils with an experience that is closed, rigid, and authoritarian. The environment of the open classroom begins with the human terrain, the teacher.[39]

---

[38]Open Space Schools, p. 23.

[39]Carnish, p. 21.

Teachers usually have problems adapting from being boss in their private self-contained little kingdom to cooperating with several other teachers in running an open space area. In an open space school, teachers are kept busy trying to keep ahead of the children, finding new ways of motivating the children to enjoy learning, and helping the child develop as an individual. Teachers in an open environment can no longer treat their students as a single group who have similar needs and abilities.[40]

One of the problems involved in developing open space schools has been teacher training. Cheek,[41] in his study, found that there were no established policies and procedures for staffing and training teachers for open space schools. The responsibilities lie with the local school districts. It is recognized that the open space school is a device that enables a gifted teacher who is already working in a certain way to work easily. What open space schools do not do is turn a formal teacher into an informal teacher or a bad teacher into a good teacher. Many times we are led to believe that it does.[42]

---

[40]The Open Plan School, p. 22.

[41]Robert Edward Cheek, "The Opinion of Teachers in Selected Open Space Elementary Schools" (unpublished Doctoral dissertation, Wayne State University, 1970).

[42]T. Darrell Drummond, "A Conversation with Sir Alec Clegg," The National Elementary Principal, LII (November, 1972), 21.

The ability of a group of teachers to work together is essential to effective implementation of the open space concept. Each teacher must contribute ideas and work hard for the best educational experience for the child. "Evaluation of the open space school is not based on physical considerations, but on the impact the space has on the people who use it and the freedom it allows for experimenting with new pedagogic theories and methods.[43]

---

[43] Innovations in the Elementary School, p. 20.

CHAPTER III

DESIGN AND METHODOLOGY OF THE STUDY

I. INTRODUCTION

This chapter contains information about the sample and the instrument that was developed to gather data for this study. There is also a discussion about the method of statistical analysis and scoring procedures used in this study.

II. THE SAMPLE

The sample under study consisted of eighteen elementary open space schools in the state of Tennessee. These schools have been constructed since July 1, 1969 and serve grades 1-8. The researcher secured from the Tennessee State Department of Education, Planning Division a total list of the schools constructed in Tennessee during this period of time. With assistance from a state planner, the open space plants were identified.[44] It was from this list that the schools were identified for use in this study. (See Table I.)

---

[44]Interview, Dr. Kermit W. Bowling, Director School Plant, Tennessee State Department of Education, Nashville, Tennessee, September 1972.

TABLE I

PARTICIPATING OPEN SPACE ELEMENTARY SCHOOLS IN TENNESSEE WITH SCHOOL SYSTEMS AND GRADES SERVED 1973

School	System	Grades
Alcoa Elementary	Alcoa City	K-6
Balmoral Elementary	Memphis City	1-6
Boones Creek Elementary	Washington County	1-4
Cedar Bluff Primary	Knox County	1-4
DeKalb Middle	DeKalb County	5-8
Doyle Middle	Knox County	6-8
Farragut Primary	Knox County	1-3
Farrar Elementary	Tullahoma City	K-6
Gibbs Elementary	Knox County	1-5
Greenbriar Elementary	Robertson County	1-6
Holston View Elementary	Bristol City	K-6
Jonesboro Elementary	Washington County	1-4
Lexington Middle	Lexington City	6-8
Millington Middle	Shelby County	7-8
Niota Elementary	McMinn County	1-8
Nolensville Elementary	Williamson County	K-6
Ridgeway Elementary	Memphis City	1-6
Sheffield Elementary	Memphis City	1-6

III. DEVELOPMENT OF THE INSTRUMENT

The researcher developed a questionnaire to secure the appropriate information. For a descriptive study of this type, it was considered important in the development of an instrument to contact open space school faculties who had experienced adjustment problems from a traditional to an open space setting. The researcher contacted the administrators of three open space schools which had been in operation for at least three years. With the support of the administrators, the faculties were engaged in identifying problem areas which they had experienced in their open space schools. This was done by means of an open-ended instrument. (See Appendix A.)

An instrument was constructed from the information obtained from the responses to the open-ended instrument from the pilot schools. The Assistant Superintendent in charge of instruction from the Shelby County Schools, along with the Director of the University of Tennessee-Memphis State University Advanced Graduate Center, assisted in the development of the instrument. The instrument was based upon the teachers' reactions to the open-ended instrument. This instrument was administered to the faculty of one of the three selected open space schools for the purpose of refining the instrument. The faculty made suggestions and

minor revisions were made to make the instrument more meaningful. The final instrument was complete after suggestions from the field test were incorporated into the instrument first constructed.

IV. DESCRIPTION OF THE INSTRUMENT

The instrument which was developed consists of demographic data plus twenty-five items identified as problem areas. (Appendix B.) Each of the twenty-five items describes a possible problem that may occur in open space schools. Respondents were asked to indicate the degree to which they had experienced a specific problem in open space schools. Response categories were (1) a nonexperienced problem; (2) occasional problem; (3) minor problem and (4) major problem.

The instrument was self-administered and required about fifteen minutes for completion. One of the purposes of the instrument was to categorize different problem areas in open space schools. The twenty-five items were assigned to five general problem areas for statistical analysis and study. (See Table II.)

In relation to the general problem areas in open space education certain demographic data were examined. With the use of frequency, percentage, and a chi-square test, the manner in which different groups of respondents reacted to the general problem areas previously identified was analyzed.

TABLE II

INDIVIDUAL QUESTION ITEMS CLUSTERED
BY GENERAL PROBLEM AREAS

Type of General Problem	Number of Items	Items*
Instructional	7	13,16,19,21 33,34,37
Interpersonal Relations	4	16,22,27,32
Facilities Related	8	17,18,24,25 28,29,31,36
Organizational Structure	7	14,15,20,23 26,30,35

*Items: See Instrument Appendix.

Each of the areas of demographic data were coded and relationships were made between demographic data and the four general problem areas. A study was made of the responses to the instrument item by item and the results were analyzed. To give the study more depth, the reaction of different demographic groups to the four general problem areas were identified. The same technique was used with the different geographic sections of the state. A chi-square test was used to determine any significant differences in the way respondents reacted to the items. (See Table III.)

A study was made of the responses to each of the general problem areas by demographic characteristics. The responses by the principals and teachers were directed toward identifying problem areas experienced in the implementation of an open space educational program. Principals and teachers of the eighteen open space schools were asked to complete the same form of the instrument. This allowed for an analysis of problem areas as experienced by these teachers and administrators.

V. DATA GATHERING PROCEDURES

As previously indicated, open space schools constructed after July 1, 1969 were identified. An initial contact letter was sent to principals of these schools in May 1973.

TABLE III

PARTICIPATING OPEN SPACE SCHOOLS BY RECOGNIZED GEOGRAPHIC DIVISIONS OF TENNESSEE 1973

School	Geographic Division
Alcoa Elementary	East Tennessee (A)
Cedar Bluff Primary	
Gibbs Elementary	
Farragut Primary	
Doyle Middle	
Holston View Elementary	
Boones Creek Elementary	
Jonesboro Elementary	
Niota Elementary	
Greenbriar Elementary	Middle Tennessee (B)
Nolensville Elementary	
DeKalb Middle	
Farrar Elementary	
Lexington Middle	West Tennessee (C)
Balmoral Elementary	
Ridgeway Elementary	
Millington Middle	
Sheffield Elementary	

The letters explained the proposed study and stated that they would be contacted by phone. (See Appendix C.)

The purpose of the phone call to the principals was to further explain the study, establish rapport, and ask for cooperation in the study. During the telephone interview, principals were again asked for their cooperation and permission to send the instruments to their schools. When requested by the principal, the superintendent of that school district was contacted by phone.

Instruments were mailed to the selected schools in May 1973. The principals were asked to administer the instrument to the teachers and were also directed to complete one for themselves.

Treatment and Analysis of the Data

Each instrument was coded by school to enable the study to reveal information about different groups of schools. The information was punched from the instrument onto a standard IBM card for ease in tabulation and computer analysis. All distributions were computed in frequency and percent. The chi-square test of significance at the .05 level was used for determining significant differences.

VI. SCORING PROCEDURES

The responses to the items by the respondents were marked by four possibilities. The instrument contained the following description of the problems:

1. Nonexperienced problem. A perceived problem area that has not been experienced in your teaching situation.
2. Occasional problem. Not continuous but a problem that can develop from time to time.
3. Minor problem. A problem less crucial but continues to plague the program and requires concern from the staff.
4. Major problem. Crucial problem that continues to adversely affect the total school program.

The items were marked 1, 2, 3, or 4 to correspond with the respondents' reactions to the problem areas. It is recognized by the researcher that there would not be an equal difference between each of the choices. Therefore, as a result of this approach rankings or averages cannot be analyzed or considered as valid results. For example the researcher can state that a certain percentage of the respondents' reactions were 1, 2, 3, or 4 to a certain item or group of items. The same can be said for the frequency of responses to a certain item or group of items. The

chi-square test for significant differences was used when feasible.

VII. SUMMARY

The twenty schools which were originally contacted were selected on the basis of being open space elementary schools constructed in Tennessee since July 1, 1969. This classification was made by the Tennessee State Department of Education. Of the schools surveyed, nine were located in East Tennessee, four in Middle Tennessee and five in West Tennessee.

The instrument was developed by the researcher and consisted of demographic data plus twenty-five statements of problems indigenous to open space education. The instrument was subjected to a pilot test and subsequent refinement before distribution to the schools which participated in the study.

For the purpose of performing the statistical procedures, the data were coded and punched on standard IBM cards. These data were processed by the University of Tennessee Computing Center in Knoxville. The data were analyzed to indicate different types of problems in open space education.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

The data obtained by the procedures described in Chapter III are presented and analyzed in this chapter. The findings are summarized with respect to the described procedure and the number of questionnaires returned. The questions developed in Chapter I which guided the study are discussed in narrative and tabular form with supportive explanation.

The instruments used in this study (See Appendix B) were mailed to the selected schools on May 13, 1973, and were returned by June 4, 1973. Twenty schools were identified and contacted for this study. Eighteen returned usable responses.* (See Table IV.) Two schools which had initially agreed to participate did not return the instruments. The percentage of the returned instruments for the total faculties of the eighteen schools was 87.1.

---

*Crab Orchard Elementary in Cumberland County and Powell Valley Elementary in Claiborne County were identified open space schools which were invited to participate but did not do so.

TABLE IV

FREQUENCY OF RETURNS OF QUESTIONNAIRES
BY SCHOOLS

School	System	Instruments Sent	Instruments Returned
Alcoa Elementary	Alcoa City	33	32
Balmoral Elementary	Memphis City	15	5
Boones Creek Elementary	Washington County	20	15
Cedar Bluff Primary	Knox County	33	25
Crab Orchard Elementary	Cumberland County	10	0
DeKalb Middle	DeKalb County	24	24
Doyle Middle	Knox County	24	21
Farragut Elementary	Knox County	18	18
Farrar Elementary	Tullahoma City	20	17
Gibbs Primary	Knox County	21	20
Greenbriar Elementary	Robertson County	26	20
Holston View Elementary	Bristol City	22	18
Jonesboro Elementary	Washington County	20	19
Lexington Middle	Lexington City	15	14
Millington Middle	Shelby County	22	22
Niota Elementary	McMinn County	10	7
Nolensville Elementary	Williamson County	10	10
Powell Valley Elementary	Claiborne County	19	0
Ridgeway Elementary	Memphis City	14	14
Sheffield Elementary	Memphis City	12	12
Total		388	313

I. THE DEMOGRAPHIC DATA

An analysis of the demographic data reveals the distribution of the respondents by areas of certification.

The areas of certification were as follows: 242 indicated 1-9 certification, thirty-eight indicated 7-12 certification, nine indicated administration and supervision certification, and two did not respond (Table V).

The respondents indicated that 93.6 percent or 293 were teaching in their area of certification whereas 6.1 percent or nineteen indicated they were teaching in an area other than their certified area. Another factor for analysis was the respondents' years of experience in the field of education. Thirty-seven respondents indicated that this was their first year of teaching; fifty indicated they had two to three years experience. Sixty-four of the respondents indicated four to six years and fifty-two indicated they had seven to ten years experience. Fifty-five of the respondents indicated eleven to twenty years experience and fifty-five also stated they had over twenty years experience (Table VI).

The length of experience of the respondents in an open space school was examined. It was revealed that 178 of the 313 total respondents indicated that this was their first year in an open school. Of the remaining group, 102 indicated two years, twenty indicated three years, three

TABLE V

RESPONDENTS DESCRIBED BY AREAS OF CERTIFICATION

Area of Certification		Number of Respondents
Administration and Supervision		9
Secondary	7-12	38
Elementary	1-9	242
Grades	1-12	22
Not Responding		2
Total		313

TABLE VI

RESPONDENTS' LENGTH OF TOTAL SCHOOL EXPERIENCE
(INCLUDING OPEN SPACE)

Respondents	Years
37	1
50	2-3
64	4-6
52	7-10
55	11-20
55	Over 20
Total 313	

indicated four years, four indicated five years and six indicated six years experience in an open space school (Table VII). An examination will be made later of the respondents' reaction to the items in regard to their length of experience in open space schools.

The respondents' past educational training was analyzed. The respondents were asked to indicate the most recent date they had completed a course at a college or university. The respondents were also asked to indicate the last dates they attended a college or university as a full-time student. The data revealed that 258 respondents had completed a course during the years 1970-1973. A breakdown of the remaining group indicated that thirty-six completed their last course during the years 1965-1969, twelve between 1954-1964, and seven completed their last course before 1954. In regard to the last dates that the respondents attended a college or university as a full-time student, the following information was revealed. One hundred and nine respondents attended from the years 1970-1973, eighty-nine from the years 1965-1969, sixty-nine from the years 1954-1964, and forty-six had not attended a college or university as a full-time student since 1954. These data are shown in Table VIII.

TABLE VII

RESPONDENTS' YEARS OF EXPERIENCE
IN OPEN SPACE SCHOOLS

Respondents	Years
178	1
102	2
20	3
3	4
4	5
6	6
Total 313	

TABLE VIII

DATES RESPONDENTS LAST COMPLETED COLLEGE COURSE OR ATTENDED A COLLEGE OR UNIVERSITY

	Number of Respondents				
	1970 - 73	1965 - 69	1954 - 64	Before 1954	Total
Date Last Course Taken	258	36	12	7	313
Last Date Full Time Student	109	89	69	46	313

II. RESPONSES TO THE STUDY QUESTIONS

What are the perceived problem areas that adversely affect teacher effectiveness in open space schools? The respondents were asked to react to each item by indicating any one of the four types of problems identified on the instrument. (See Appendix B.) These reactions are reported in percentage form. The problems were categorized as major problem; minor problem; occasional problem; and nonexperienced problem. (Table IX.)

An examination was made of the intensity of the respondents' reactions to the individual items. Items that were considered a nonexperienced problem by more than two-thirds of the respondents are considered a problem of low-intensity. Items that were considered an experienced problem of some degree by more than two-thirds of the respondents are considered a problem of high-intensity. Thus it is revealed that nine items are considered high-intensity problems. These items are thirteen, fourteen, fifteen, seventeen, twenty, twenty-five, twenty-eight, thirty-one, and thirty-four (Tables IX and X). The results of the study indicate that the items above are problem areas and could adversely affect a teacher's effectiveness in open space schools.

TABLE IX

RESPONDENTS' REACTIONS TO THE IDENTIFIED PROBLEMS

Items	Description	1 Nonexperienced Problem (Percent)	2 Occasional Problem (Percent)	3 Minor Problem (Percent)	4 Major Problem (Percent)	No Response (Percent)
13	Instructional Program	12.8	39.0	26.2	21.1	1.0
14	Student Movement	9.9	55.6	21.7	12.5	.3
15	Student Supervision	24.0	52.7	17.3	5.1	1.0
16	Team Cooperation	40.9	39.3	10.9	8.6	.3
17	Learning Noise	13.4	51.4	21.7	13.1	.3
18	Space Utilization	57.2	25.2	13.7	2.9	1.0
19	Student Use of IMC	52.4	28.8	12.5	4.2	2.2
20	Program Coordination	23.3	40.6	26.5	8.9	.6
21	Audiovisual Aids	40.9	39.9	10.5	8.3	.3
22	Teacher Observation	76.7	17.9	3.8	1.0	.6
23	Parental Visitation	73.2	21.7	4.2	.6	.3
24	Distraction by Movement	37.1	45.7	10.2	7.0	0
25	Distraction by Noise	28.1	52.1	14.1	5.8	0
26	Freedom of Movement	36.4	46.6	12.1	4.5	.3
27	Teacher Rapport	42.5	43.1	9.3	3.8	1.3
28	Quiet Areas	17.6	32.3	19.5	30.7	0
29	Isolation	45.7	24.9	15.7	12.8	1.0
30	Student Dismissal	47.6	32.9	12.5	7.0	0
31	Student Distraction	15.3	58.5	18.5	7.7	0
32	Team Cooperation	46.3	36.4	11.5	4.8	1.0
33	Teacher Use of IMC	66.8	21.4	8.9	1.3	1.6
34	Paraprofessionals	26.8	25.6	17.9	28.4	1.3
35	Group Visitation	45.7	44.1	8.3	1.9	0
36	Storage	39.3	22.4	13.1	25.2	0
37	Adjustment to Flexibility	47.0	37.7	9.3	4.8	1.3

TABLE X

INTENSITY OF REACTIONS TO IDENTIFIED PROBLEMS

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
15	Student Supervision	X	
17	Learning Noise	X	
20	Program Coordination	X	
22	Teacher Observation		X
23	Parental Visitation		X
25	Distraction by Noise	X	
28	Quiet Areas	X	
31	Student Distraction	X	
33	Teacher Use of IMC		X
34	Paraprofessionals	X	

Are there any significant differences between the way teachers with one year's experience in open space schools categorize problem areas from the more experienced teachers? In response to this question, the demographic data of the respondents were categorized. It was found that there were significant differences in some of the responses when categorizing by years of experience but not in any other demographic area. The data revealed that items seventeen (adjustment to learning noise), twenty-five (distraction of teachers by noise), and twenty-eight (need for quiet areas) indicated significant differences in responses. A chi-square test at the .05 level was used to determine this difference. Each of these items and responses will be discussed in the following paragraphs.

Item seventeen asked the respondents to react to problems of adjustment to learning noise in an open space building. Thirty-one of the teachers with one year's experience in open space considered item thirteen a major problem as compared to ten of the teachers with two years experience. None of the respondents with three or more years experience considered item thirteen a major problem in open space schools. Respondents indicating item seventeen a major or minor problem area were in the group of teachers with one or two years teaching experience in open space schools. Therefore, as the respondent gains more experience

in an open space school, adjustment to learning noise apparently becomes less of a problem. The responses indicate a significant difference in item seventeen when measured by a chi-square test for significant differences at the .05 level. The results are shown in Table XI.

Item twenty-five centers on the problem of the distraction of teachers by noise created by other teachers while instructing students. The data revealed that one respondent (3 percent) with three or more years experience identified item twenty-five as a minor or major problem area.

In observing the responses to item twenty-five, the data reveals that a larger percentage of respondents considering this a major or minor problem area are respondents with one year's experience in an open space school. The data suggest that respondents with one year's experience in open space schools consider distraction by noise more of a problem than respondents with more than one year's experience. The responses indicate a significant difference in item twenty-five when measured by a chi-square test for significant differences at the .05 level. The results of this are shown in Table XII.

Item twenty-eight asked the respondents to react to the problem of provision of quiet areas for students in open space schools. The reactions to this were widely

TABLE XI

FREQUENCY OF RESPONSES TO ITEM SEVENTEEN
REGARDING YEARS OF "EXPERIENCE"
IN AN OPEN SPACE SCHOOL

Years of Experience in Open Space	Nonexperienced Problem	Occasional Problem	Minor Problem	Major Problem	Totals
One Year	19	93	34	31	177
Two Years	17	48	27	10	102
Three or more Years	6	20	7	0	33
Totals	42	161	68	41	312

Chi - square, 12.60 (Significant at .05 level).
Degrees of freedom, 6.

TABLE XII

FREQUENCY OF RESPONSES TO ITEM TWENTY-FIVE
REGARDING YEARS OF "EXPERIENCE"
IN AN OPEN SPACE SCHOOL

Years of Experience in Open Space	Nonexperienced Problem	Occasional Problem	Minor Problem	Major Problem	Totals
One Year	41	92	33	12	178
Two Years	35	51	10	6	102
Three or More Years	12	20	1	0	33
Totals	88	163	44	18	313

Chi-square, 13.29 (Significant at .05 level).
Degrees of freedom, 6.

distributed by frequency of responses. The data revealed that sixty-eight of the 178 respondents with one year's experience considered item twenty-eight a major problem. This was the largest percentage by any problem area or any group of respondents in reaction to item twenty-eight.

Item twenty-eight was considered a continuous problem by a majority of the respondents. The responses indicated a significant difference in item twenty-eight when measured by a chi-square test for significant differences at the .05 level (Table XIII).

It may be that first year teachers in general are disturbed more by noise but as they gain experience, lose this anxiety. Perhaps their anxiety is that of being uncertain of their ability to "control" or to maintain "discipline". This finding thus may not be too surprising, for example it may be typical of most first year teachers whether they are working in open schools or traditional schools. It is something however of which the administrator needs to be cognizant and efforts made to alleviate the anxiety.

The demographic data revealed that 178 respondents indicated this to be their first year in an open space school. The percentages of the respondents' choices to each item were analyzed. It was found that certain items were considered nonexperienced problems by a large percent

TABLE XIII

FREQUENCY OF RESPONSES TO ITEM TWENTY-EIGHT
REGARDING YEARS OF "EXPERIENCE"
IN AN OPEN SPACE SCHOOL

Years of Experience in Open Space	Nonexperienced Problem	Occasional Problem	Minor Problem	Major Problem	Totals
One Year	35	38	37	68	178
Two Years	14	48	19	21	102
Three or More Years	6	15	5	7	33
Totals	55	101	61	96	313

Chi-square, 24.72 (Significant at .05 and .01 level).
Degrees of freedom, 6.

of the respondents with one year's experience in an open space school. For example, item twenty-two asked the respondent to react to the problem of being observed by colleagues throughout the day. It was found that 76.4 percent of the respondents had not experienced this as a problem. This was the largest reaction to any item in the individual problem areas. A review of the data revealed that many items that were perceived problems were considered a nonexperienced problem by a large percent of the respondents with one year's experience in open space schools (Table XIV).

A problem intensity study was made of the reactions by respondents with one year's experience in open space schools. It was revealed that eleven items were considered problems of high intensity (Table XV).

The number of respondents who indicated two years experience in open space schools was 102 of the total responding. A study was made of this group. The data indicated that these respondents experienced fewer major problems than the teachers with one year's experience in open space. The percentage responding to the major problem areas was smaller with this group.

The data further revealed that this group, as in the group with one year's experience, considered item twenty-two a nonexperienced problem by a large percent (75.5).

TABLE XIV

REACTIONS OF RESPONDENTS WITH ONE YEAR'S EXPERIENCE TO IDENTIFIED PROBLEM AREAS

Items	Description	1 Nonexperienced Problem Percent	2 Occasional Problem Percent	3 Minor Problem Percent	4 Major Problem Percent	No Response Percent
13	Instructional Program	15.2	31.5	28.1	24.2	1.1
14	Student Movement	7.9	52.5	25.3	14.0	.6
15	Student Supervision	21.3	50.6	20.8	6.7	.6
16	Team Cooperation	43.3	36.5	12.4	7.9	0
17	Learning Noise	10.7	52.2	19.1	17.4	.6
18	Space Utilization	59.6	23.0	12.9	3.9	.6
19	Student Use of IMC	49.4	27.0	15.2	6.2	2.2
20	Program Coordination	24.2	34.3	31.5	10.1	0
21	Audiovisual Aids	36.5	37.6	12.9	12.9	0
22	Teacher Observation	76.4	18.0	3.4	1.7	.6
23	Parental Visitation	75.8	18.5	4.5	1.1	0
24	Distraction by Movement	32.6	47.2	11.8	8.4	0
25	Distraction by Noise	23.0	51.7	18.5	6.7	0
26	Freedom of Movement	30.9	51.1	12.9	5.1	0
27	Teacher Rapport	41.0	43.3	9.6	4.5	1.7
28	Quiet Areas	19.7	21.3	20.8	38.2	0
29	Isolation	41.0	23.6	18.0	16.9	.6
30	Student Dismissal	49.4	29.8	11.8	9.0	0
31	Student Distraction	15.7	55.1	18.5	10.7	0
32	Team Cooperation	50.6	31.5	10.7	6.7	.6
33	Teacher Use of IMC	68.5	16.9	10.1	2.2	2.2
34	Paraprofessionals	23.6	21.9	19.7	34.3	.6
35	Group Visitation	50.0	39.9	9.0	1.1	0
36	Storage	39.3	25.8	11.8	23.0	0
37	Adjustment to Flexibility	44.9	39.9	9.0	5.1	1.1

TABLE XV

PROBLEM INTENSITY IDENTIFIED BY RESPONDENTS WITH ONE YEAR'S EXPERIENCE IN OPEN SPACE SCHOOLS

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
15	Student Supervision	X	
17	Learning Noise	X	
20	Program Coordination	X	
22	Teacher Observation		X
23	Parental Visitation		X
24	Distraction by Movement	X	
25	Distraction by Noise	X	
26	Freedom of Movement	X	
28	Quiet Areas	X	
31	Student Distraction	X	
33	Teacher Use of IMC		X
34	Paraprofessionals	X	

Item twenty-two asked the respondent to react to the problem of being observed throughout the day by colleagues. The result of the reactions of the respondent with two years experience are shown in Table XVI.

An examination was made by intensity to the reactions of the respondents with two years experience in open space schools. It was revealed that eight items were considered problems of high intensity (Table XVII).

The number of respondents with three or more years experience in an open space school was thirty-three. The reactions to the items revealed that the percentage of respondents that considered the items nonexperienced problems increased over the two previous groups. The research also reveals that the number of items considered major problems decreased over the two previous groups. Fourteen out of the twenty-five items were considered nonexperienced problems by a majority of the respondents reacting to each item. Item twenty-three asked the respondent to react regarding the problem of parental visitation to the instructional area. Ninety-one percent of the respondents with three or more years experience considered this a nonexperienced problem (Table XVIII).

A problem intensity study was made of the reactions by respondents with three or more years experience in open

TABLE XVI

REACTIONS OF RESPONDENTS WITH TWO YEARS EXPERIENCE TO IDENTIFIED PROBLEM AREAS

Items	Description	1 Experienced Problem Percent	2 Occasional Problem Percent	3 Minor Problem Percent	4 Major Problem Percent	No Response Percent
13	Instructional Program	9.8	48.0	20.6	20.6	1.0
14	Student Movement	12.7	55.9	17.6	13.7	0
15	Student Supervision	17.6	61.8	15.7	3.9	.3
16	Team Cooperation	33.3	47.1	8.8	10.8	0
17	Learning Noise	16.7	47.1	26.5	9.8	0
18	Space Utilization	51.0	29.4	18.6	0	1.0
19	Student Use of IMC	56.9	29.4	11.8	2.0	0
20	Program Coordination	24.5	45.1	20.6	7.8	2.0
21	Audiovisual Aids	42.2	46.1	7.8	2.9	1.0
22	Teacher Observation	75.5	17.6	5.9	0	1.0
23	Parental Visitation	62.7	31.4	4.9	0	1.0
24	Distraction by Movement	39.2	43.1	10.8	6.9	0
25	Distraction by Noise	34.3	50.0	9.8	5.9	0
26	Freedom of Movement	40.2	41.2	13.7	4.9	0
27	Teacher Rapport	44.1	46.1	6.9	2.9	0
28	Quiet Areas	13.7	47.1	18.6	20.6	0
29	Isolation	51.0	25.5	12.7	9.8	1.0
30	Student Dismissal	38.2	38.2	17.6	5.9	0
31	Student Distraction	12.7	60.8	21.6	4.9	0
32	Team Cooperation	37.3	44.1	15.7	2.9	0
33	Teacher Use of IMC	57.8	31.4	9.8	0	1.0
34	Paraprofessionals	30.4	27.5	17.6	21.6	2.9
35	Group Visitation	38.2	48.0	9.8	3.9	0
36	Storage	30.4	21.6	17.6	30.4	0
37	Adjustment to Flexibility	43.1	39.2	10.8	5.9	1.0

TABLE XVII

PROBLEM INTENSITY IDENTIFIED BY RESPONDENTS WITH TWO YEARS EXPERIENCE IN OPEN SPACE SCHOOLS

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
15	Student Supervision	X	
17	Learning Noise	X	
20	Program Coordination	X	
22	Teacher Observation		X
28	Quiet Areas	X	
31	Student Distraction	X	
36	Storage	X	

TABLE XVIII

REACTIONS OF RESPONDENTS WITH THREE OR MORE YEARS EXPERIENCE TO IDENTIFIED PROBLEM AREAS

Items	Description	1 Nonexperienced Problem Percent	2 Occasional Problem Percent	3 Minor Problem Percent	4 Major Problem Percent	No Response Percent
13	Instructional Program	9.0	51.5	33.3	6.0	0
14	Student Movement	12.1	72.7	15.2	0	0
15	Student Supervision	57.5	36.3	3.0	0	3.0
16	Team Cooperation	51.5	30.3	9.0	6.0	3.0
17	Learning Noise	18.2	60.6	21.2	0	0
18	Space Utilization	63.6	24.2	3.0	6.0	3.0
19	Student Use of IMC	54.5	36.3	0	0	9.0
20	Program Coordination	15.1	60.6	18.4	6.0	0
21	Audiovisual Aids	60.6	33.3	6.0	0	0
22	Teacher Observation	81.6	18.4	0	0	0
23	Parental Visitation	91.0	9.0	0	0	0
24	Distraction by Movement	54.5	45.5	0	0	0
25	Distraction by Noise	36.4	60.6	3.0	0	0
26	Freedom of Movement	56.3	40.6	3.1	0	0
27	Teacher Rapport	45.4	33.3	15.1	3.0	3.0
28	Quiet Areas	18.2	45.5	15.2	21.2	0
29	Isolation	54.5	30.3	12.0	0	3.0
30	Student Dismissal	66.6	33.3	0	0	0
31	Student Distraction	21.2	69.7	9.1	0	0
32	Team Cooperation	30.3	39.3	21.4	3.0	6.0
33	Teacher Use of IMC	84.8	15.2	0	0	0
34	Paraprofessionals	33.3	39.4	9.1	18.2	0
35	Group Visitation	45.4	54.5	0	0	0
36	Storage	66.2	6.0	6.0	21.2	0
37	Adjustment to Flexibility	71.9	21.9	6.3	0	0

space schools. It was revealed that six items were considered problems of high intensity (Table XIX).

It should be noted that of the respondents' reactions, the percentage of respondents considering an item a major problem decreases as the years of experience in open space increase (Tables XIV, page 54, XVI, page 57, and XVIII). For example, of the teachers with one years' experience, all twenty-five items were considered major problems by some of the reactors. Of the respondents with two years experience, twenty-one of the twenty-five items were considered major problems by reactors, and of the respondents with three or more years experience only eight of the twenty-five items were considered major problem areas by respondents.

Are there any significant differences between the way secondary certificated teachers categorize the different problem areas than those certified in elementary? This question was designed to determine whether the area of certification of a respondent made any significant difference in the way the individual responded. The data revealed that of the 313 respondents 242 were certified in grades 1-9 and thirty-eight in grades 7-12. The remaining number consists of nine in administration and supervision, twenty-two certified in grades 1-12 and two not responding. Table V, page 39, indicates the way in which the respondents were distributed in areas of certification. The results are

TABLE XIX

PROBLEM INTENSITY INDICATED BY RESPONDENTS WITH THREE OR MORE YEARS IN OPEN SPACE SCHOOLS

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
17	Learning Noise	X	
20	Program Coordination	X	
22	Teacher Observation		X
23	Parental Visitation		X
28	Quiet Areas	X	
30	Student Dismissal		X
31	Student Distraction	X	
33	Teacher Use of IMC		X
37	Adjustment to Flexibility		X

reported by individual reaction to each item. The data are presented by areas of certification. There were no significant differences in the reactions of the respondents. A chi-square test at the .05 level was used for this test.

Is there congruence in perceived problems between administrators of open space schools and teachers? The question is designed in such a way as to indicate the compatability of the responses of the teachers as compared to the response of the administrators. The study included thirteen administrators and 296 teachers. An analysis was made of the reactions of these two groups to each item. The data revealed that twelve of the twenty-five items were considered major problems by some of the administrators. An analysis was also made of the teachers' reactions and it was found that each of the twenty-five items were considered major problems by some of the teachers. Items concerning the development of an instructional program and the distraction of students by movement were considered major problems by more of the administrators than any other items. The largest number of teachers indicated that items concerning provision of quiet areas for students and the need for assistance by paraprofessionals are considered major problems. The data indicate that the teachers perceive many more major problem areas in open space education than do the administrators (Tables XX and XXI).

TABLE XX

ADMINISTRATOR PERCEPTION OF PROBLEM AREAS MOST LIKELY TO BE EXPERIENCED BY TEACHERS IN OPEN SPACE SCHOOLS

Items	Description	1 Nonexperienced Problem Percent	2 Occasional Problem Percent	3 Minor Problem Percent	4 Major Problem Percent
13	Instructional Program	7.7	30.8	30.8	30.8
14	Student Movement	30.8	38.5	30.8	0
15	Student Supervision	38.5	46.2	7.7	7.7
16	Team Cooperation	7.7	69.2	15.4	7.7
17	Learning Noise	30.8	69.2	0	0
18	Space Utilization	84.6	15.4	0	0
19	Student Use of IMC	61.5	30.8	7.7	0
20	Program Coordination	23.1	46.2	30.8	0
21	Audiovisual Aids	46.2	38.5	7.7	7.7
22	Teacher Observation	69.2	30.8	0	0
23	Parental Visitation	92.3	7.7	0	0
24	Distraction by Movement	38.5	61.5	0	0
25	Distraction by Noise	38.5	61.5	0	0
26	Freedom of Movement	61.5	30.8	0	7.7
27	Teacher Rapport	15.4	84.6	0	0
28	Quiet Areas	30.8	30.8	15.4	23.1
29	Isolation	76.9	15.4	0	7.7
30	Student Dismissal	53.8	46.2	0	0
31	Student Distraction	23.1	76.9	0	0
32	Team Cooperation	46.2	46.2	7.7	0
33	Teacher Use of IMC	76.9	15.4	7.7	0
34	Paraprofessionals	15.4	38.5	7.7	38.5
35	Group Visitation	53.8	46.2	0	0
36	Storage	15.4	30.8	23.1	30.8
37	Adjustment to Flexibility	69.2	15.4	15.4	0

TABLE XXI

TEACHERS' REACTIONS TO ITEMS BY PROBLEM AREAS

Items	Description	1 Nonexperienced Problem Percent	2 Occasional Problem Percent	3 Problem Percent	4 Problem Percent	No Response
13	Instructional Program	12.8	39.5	25.7	20.9	1.0
14	Student Movement	9.1	56.4	20.9	13.2	.3
15	Student Supervision	23.3	53.0	17.6	5.1	1.0
16	Team Cooperation	41.9	38.2	10.8	8.8	.3
17	Learning Noise	12.8	50.0	23.0	13.9	.3
18	Space Utilization	56.1	25.3	14.5	3.0	1.0
19	Student Use of IMC	52.0	28.7	12.5	4.4	2.4
20	Program Coordination	23.0	40.2	26.7	9.5	.7
21	Audiovisual Aids	40.5	39.9	10.8	8.4	.3
22	Teacher Observation	77.7	16.6	4.1	1.0	.7
23	Parental Visitation	72.6	22.3	4.1	.7	.3
24	Distraction by Movement	37.2	44.6	10.8	7.4	0
25	Distraction by Noise	27.7	51.4	14.9	6.1	0
26	Freedom of Movement	35.5	47.3	12.5	4.4	.3
27	Teacher Rapport	43.6	41.2	9.8	4.1	1.4
28	Quiet Areas	17.2	31.4	19.9	31.4	0
29	Isolation	43.9	25.3	16.6	13.2	0
30	Student Dismissal	48.0	31.4	13.2	7.4	0
31	Student Distraction	15.2	57.1	19.6	8.1	0
32	Team Cooperation	46.3	36.1	11.5	5.1	1.0
33	Teacher Use of IMC	66.6	21.3	9.1	1.4	1.7
34	Paraprofessionals	27.4	25.0	18.6	27.7	1.4
35	Group Visitation	45.6	43.6	8.8	2.0	0
36	Storage	40.5	21.3	12.8	25.3	0
37	Adjustment to Flexibility	45.3	39.2	9.1	5.1	1.4

A problem intensity study was made of the reactions of administrators in open space schools. It was revealed that ten items were considered problems of high intensity (Table XXII). In the schools studied, the research did not reveal any significant differences in the reactions of the respondents when analyzed by teachers and administrators. There were, however, differences in responses to problem areas as reported in Tables XX, page 63, and XXI.

An examination was made by intensity to the reactions of the teachers in open space schools. It was revealed that nine items were considered problems of high intensity (Table XXIII).

Are there any significant differences in the way teachers from the three geographic areas of Tennessee categorize the different problem areas? The data were analyzed in regard to the respondents' reactions by the three recognized geographic divisions of Tennessee. The study included nine schools in East Tennessee, four in Middle Tennessee and five in West Tennessee. The study revealed some interesting variations from the reactions of the respondents from the three geographic sections.

Item thirteen asked the respondents to react to the problem of developing an instructional program for open space. The reactions to this item indicated that 24.1 percent of the reactors from schools in East Tennessee

TABLE XXII

PROBLEM INTENSITY OF ADMINISTRATOR PERCEPTION OF PROBLEM AREAS MOST LIKELY TO BE EXPERIENCED BY TEACHERS IN OPEN SPACE SCHOOLS

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
16	Team Cooperation	X	
17	Learning Noise	X	
18	Space Utilization		X
19	Student Use of IMC		X
20	Program Coordination	X	
22	Teacher Observation		X
23	Parental Visitation		X
27	Teacher Rapport	X	
28	Quiet Areas	X	
29	Isolation		X
31	Student Distraction	X	
33	Teacher Use of IMC		X
34	Paraprofessionals	X	
36	Storage	X	
37	Adjustment of Flexibility		X

TABLE XXIII

PROBLEM INTENSITY IDENTIFIED BY ALL TEACHERS IN PARTICIPATING OPEN SPACE SCHOOLS

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
15	Student Supervision	X	
17	Learning Noise	X	
20	Program Coordination	X	
22	Teacher Observation		X
23	Parental Visitation		X
25	Distraction by Noise	X	
28	Quiet Areas	X	
31	Student Distraction	X	
33	Teacher Use of IMC		X
34	Paraprofessionals	X	

considered this a major problem as compared to 22.5 percent in Middle Tennessee. The interesting point is that only 11.9 percent of the respondents from open space schools in West Tennessee indicated item thirteen to be a major problem. The reactions to item fourteen follows the same trend as item thirteen. For example, 15.4 percent of the respondents from schools in East Tennessee and 14.1 percent from schools in Middle Tennessee considered item fourteen a major problem. This is compared to two respondents (3 percent) from open space schools in West Tennessee that indicated this to be a major problem.

Item twenty-two asked the respondents to react to the problem of being observed by their colleagues throughout the day. It should be noted that the responses to this item indicated this to be a nonexperienced problem in all sections of Tennessee. The results of this was that 73 percent of the respondents in East Tennessee, 81.7 percent of the respondents in Middle Tennessee, and 82.1 percent of the respondents in West Tennessee indicated this to be a nonexperienced problem in open space (Tables XXIV, XXV, and XXVI).

Respondents from open space schools in West Tennessee did not indicate as many major problem areas as did the respondents from Middle and East Tennessee. Respondents from schools in East Tennessee indicated a higher percentage

TABLE XXIV

GENERAL REACTIONS TO PROBLEMS IN OPEN SPACE SCHOOLS IN EAST TENNESSEE

Items	Description	1 Nonexperienced Problem Percent	2 Occasional Problem Percent	3 Minor Problem Percent	4 Major Problem Percent	No Response Percent
13	Instructional Program	12.1	42.5	20.7	24.1	.6
14	Student Movement	8.0	54.0	22.4	15.5	0
15	Student Supervision	17.8	55.7	20.1	5.7	.6
16	Team Cooperation	39.7	45.4	6.9	8.0	0
17	Learning Noise	10.3	51.4	24.7	13.2	.6
18	Space Utilization	55.2	27.6	12.1	3.4	.7
19	Student Use of IMC	56.3	24.1	14.9	4.0	.6
20	Program Coordination	23.0	38.5	28.7	8.6	1.1
21	Audiovisual Aids	35.1	44.3	9.8	19.3	.6
22	Teacher Observation	73.0	20.1	5.2	.6	1.1
23	Parental Visitation	69.0	27.0	3.4	0	.6
24	Distraction by Movement	33.3	46.0	12.6	8.0	0
25	Distraction by Noise	27.0	50.6	15.5	6.9	0
26	Freedom of Movement	34.5	46.6	13.2	5.7	0
27	Teacher Rapport	43.1	45.4	6.9	4.0	.6
28	Quiet Areas	13.8	29.9	19.0	37.4	0
29	Isolation	42.5	25.9	13.8	16.7	1.1
30	Student Dismissal	42.0	36.2	15.5	6.3	0
31	Student Distraction	13.8	56.3	20.7	9.2	0
32	Team Cooperation	44.8	37.4	13.8	4.0	0
33	Teacher Use of IMC	65.5	25.9	7.5	.6	.6
34	Paraprofessionals	28.2	23.6	21.3	25.9	1.1
35	Group Visitation	41.4	45.4	9.8	3.4	0
36	Storage	35.1	23.0	14.4	27.6	0
37	Adjustment to Flexibility	43.7	40.2	8.0	6.3	1.7

TABLE XXV

GENERAL REACTIONS TO PROBLEMS IN OPEN SPACE SCHOOLS IN MIDDLE TENNESSEE

Items	Description	1 Nonexperienced Problem Percent	2 Occasional Problem Percent	3 Minor Problem Percent	4 Major Problem Percent	No Response Percent
13	Instructional Program	14.1	25.4	35.2	22.5	2.8
14	Student Movement	16.9	53.5	14.1	14.1	1.4
15	Student Supervision	25.4	54.9	15.5	2.8	1.4
16	Team Cooperation	38.0	32.4	21.1	8.5	0
17	Learning Noise	23.9	43.7	15.5	16.9	0
18	Space Utilization	63.4	15.5	18.3	2.8	0
19	Student Use of IMC	40.8	36.6	12.7	5.6	4.2
20	Program Coordination	28.2	33.8	26.8	11.3	0
21	Audiovisual Aids	42.3	32.4	16.9	8.5	0
22	Teacher Observation	81.7	12.7	2.8	2.8	0
23	Parental Visitation	76.1	15.5	5.6	2.8	0
24	Distraction by Movement	45.1	35.2	9.9	9.9	0
25	Distraction by Noise	31.0	46.5	15.5	7.0	0
26	Freedom of Movement	38.0	45.1	12.7	4.2	0
27	Teacher Rapport	46.5	40.8	8.5	1.4	2.8
28	Quiet Areas	26.8	35.2	19.7	18.3	0
29	Isolation	56.3	16.9	16.9	9.9	0
30	Student Dismissal	57.7	26.8	8.5	7.0	0
31	Student Distraction	26.8	50.7	14.1	8.5	0
32	Team Cooperation	47.9	32.4	11.3	8.5	0
33	Teacher Use of IMC	56.3	18.3	15.5	4.2	5.6
34	Paraprofessionals	26.8	32.4	9.9	28.2	2.8
35	Group Visitation	57.7	36.6	5.6	0	0
36	Storage	33.8	22.5	15.5	28.2	0
37	Adjustment to Flexibility	52.1	33.8	11.3	2.8	0

TABLE XXVI

GENERAL REACTIONS TO PROBLEMS IN OPEN SPACE SCHOOLS IN WEST TENNESSEE

Items	Description	1 Nonexperienced Problem Percent	2 Occasional Problem Percent	3 Minor Problem Percent	4 Major Problem Percent	No Response Percent
13	Instructional Program	13.4	43.3	31.3	11.9	0
14	Student Movement	7.5	62.7	26.9	3.0	0
15	Student Supervision	38.8	41.8	11.9	6.0	1.5
16	Team Cooperation	47.8	29.9	10.4	10.4	1.5
17	Learning Noise	10.4	59.7	20.9	9.0	0
18	Space Utilization	56.7	28.4	13.4	1.5	0
19	Student Use of IMC	55.2	31.3	6.0	3.0	4.5
20	Program Coordination	19.4	52.2	20.9	7.5	0
21	Audiovisual Aids	55.2	35.8	6.0	3.0	0
22	Teacher Observation	82.1	16.4	1.5	0	0
23	Parental Visitation	82.1	13.4	4.5	0	0
24	Distraction by Movement	38.8	55.2	4.5	1.5	0
25	Distraction by Noise	28.4	62.7	7.5	1.5	0
26	Freedom of Movement	40.3	49.3	7.5	1.5	1.5
27	Teacher Rapport	37.3	38.3	16.4	6.0	1.5
28	Quiet Areas	17.9	34.3	20.9	26.9	0
29	Isolation	43.3	31.3	17.9	6.0	1.5
30	Student Dismissal	52.2	31.3	7.5	9.0	0
31	Student Distraction	7.5	73.1	16.4	3.0	4.5
32	Team Cooperation	49.3	37.3	6.0	3.0	0
33	Teacher Use of IMC	82.1	11.9	6.0	0	0
34	Paraprofessionals	23.9	22.4	17.9	35.8	0
35	Group Visitation	44.8	47.8	7.5	0	0
36	Storage	56.7	19.4	7.5	16.4	0
37	Adjustment to Flexibility	50.7	34.3	10.4	3.0	1.5

of major problem areas. This could suggest that the respondents in West Tennessee are more adaptive to open space or that the open space program in West Tennessee has not developed enough "openness" to experience these major problem areas.

In the schools studied, the research did not reveal any significant differences in the reactions of the respondents of the different geographic areas of Tennessee. A problem intensity study was made of the reactions of respondents from the three geographic areas. The results with description are found in Tables XXVII, XXVIII, and XXIX.

Do the perceived problems seem to be one of four general types viz., instructional; interpersonal; facilities; or organizational? In response to this question an examination was made of the reactions to items clustered under each of the four types. The items were grouped to illustrate four general types of problems in open space education. Table V, page 39, shows these four general problem areas as clustered by items. The researcher, by inspection of the percentages of responses to each item, made the observations described in the following paragraphs.

The respondents' reactions to the total cluster of general problem areas are reported in percentage form. The responses are separated into two divisions; one division is made up of the respondents reacting to the cluster as a

TABLE XXVII

PROBLEM INTENSITY INDICATED BY RESPONDENTS FROM EAST TENNESSEE

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
15	Student Supervision	X	
17	Learning Noise	X	
20	Program Coordination	X	
22	Teacher Observation		X
23	Parental Visitation		X
25	Distraction by Noise	X	
28	Quiet Areas	X	
31	Student Distraction	X	
34	Paraprofessionals	X	

TABLE XXVIII

PROBLEM INTENSITY INDICATED BY RESPONDENTS FROM MIDDLE TENNESSEE

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
15	Student Supervision	X	
17	Learning Noise	X	
20	Program Coordination	X	
22	Teacher Observation		X
23	Parental Visitation		X
25	Distraction by Noise	X	
28	Quiet Areas	X	
31	Student Distraction	X	
34	Paraprofessionals	X	

TABLE XXIX

PROBLEM INTENSITY INDICATED BY RESPONDENTS FROM WEST TENNESSEE

Items	Description	High Intensity	Low Intensity
13	Instructional Program	X	
14	Student Movement	X	
17	Learning Noise	X	
20	Program Coordination	X	
22	Teacher Observation		X
23	Parental Visitation		X
25	Distraction by Noise	X	
28	Quiet Areas	X	
31	Student Distraction	X	
33	Teacher Use of IMC		X
34	Paraprofessionals	X	

nonexperienced or occasional problem while the other division includes continuing types of problems. This latter group includes minor and major problem areas.

The cluster that received the largest percent of reactions as a minor or major problem was facilities related problems. The total of this group was 29 percent of the respondents. This indicated that 29 percent of the respondents stated that the eight items classed as facilities type problems were either a minor or major problem. This was the largest of any group of major and minor problems.

Instructional related problems was second on the list as major and minor problem areas. The results indicated that 24.9 percent of the respondents stated that the items considered instructional problems were either major or minor problems. The group that had the third highest percent in response relating to major or minor problems was the items relating to organizational structure. The study indicated that 20.4 percent of the respondents considered these items a major or minor problem.

The cluster that received the lowest percent was items relating to interpersonal relations problems. This group received 13.8 percent of the responses when observed by clusters.

The data suggest that the respondents do not consider intangible areas, such as interpersonal relations problems,

as serious as they do the more tangible such as facilities related problems. This would indicate that the respondents consider problems that they can visualize to be more of a serious nature.

III. ANCILLARY SUPPORTIVE DATA

The information presented in this section of the chapter was derived from a supplementary analysis of the data found in the inquiry. Data are presented with the intent of complementing the information previously presented. A cross-tabulation was made of certain related items for the purpose of determining more specific problems in open space education.

Item thirteen was chosen to cross tab with selected items because it was considered a key item to open space education and also a high intensity item by all groups analyzed. Three hundred and nine respondents made selections on items thirteen and fourteen. Item thirteen states that "the development of an instructional program to effectively utilize the flexibility of open space is a problem." Item fourteen states that the "distraction of students by movement in the immediate area is a problem."

A cross-tabulation reveals that nine respondents indicated that both were nonexperienced problems while

sixty-six respondents indicated an occasional problem in both items thirteen and fourteen. Eighteen respondents indicated minor problems whereas fourteen stated major problems for both areas. It should be noted that thirty-two respondents indicated that while developing an instructional program was a major problem the distraction of the students by movement was an occasional problem. Respondents were not equal in their selection of movement as a distractor as compared to the development of a program in open space. The two items were not treated synonymous by those responding to both items. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results of this tabulation are listed in Table XXX.

Cross-Tabulations on Items Thirteen and Fifteen

A cross-tabulation of items thirteen and fifteen indicated that three hundred and seven respondents made responses on these items. Item thirteen states that "the development of an instructional program to effectively utilize the flexibility of open space is a problem." Item fifteen states that the "maintenance of proper student supervision in the immediate instructional area is a problem." These items gave the respondents a choice of four categories: major problem, minor problem, occasional

TABLE XXX

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "FOURTEEN" BY FREQUENCY

	Item Fourteen				
Item Thirteen	Nonexperienced Problem 1	Occasional Problem 2	Minor Problem 3	Major Problem 4	Total
Nonexperienced Problem 1	9	27	3	1	40
Occasional Problem 2	16	66	29	11	122
Minor Problem 3	4	47	18	13	82
Major Problem 4	1	32	18	14	65
Total	30	172	68	39	309

Chi-square, 30.45 (Significant at .05 level).
Degree of freedom, 9.

problem and nonexperienced problem in order to indicate their reaction to the problem listed.

A cross-tabulation revealed that twenty-two respondents indicated that both items were nonexperienced problems whereas six indicated that both were major problems. Thirty-seven respondents indicated that developing the program was a major problem while the movement of students was an occasional problem. More respondents indicated that major and minor problems occur in the development of an instructional program than occur with the movement of students. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results are listed in Table XXXI. By inspection of the previous table, the respondents' selection of the degree of the problem indicated more concern with the development of an instructional program than student supervision in an open spaced area.

Cross-Tabulations on Items Thirteen and Seventeen

A cross-tabulation of items thirteen and seventeen indicated that three hundred and nine respondents made responses on these items. Item thirteen states that "the development of an instructional program to effectively utilize the flexibility of open space is a problem." Item seventeen states that "adjustment to learning noise of the educational process in open space is a problem." These

TABLE XXXI

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "FIFTEEN" BY FREQUENCY

Item Thirteen	Item Fifteen: Nonexperienced Problem 1	Occasional Problem 2	Minor Problem 3	Major Problem 4	Total
Nonexperienced Problem 1	22	15	1	1	39
Occasional Problem 2	32	70	17	3	122
Minor Problem 3	18	42	14	6	80
Major Problem 4	3	37	20	6	66
Total	75	164	52	16	307

Chi-square, 46.77 (Significant at .05 level).
Degrees of freedom, 9.

items gave the respondents a choice of four categories: major problem, minor problem, occasional problem, and non-experienced problem in order to indicate their reactions to the problems listed.

A cross-tabulation reveals that fifteen respondents indicated that both items were nonexperienced problems whereas sixteen indicated that both were major problems. Twenty-nine respondents indicated that developing the instructional program was a major problem while the adjustment to the learning noise of students was an occasional problem. The data reveals that more respondents indicated that major and minor problems occur in the development of an instructional program than occurs in adjusting to learning noise of open space. The degree of a problem was not synonymous as identified by the respondents. The program was perceived to be the more critical of the two. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results are listed in Table XXXII.

Cross-Tabulations on Items Thirteen and Twenty-Four

A cross-tabulation of items thirteen and twenty-four indicated that three hundred and ten respondents made responses on these items. Item thirteen states that "the development of an instructional program to effectively

TABLE XXXII

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "SEVENTEEN" BY FREQUENCY

Item Thirteen	Item Seventeen: Nonexperienced Problem 1	Occasional Problem 2	Minor Problem 3	Major Problem 4	Total
Nonexperienced Problem 1	15	17	4	3	39
Occasional Problem 2	17	71	26	8	122
Minor Problem 3	6	42	20	14	82
Major Problem 4	3	29	18	16	66
Total	41	159	68	41	309

Chi-square, 42.39 (Significant at .05 level).
Degrees of freedom, 9.

utilize the flexibility of open space is a problem." Item twenty-four states that "the distraction of teachers by the movement of other teachers and their students is a problem." These items gave the respondent a choice of four categories: major problem, minor problem, occasional problem, and non-experienced problem in order to indicate their reactions to the problems listed.

A cross-tabulation indicated that twenty-two respondents indicated that both items were nonexperienced problems whereas ten indicated that both were major problems. Twenty-seven respondents indicated that the development of an instructional program was a minor problem but the distraction of teachers by movement was considered a nonexperienced problem. The data also reveals that forty-seven respondents consider the development of an instructional program a major problem area and the adjustment to movement either a non-experienced or occasional problem. It should be noted that approximately three times as many respondents consider item thirteen a major or minor problem as compared to item twenty-four. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results are listed in Table XXXIII.

By inspection of the data presented in Table XXXIII, the respondents indicated that teachers and students were not the degree of a problem that the development of a program in open space was. One could conjecture that the

TABLE XXXIII

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "TWENTY-FOUR" BY FREQUENCY

Item Thirteen	Item Twenty-Four: Nonexperienced Problem 1	Occasional Problem 2	Minor Problem 3	Major Problem 4	Total
Nonexperienced Problem 1	22	15	2	1	40
Occasional Problem 2	48	56	14	4	122
Minor Problem 3	27	42	6	7	82
Major Problem 4	18	29	9	10	66
Total	115	142	31	22	310

Chi-square, 19.59 (Significant at .05 level).
Degrees of freedom, 9.

respondents were not as concerned about movement as they were about the development of an instructional program.

Cross-Tabulations on Items Thirteen and Twenty-Five

A cross-tabulation of items thirteen and twenty-five indicated that three hundred and ten respondents made responses on these items. Item thirteen states that "the development of an instructional program to effectively utilize the flexibility of open space is a problem." Item twenty-five states that the "distraction of teachers by noise created by other teachers and their students is a problem." These items gave the respondents a choice of four categories: major problem, minor problem, occasional problem and nonexperienced problem in order to indicate their reaction to the problem listed.

A cross-tabulation reveals that twenty-one respondents indicated that both items were nonexperienced problems whereas eight respondents indicated that both were major problems. It should be noted that thirty-five respondents considered developing an instructional program a major problem but distraction by noise an occasional problem. The degree of the problem was greater in developing a program than in the noise level of an open space facility. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results are listed in Table XXXIV.

TABLE XXXIV

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "TWENTY-FIVE" BY FREQUENCY

Item Thirteen	Item Twenty-Five: Nonexperienced Problem 1	Occasional Problem 2	Minor Problem 3	Major Problem 4	Total
Nonexperienced Problem 1	21	15	3	1	40
Occasional Problem 2	41	65	12	4	122
Minor Problem 3	16	47	14	5	82
Major Problem 4	9	35	14	8	66
Total	87	162	43	18	310

Chi-square, 31.39 (Significant at .05 level).
Degrees of freedom, 9.

Cross-Tabulations on Items Thirteen and Twenty-Six

A cross-tabulation of items thirteen and twenty-six indicated that three hundred and nine respondents made responses on these items. Item thirteen states that "the development of an instructional program to effectively utilize the flexibility of open space is a problem." Item twenty-six states that the "freedom of movement of students within their area is a problem." These items gave the respondents a choice of four categories: major problem, minor problem, occasional problem and nonexperienced problem in order to indicate their reaction to the problem listed.

A cross-tabulation reveals that twenty-one respondents indicated that both items were nonexperienced problems whereas sixty-three respondents indicated that both were occasional problems and six considered both a major problem. More respondents indicated that major and minor problems occur with the movement of students. The researcher conjectured that the respondents were not as concerned about the movement of students in the instructional area nearly to the degree as of the development of an instructional program in an open space area. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results are listed in Table XXXV.

TABLE XXXV

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "TWENTY-SIX" BY FREQUENCY

Item Thirteen	Item Twenty Six: Nonexperienced Problem 1	Occasional Problem 2	Problem 3	Problem 4	Total
Nonexperienced Problem 1	21	15	2	1	39
Occasional Problem 2	43	63	15	1	122
Minor Problem 3	29	37	10	6	82
Major Problem 4	19	30	11	6	66
Total	112	145	38	14	309

Chi-square, 16.78 (Significant at .05 level).
Degrees of freedom, 9.

Cross-Tabulations on Items Thirteen and Thirty-One

A cross-tabulation of items thirteen and thirty-one indicated that three hundred and ten respondents made responses on these items. Item thirteen states that "the development of an instructional program to effectively utilize the flexibility of open space is a problem." Item thirty-one states that that the "distraction of students by activities in areas other than their own is a problem." These items gave the respondents a choice of four categories: major problem, minor problem, occasional problem, and non-experienced problem in order to indicate their reaction to the problem listed.

A cross-tabulation reveals that seventy-eight respondents indicated that both items were nonexperienced problems. The data revealed that a majority of the respondents considered item thirty-one an occasional problem. The data also revealed that more respondents indicated that major and minor problems occur in the development of an instructional program than occur with the distraction of students by activities. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results are listed in Table XXXVI.

Respondents were not equal in their selection of movement of students in other areas and the development of

TABLE XXXVI

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "THIRTY-ONE" BY FREQUENCY

	Item Thirty-One				
Item Thirteen	Nonexperienced Problem 1	Occasional Problem 2	Minor Problem 3	Major Problem 4	Total
Nonexperienced Problem 1	10	27	3	0	40
Occasional Problem 2	17	78	19	8	122
Minor Problem 3	13	45	14	10	82
Major Problem 4	7	31	22	6	66
Total	47	181	58	24	310

Chi-square, 23.02 (Significant at .05 level).
Degrees of freedom, 9.

a program in open space. The data indicated that the movement of students was not a severe problem.

Cross-Tabulations on Items Thirteen and Thirty-Four

A cross-tabulation of items thirteen and thirty-four indicated that three hundred and seven respondents made responses on these items. Item thirteen states that "the development of an instructional program to effectively utilize the flexibility of open space is a problem." Item thirty-four states that the "need for assistance by paraprofessionals is a problem." These items gave the respondents a choice of four categories: major problem, minor problem, occasional problem, and nonexperienced problem in order to indicate their reactions to the problem listed.

A cross-tabulation reveals that nineteen respondents indicated that both items were nonexperienced problems whereas thirty-two indicated that both were major problems. The data revealed that more respondents considered the need for assistance by paraprofessionals a minor or major problem area than the development of an instructional program. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results are listed in Table XXXVII.

TABLE XXXVII

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "THIRTY-FOUR" BY FREQUENCY

Item Thirteen	Item Thirty-Four: Nonexperienced Problem 1	Occasional Problem 2	Minor Problem 3	Major Problem 4	Total
Nonexperienced Problem 1	19	5	6	8	38
Occasional Problem 2	38	32	25	27	122
Minor Problem 3	18	28	15	20	81
Major Problem 4	9	15	10	32	66
Total	84	80	56	87	307

Chi-square, 31.05 (Significant at .05 level).
Degrees of freedom, 9.

Cross-Tabulations on Items Thirteen and Thirty-Seven

A cross-tabulation of items thirteen and thirty-seven indicated that three hundred and six respondents made responses on these items. Item thirteen states that "the development of an instructional program to effectively utilize the flexibility of open-space is a problem." Item thirty-seven states that "your adjustment to the flexibility of an open space school is a problem." The items gave the respondent a choice of four categories: major problem, minor problem, occasional problem, and nonexperienced problem in order to indicate their reactions to the problem listed.

A cross-tabulation reveals that twenty-eight respondents indicated that both items were nonexperienced problems and fifty indicated that both were an occasional problem. Sixty-five respondents indicated that developing the instructional program was a major problem while only fifteen considered adjusting to the flexibility a major problem. More respondents indicated that major and minor problems occur in the development of an instructional program than occur with their adjustment to the flexibility of open space. A chi-square test was administered and was significant at the .05 level with nine degrees of freedom. The results are listed in Table XXXVIII. Forty-three respondents selected item thirty-seven as a minor or major problem whereas 147

TABLE XXXVIII

CROSS-TABULATION OF RESPONSES TO ITEMS "THIRTEEN" AND "THIRTY-SEVEN" BY FREQUENCY

	Item Thirty-Seven				
Item Thirteen	Nonexperienced Problem 1	Occasional Problem 2	Minor Problem 3	Major Problem 4	Total
Nonexperienced Problem 1	28	6	3	1	38
Occasional Problem 2	61	50	9	1	121
Minor Problem 3	33	37	8	4	82
Major Problem 4	24	24	8	9	65
Total	146	117	28	15	306

Chi-square, 30.75 (Significant at .05 level).
Degrees of freedom, 9.

selected item thirteen as a minor or major problem; therefore, the flexibility of the open space school is not deterrent to the development of a program.

The writer can surmise that the respondents could consider all of the items cross-tabulated in Chapter IV as part of the development of an instructional program. However, the data suggest that when the items are considered individually by the respondents, they become a less serious problem than when considered as a general area of developing an instructional program for open space. As a result of the findings revealed in the ancillary data, the problems seem to be more "program" oriented than "teacher" or "facilities" oriented.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

I. INTRODUCTION

This chapter is organized into four sections. The study is summarized in section two followed by a presentation of the major findings of the study. The conclusions are drawn from these findings concerning problems experienced by teachers in open space schools. Some recommendations for school systems involved in the process of training and the retraining of teachers for open space schools are outlined in section four.

II. SUMMARY OF THE STUDY

Problem Studied

Open space schools present a different set of problems and concerns for teachers as they move from a traditional to an open space setting. Much direction is needed in planning training programs for teachers involved in this transition. As teachers experience problem areas in open space, it is imperative that these problems be identified

and school districts take steps to better prepare teachers for open space.

Purpose of the Study

The purpose of this study has been divided into two parts. First, the problems experienced by teachers in open space schools are identified by surveying teachers in selected open space schools in Tennessee. Secondly, a study was made of these responses to identify problem areas experienced by teachers and administrators. This information gives basis for recommendations to school systems planning in-service programs for teachers making the transition to open space or teachers already involved in the open space process.

Population of the Study

The population of the study was composed of the teachers and administrators of the open space schools serving grades 1-8 constructed in Tennessee from July 1, 1969 until May 1, 1973. The schools identified totaled twenty and eighteen ultimately participated in the study. The respondents totaled 313 of which 300 were teachers and thirteen were administrators.

Methodology and Procedures

The analysis of the indicated problem areas in open space education was based on the reactions of the respondents as reported on an instrument developed by the researcher. Additional information was obtained by grouping and combining information to seek patterns of responses and identify certain problem areas experienced by certain groups of respondents.

Description of the instrument. The instrument was developed by the researcher and contained eight demographic areas and twenty-five items. (See Appendix B.) The items are problem areas in open space as experienced by teachers in three pilot schools. The teachers of the pilot schools were asked to identify problems that they had experienced for the purpose of developing the instrument.

The respondents were asked to react to each item in one of four response alternatives. These alternatives were described by the researcher and are as follows: (1) Nonexperienced Problem, (2) Occasional Problem, (3) Minor Problem, (4) Major Problem.

Administration of the instrument. The initial contact was made by letter to the principals of the schools selected for study. After this contact a personal phone call was made by the researcher to the principals involved. The

instruments were then distributed and returned by mail to the researcher for processing and study.

Treatment of the Data

The different types of problem areas as experienced by the respondents were interpreted from the responses to the twenty-five items. An analysis of the responses was made by the demographic information. A problem intensity study was made of the reactions to the items by total responses as well as by demographic areas.

III. FINDINGS

Several questions were formulated to be answered by the study. The findings of the study are presented in response to these questions. The questions formulated to be answered were:

1. What are the perceived problem areas that adversely affect teacher effectiveness in open space schools?

2. Are there any significant differences between the way teachers with one year's experience in open space schools categorize problem areas than the more experienced teachers?

3. Are there any significant differences between the way secondary certified teachers categorize the different problem areas than those certified in elementary education?

4. Is there congruence in perceived problems between administrators of open space schools and teachers?

5. Are there any significant differences between the way teachers from the three geographic areas of Tennessee categorize the different problem areas?

6. Do the perceived problems seem to be one of several general types, e.g. instructional methodologies; organizational; facilities or interpersonal relations?

Problem Areas That Adversely Affect Teacher Effectiveness (Question 1)

The answer to Question 1 was sought by making an intensity study of the twenty-five items listed on the instrument. It was assumed that high-intensity problem areas will adversely affect teacher effectiveness in open space schools. Items were considered high-intensity areas when more than two-thirds of the respondents considered the item an experienced problem of some degree. Items that were considered a nonexperienced problem by more than two-thirds of the respondents are considered a problem of low-intensity.

The reader may recall that the problem of student movement (Item 14) was considered an experienced problem by 90 percent of the respondents. The development of an instructional program (Item 13) and the distraction of

students by learning noise (Item 17) were experienced problems by 86 percent of the respondents. It should be noted that these responses are from the total sample and do not involve any demographic divisions.

High-intensity items. The data reveals nine items that were considered high-intensity problem areas. These items include the development of an instructional program (Item 13), distraction of students by movement (Item 14), proper student supervision (Item 15), learning noise (Item 17), coordination of total program (Item 20), distraction of students by noise (Item 25), quiet areas for students (Item 28), distraction of students by activities (Item 31) and the need for assistance by paraprofessionals (Item 34).

Low-intensity items. The data reveals three low-intensity items. These items include observation of teachers (Item 22), parental visitation (Item 23) and the use of the IMC in open space (Item 33).

Conclusion

It can be concluded that there are certain specific reoccurring problems which trouble most teachers as they work with open education. The researcher surmises that high-intensity items would adversely affect teacher effectiveness in open space schools. Emphasis should be placed

on the incongruence of the reaction of teachers and administrators to problem items.

Responses of Teachers With Varying Amounts of Experience in Open Space Schools (Question 2)

In answer to question two, it was found that there were significant differences in the responses of three items when categorized by years of experience. The data revealed significant differences when measured by a chi-square test at the .05 level. There was a significant difference in the responses to item seventeen which centered on the problem of adjustment to learning noise. Item twenty-five centered on the problem of the distraction of teachers by noise and resulted in significant differences in the reactions of the respondents. A more detailed study of the responses when analyzed by years of experience is found in Chapter IV.

Conclusion

There are general patterns in the reactions of the respondents depending on how many years of experience they have. The pattern of responses indicated that as the teacher became more experienced in open space schools the number of major problem areas decreased. This would suggest that as the teacher gains experience in open space, he either adjusts to or resolves certain identified problems

associated with open space education. Sheer experience in the new setting thus modifies many of the anxieties. The question that must be raised is whether or not there are certain pre-service and in-service activities which can be engaged in to shorten this. Perhaps simply informing new teachers that these will likely be initial concerns would do much to alleviate the intensity of the problem.

Analysis of the Responses of Secondary Certified Teachers as Compared With Teachers Certified in Elementary (Question 3)

Question three was designed to reveal any significant differences in responses when analyzed by the certification of the respondents. There were no significant differences in the reactions of the respondents when studied by certification.

Conclusion

It can be concluded that areas of certification have no significant bearing on the responses of the respondents.

Congruence in Perceived Problems Between Administrators and Teachers (Question 4)

To answer question four, the data were analyzed in regard to the responses of teachers as compared with the responses of administrators. Variations in problems experienced were indicated and described in Tables XXIII, page 67,

and XXV, page 70, Chapter IV. The data revealed that the teachers indicated many more major problem areas than did the administrators.

A problem intensity study of the responses of the teachers and administrators was conducted. The following were considered problems of high intensity by the administrators but not by the teachers: cooperation of a team of teachers (Item 16), teacher rapport with other teachers (Item 27), and the storage of teaching aids (Item 36). The data also revealed two items that were considered problems of high intensity by the teachers but not by the administrators. These problem areas were maintenance of proper student supervision (Item 15) and distraction of teachers by noise (Item 25).

The data revealed four problem areas that were considered to be of low intensity by the administrators but not by the teachers. These problem areas were: utilization of space (Item 18), use of IMC (Item 19), Isolation of students (Item 29), and adjustment to the flexibility of open space (Item 37).

Conclusion

There was incongruence between administrators and teachers both with regard to number of problems, intensity of some problems, and kinds of problems. This suggests that

administrators may not be sensitive to teacher anxieties and thus may not behave in ways appropriate to the reduction of these anxieties. One might further conclude that some problems may thus continue to trouble for longer periods of time simply because the administrator is unaware of it and takes no steps to provide assistance to his teachers.

Responses of Teachers From the Three Geographic Areas of Tennessee (Question 5)

The answer to Question 5 was sought by making an analysis of the reactions of the respondents from the three geographic areas. It was found that there were no significant differences in the responses when measured by a chi-square test at the .05 level.

To give the study further depth, an intensity study was conducted of the high and low intensity of the items as revealed by the respondents. It was found that eight items were considered items of high intensity by all three geographic areas. These items were: development of an instructional program (Item 13), distraction of students by movement (Item 14), adjustment to learning noise (Item 17), coordination of the total program (Item 20), distraction of teachers by noise (Item 25), provision of quiet areas for students (Item 28), distraction of students by activities (Item 31). One item was considered a problem of

high intensity in East and Middle Tennessee but not in West Tennessee. This item centered on maintenance of proper student supervision (Item 15).

Conclusion

The location of the school within the state does not suggest that there should be dramatically different in-service and pre-service programs for teachers.

General Types of Problems (Question 6)

In answering Question 6 the items were clustered in four general types: instructional problems, interpersonal relations problems, facilities related problems and organizational problems. The data revealed that the cluster with the largest percent of major and minor problem reactions centered on facilities related problems. Instructional related problems had the second highest percentages of major and minor problem reactions. Items that centered on organizational problems received the third largest percentage of major and minor problem areas. The cluster of items that received the lowest percent of responses indicated as major and minor problem areas were items relating to interpersonal relations of teachers.

Conclusion

Respondents do not identify interpersonal relations as a serious problem in open space schools. However the

administrators did indicate this to be more of a continuous problem than did the teachers. It can be surmised that as problems arise as a result of poor interpersonal relations within a school many times these go unsolved because of poor communications. The reactions indicated that problems centered on the physical plant were more serious possibly because they were more visible.

IV. RECOMMENDATIONS

The section on recommendations is divided into two parts. The first part is recommendations that should be helpful to school districts involved in the training or retraining of teachers for open space schools. The second part is devoted to recommendations for further research. On the basis of this study the following recommendations are described.

Recommendations for School Districts

The following recommendations are designed to aid school districts involved in teacher preparation for open space schools. The problem areas listed below have been indicated as high-intensity problems by the respondents. The identified problem areas are described in such a way as to suggest an approach by the school districts that could be taken to ease the transition from the traditional structure to an open space facility.

The data indicated certain degrees of incongruence between the reactions of the administrators and those of the teachers. For example, teachers experience many more problems centered on student movement, distraction by noise, and space utilization. Conversely, administrators observe many more problems involving interpersonal relations. There may be at least two explanations for this incongruence. Administrators may be incorrectly attributing perceived teacher anxiety to the wrong causes and thus inadequately attending to the needs of teachers. It is also possible that the causes of administrator problems in open space schools are different than the causes of teacher problems. At any rate, these differences or perceptions should be addressed in an open forum so that any misconceptions can be discussed and resolved.

High-intensity problem areas by all respondents.

1. Teachers and administrators should be involved in a diagrammatical study of open space schools directed toward the effective use of the flexibility of open space. One way in which this can be implemented is to make a study of diagrams of different open space schools and as a result involve the faculty in the development of a plan for the school involved.

2. Major emphasis should be placed on teacher involvement in the development of organizational patterns to minimize the problem of student distraction by movement. This can be done by observing traffic patterns of students in the school under study or other open space schools.

3. Training sessions on the techniques of student supervision in open space schools should be provided. One way to achieve this would be to have a panel of teachers discussing the techniques they use in student supervision in an open space school.

4. Emphasis should be given to preparing the teacher in adjusting to the noise incidental to activity-based learning which occurs in open space education. To achieve this it is imperative that the teacher be psychologically ready to accept learning noise as a positive factor in education. To do this it would seem that teachers could design learning activities directed toward group participation and in turn analyze the effect of learning noise on learning.

5. Emphasis should be placed on the process of developing schedules that will allow for planning time as a group or as a team.

6. Teachers should recognize that certain activities should be planned for areas of the building that will not distract the total program. It is also important to select

other areas for "quiet areas". One way to achieve this would be by a study of the floor plan of the building. Faculties thus may recognize that certain areas of the building are more feasible for certain learning activities.

7. The school district should study the possibility of involving paraprofessionals for the instructional program of an open space school. One way in which this could be achieved is to first of all accept the flexibility of a differentiated staffing program. From this point a system of paraprofessionals can be utilized to aid in open space education.

Low-intensity problem areas by all respondents. The data revealed the following three low-intensity problems by the reactors. It is recommended that school districts recognize these problems but minimize the amount of in-service program time and emphasis placed on these areas.

1. Observation of teachers by colleagues throughout the day. Teachers simply do not reveal this to be a problem with which to contend in open space education.

2. The provision for parental visitation in the instructional area. Teachers do not consider this to be a problem and in many cases this is viewed very positively.

3. The use of the IMC in an open space school. This area could possibly be considered a problem by some but the

respondents did not consider this to be an important problem. It is evident that with the flexibility of open space the teachers were able to cope with this problem very effectively.

Recommendations for Further Research

1. A study would be helpful sampling the same group of teachers using a pretest and a posttest to identify problems that are perceived and experienced after exposure to an open space school.

2. Further study would be helpful in the problems involving evaluation and reporting to parents of students in open space schools.

3. Consideration should be given to a study that would identify more specifically the problems relating to the physical plant as indicated by the respondents.

4. As a result of the analysis of the ancillary data, further research is needed in the area of developing instructional programs for open space schools.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. BOOKS

Berger, Emil J. "Instructional Spaces." Instructional Aids in Mathematics, Thirty-Fourth Yearbook of the National Council of Teachers of Mathematics.

Bremer, Anne, and Bremer, John. Open Education A Beginning. New York: Holt, Rinehart and Winston, 1972.

De Vita, Joseph C.; Pumerantz, Philip; and Wilklow, Leighton E. The Effective Middle School. New York: Parker Publishing Company, 1970.

Flanders, Ned A. "Diagnosing and Utilizing Social Structures in Classroom Learning." The Dynamics of Instructional Groups. National Society for the Study of Education. 59th Yearbook, Part II. Chicago: University of Chicago Press, 1960.

Harris, Ben M., and Bessent, Wailand. In-Service Education. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969.

Silberman, Charles E. Crisis in the Classroom. Vintage Books. New York: Random House, 1971.

B. PERIODICALS

Barth, Roland S. "Starting Open Classrooms: Some Assumptions." The National Elementary Principal, LII (November, 1972), 68-73.

Brunetti, Frank. "Open Space: A Status Report." CEFP Journal, IX (September/October, 1971), 7-10.

Busselle, Samuel M. "Training Teachers to Work in Open Space." The National Elementary Principal, LII (September, 1972), 87-90.

Cameron, Sue. "Open Plan Spurs Staff to Greater Effort." The Times Educational Supplement (March 16, 1973), 9.

Carnish, Roger N. "Open-Education--A Rationale." Craft Educational Services, 1972, 10-11.

Carnish, Roger N. "Open-Education--The Ingredients." Craft Leadership Folio #46, 1972, 21-23.

Drummond, T. Darrell. "A Conversation with Sir Alec Clegg." The National Elementary Principal, LII (November, 1972), 17-24.

Ellison, Martha. "Open Education...Not for the Tired or the Timid." Kentucky School Journal (February, 1972), 17-20.

Fromberg, Doris P. "Organization and Staffing in British Primary Schools." The National Elementary Principal, LII (November, 1972), 31-34.

Gieziewski, Edward. "First Make Your Staff Creative." Instructor, LXXXII (May, 1973), 46-48.

Greenberg, James D., and Roush, Robert E. "A Visit to the 'School Without Walls': Two Impressions." Phi Delta Kappan, LI (May, 1970), 480-484.

Hapgood, Marilyn. "The Open Classroom: Protect It From Its Friends." The National Elementary Principal, LII (November, 1972), 43-48.

Manolakes, Theodore. "The Open Education Movement." The National Elementary Principal, LII (November, 1972), 11-15.

"Open Education: Can British School Reforms Work Here?" Nation's Schools, LXXXVII (May, 1971), 47-51.

Perkins, H. V. "Climate Influences Group Learning." Journal of Educational Research, XLV (October, 1951), 115-119.

Protheroe, Donald W. "School's Open--Lead Carefully." Craft Curriculum Service (September, 1972), 1-3.

Sandler, Gerald. "Through the Looking Glass to Open Education." The National Elementary Principal, LII (November, 1972), 74-76.

Staples, Ezra. "The 'Open-Space' Plan in Education." Educational Leadership, XXVIII (February, 1971), 458-463.

Windley, Vivian O. "A New Look At Teacher Education." The Urban Review (March, 1972), 3-11.

C. PUBLICATIONS OF LEARNED SOCIETIES AND OTHER ORGANIZATIONS

Open Space Schools. Washington: American Association of School Administrators, 1971.

Taylor, Eddie L. "Open Plan School." Innovations in the Elementary School. Institute for the Development of Educational Activities, Inc., 19-20.

The Open Plan School. Institute for the Development of Educational Activities, Inc., 1970.

The Open Space School: How Does It Work? Washington: American Association of School Administrators, 1971.

D. UNPUBLISHED MATERIALS AND INTERVIEWS

Bowling, Kermit W., Director of School Plant, Tennessee State Department of Education, Nashville. Personal Interview. September, 1972.

Cheek, Robert Edward. "The Opinions of Teachers Teaching in Selected Open-Space Elementary Schools." Unpublished Ed. D. dissertation, Wayne State University, 1970.

Coetzee, Arthur. "A Study to Determine Whether Different Organizational Climates Exist in Differently Designed Schools. Unpublished Ed. D. dissertation, University of Tennessee, 1972.

French, Russell L. "Developing Open Space Schools." Paper presented at the 1972 Association for Supervision and Curriculum Development Conference, Philadelphia, Pennsylvania.

French, Russell, Associate Professor of Curriculum and Instruction, The University of Tennessee, Knoxville, Tennessee. "What's Different About Open-Space Schools?"

APPENDIXES

APPENDIX A

MILLINGTON MIDDLE SCHOOL
4964 Cuba-Millington Road
Millington, Tennessee 38053

WILLIAM R. DURHAM
PRINCIPAL

The following is being used to help develop a more effective in-service training program for teachers moving from a traditional type situation to open space. Please comment to the following questions:

1. What impressed you most about your school meeting the needs of students through:

   (a) Space?

   (b) Characteristics of the structure? (i.e. carpet, colors, etc.)

   (c) Flexibility?

2. What type training is needed for teachers in open space schools?

3. How can teaching roles in open space schools be explained?

4. How can teachers best be prepared to work with students for the purpose of individualizing instruction and maximizing the use of an open space school?

5. What is your opinion of a lab-demonstration using students for training purposes?

6. How can a school-wide program of instruction best be coordinated?

APPENDIX B

— — —

PERSONAL DATA

(4) Teacher _____ (5) Administrator _____ (6) Grade level _____

(7) Area of Certification _____

(8) Teaching in Area of Certification: Yes _____ No _____

(9) Years of Experience (including this year) _____

(10) Experience in Open-Space school _____

(11) Last course taken at College or University _____ (year)

(12) Date last attended a College or University as full time student _____ (year)

The following is a list of problem areas in open-space schools as identified by selected teachers. Please categorize the following statements according to these four possibilities.

Major problem — Crucial problem that continues to adversely affect the total school program.

Minor problem — A problem less crucial but continues to plague the program and requires concern from the staff.

Occasional problem — Not continuous but a problem that can develop from time to time.

Non-experienced problem — A perceived problem area that has not been experienced in your teaching situation.

Code	*Category*	*Code*	*Category*
4	Major problem	2	Occasional problem
3	Minor problem	1	Non-experienced problem

____ 13. The development of an instructional program to effectively utilize the flexibility of open-space

____ 14. Distraction of students by movement in the immediate area

____ 15. Maintenance of proper student supervision in the immediate instructional area

____ 16. The cooperation of a team of teachers in the development of instructional strategies within a discipline

____ 17. The adjustment to learning noise of the educational process in an open-space building

____ 18. Utilization of all space in the instructional area

____ 19. Use of the IMC (library) in an open-space structure by students

____ 20. Coordination of the total educational program

____ 21. Utilization of audio-visual aids in open-space structure

____ 22. Observation of teachers by colleagues throughout the day

____ 23. Provision for parental visitation to the instructional area

____ 24. Distraction of teachers by the movement of other teachers and their students

____ 25. Distraction of teachers by noise created by other teachers while instructing students

____ 26. Freedom of movement of students within their area

____ 27. Teacher rapport with other teachers when their instructional behavior varies

____ 28. Provision of quiet areas for students

____ 29. Lack of the potential of closing the door to talk about a specific problem with "your student(s)" alone

____ 30. Dismissal of students for lunch, end of day, etc.

____ 31. Distraction of students by activities in areas other than their own

____ 32. Inter-disciplinary team cooperation by teachers in the development of curriculum and instructional strategies

____ 33. Use of the IMC (library) in an open-space structure by teachers

____ 34. Need for assistance by para-professionals

____ 35. Group visitation (by outsiders) in the instructional area during the school day

____ 36. The storage of necessary teaching aides in the instructional area

____ 37. Your adjustment to the flexibility of an open-space school

(over)

APPENDIX C

WILLIAM R. DURHAM
INCIPAL

MILLINGTON MIDDLE SCHOOL
4964 Cuba-Millington Road
Millington, Tennessee 38053

May 7, 1973

Dear Principal:

Those of us in open-space schools recognize the need to improve teacher training through in-service and staff-development programs. It is for this purpose that I am conducting some research in the area of teacher problems in open-space schools. This research is state wide and includes twenty-one selected schools serving grades 1-8. The State Department has been helpful in determining the schools that are to be surveyed.

I am requesting that you and your teachers respond to a brief questionnaire containing identified problem areas in open-space education. The results of this study will be furnished you upon request.

I will be contacting you by phone within the next few days regarding this matter.

Sincerely,

William R. Durham

WRD/mp

VITA

William Ralph Durham was born in Parsons, Tennessee on August 18, 1935. He attended elementary school there and was graduated from Parsons High School in 1953. After attending the National Hardwood Lumber Association School, he was in the lumber business in Nashville for five years. In the fall of 1959 he entered Memphis State University and received the Bachelor of Science degree in Education. In 1963 he entered the Graduate School at Memphis State University and received a Rusk Foundation grant. The Master of Arts degree in Administration and Supervision was received in 1964.

After doing advanced graduate work with the University of Tennessee, Knoxville, he received a full-time Educational Professional Development Act fellowship. He received the Doctor of Education degree with a major in Educational Administration and Supervision in June, 1974. He has been employed by the Shelby County School System as a teacher and principal since 1963.

The writer is a member of Phi Delta Kappa, National Science Teachers Association, National Education Association, and other state and local educational associations.

He is married to the former Lafon Duke of Darden, Tennessee and they have one daughter, Karen.